

THE METAPHYSICS OF SIMILARITY AND ANALOGICAL REASONING

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ABSTRACT

This work introduces the importance of similarity and analogy to philosophy, argues that analogy should be seen as “similarity based reasoning,” overviews different philosophical discussions to illustrate the scope of similarity-based reasoning, and introduces the assumptions for similarity-based reasoning that form the central topics of the present work. It demonstrates that approaches that reduce or identify relations to non-relational ontological categories fail primarily through the strategy of seeking truthmakers for relational claims. It takes up the related problems of co-mannered relations, substitution instances, individuating relations and similarities. It attacks the notion that substitution instances provide a non-relational account of relations and provides a proof that similarity is a more fundamental concept than substitution. Given, however, that similarity is relational, it argues relations are non-reducible to non-relational entities, but that if given the notion of relating in general and of similarity, one can construct a non-reductive theory of relations that can individuate all relations, including similarity relations themselves. This provides a workable theory of relations, but does not solve problems related to the epistemology of relations and similarity. Sanskrit debates concerning the metaphysical nature of similarity and its knowability are explored through contrasting the views of four Indian schools of thought: the Buddhist, Nyāya-Vaiśeṣika, Bhaṭṭa Mīmāṃsāka, and Prābhākara Mīmāṃsā. Within the Islamic tradition, analogy is rejected as a valid tool for legal reasoning by the Zāhirī school, and this is contrasted with the very tempered defense by the Shāfi‘ī school. The Islamic debates bring out more clearly the hermeneutical challenges, but it is argued that these challenges of interpretation are bound up in the challenges of the epistemology of relations and similarities. The work concludes that an epistemic virtue-theoretic account can help us better understand how analogical arguments can be true and non-vacuous, and argues we should cultivate the virtue of similarity and relation sensitivity.

TABLE OF CONTENTS

Abstract	i
Table of Contents	ii
Chapter One: The Importance and Scope of Analogy and the Relation of Similarity	1
Chapter Two: The Metaphysical Basis of Analogy I: Relations as Universals or Tropes	29
Chapter Three: The Metaphysical Basis of Analogy II: Theories of Relations	87
Chapter Four: The Metaphysical Basis of Analogy III: Theories of Relations Continued	107
Chapter Five: The Epistemology of Relations and Similarity: Knowing Relations, Knowing Analogies	141
Chapter Six: The Epistemology of Relations and Similarity II: Seeing Analogies	214
References	228

CHAPTER ONE: THE IMPORTANCE AND SCOPE OF ANALOGY AND THE RELATION OF SIMILARITY

ANALOGY AS CENTRAL TO ALL PHILOSOPHICAL PURSUITS

The problem of analogical reasoning is, simply put, the most fundamentally important problem in philosophy, and one that straddles the full range of philosophical areas of inquiry—metaphysics, epistemology, aesthetics, ethics, logic, philosophy of mind, and philosophy of language, and it therefore finds itself implicated in every philosophical discussion. The full complexity of the problem is brought to the foreground when one acknowledges that analogical reasoning is simply that which depends on the relation and recognition of similarity. Once we realize that an explanation of analogical reasoning requires an explication of the relation of similarity and its recognition, we are forced to confront the fact that we must take such reasoning for granted in any attempt to explain it.

One would be unable to recognize the words on these pages as words one knows if one does not have the epistemic ability to detect and cognize similarity; without similarity, we are rendered ineludibly mute. One could not speak of “types of things” since types depend on similarities holding between the particulars of that type. One could not speak of persistence over time since knowledge of persistence would depend on the ability to recognize relevant similarity through time. We would be left with a language of proper names (which is no language at all): without the ability to recognize similarity diachronically, it would be a language of ever changing names. In fact, the very ability to recognize what you are reading now is the same text as what you were reading moments before, and your ability to recognize these words as words you already know, depends on your ability to recognize a sameness, and what is sameness if not absolute similarity? Your ability to find this manuscript, after having set it down for a while, and resume reading from where you left off depends on an enormous number of operations, an edifice of recognition and reasoning built upon a foundational ability to

perceive, to be aware of, and to reason with similarity relations. Indeed, it is the very sophistication with which we as human beings can perform these actions that forms part of our uniqueness as a species of “rational animal.” To group organisms together in taxonomic structures, or to see ideas falling under a concept, to recognize something as the same type as another previously experienced thing, or to see some particular as belonging to a category all depend necessarily on similarity.

All philosophizing needs concepts. There are no concepts without similarity. Therefore, without similarity, there can be no philosophizing. It further seems that similarity is a necessary feature of the universe. Given any two unique entities, they are similar in that they are both *not* some other third unique entity. Similarity, then, is a given, but an incredibly significant one.

To claim that “x is like y” demands some specifiable similarity: a particular resemblance, something that they are similar in respect to. This claim differs from, say, literary analogies—similes—which Donald Davidson rightly points out are trivially true.¹ So love is like a red, red rose sprung in June because something can be found in common between any two things (freshness, beauty, et cetera), but as Davidson and others before him have pointed out, some commonality can be found between any two things. Hence we have the adage, “Everything is like everything else” or as Stuart Hampshire has formulated it, echoing Charles Sanders Peirce, “it is . . . necessarily true that everything resembles everything in some respect. Of any two things whatever, there is some respect in which they can be said to resemble each other and not to resemble some third thing.”² Douglas Greenlee has argued that indeed that this is a necessary and significant truth, whereas Davidson sees it, at least through the lens of similes, as a trivial truth.³ Greenlee calls this the Similarity of Discernables principle. So love is like a red, red rose but also like a rotting corpse. This triviality and generality of the similarity relation has cast analogical reasoning in a shadow of doubt and distrust, evident in some of the earliest theoretical discussions of the concept up to contemporary considerations. Semiotician Umberto Eco

¹ Donald Davidson, “What Metaphors Mean,” *Critical Inquiry*, 1978, 245–64.

² Stuart Hampshire, *Thought and Action*, vol. 11 (University of Notre Dame Press, 1983), 31.

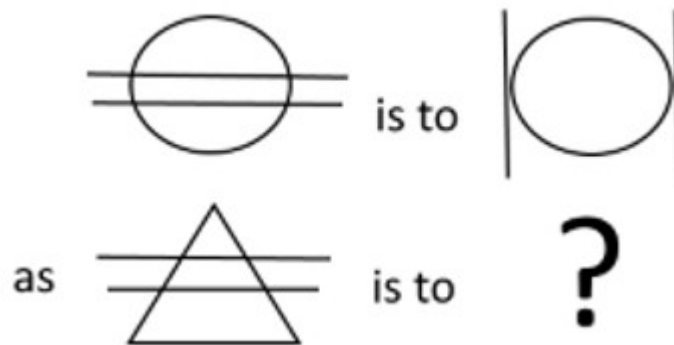
³ Douglas Greenlee, “The Similarity of Discernibles,” *The Journal of Philosophy*, 1968, 753–63.

has remarked on this suspicion, echoing sentiments we will see were earlier expressed by Plato, that

“[the] criterion of similarity displayed an overindulgent generality and flexibility. Once the mechanism of analogy has been set in motion there is no guarantee that it will stop The image, the concept, the truth that is discovered beneath the veil of similarity, will in its turn be seen as a sign of another analogical deferral. Every time one thinks to have discovered a similarity, it will point to another similarity, in an endless progress. In a universe dominated by the logic of similarity (and cosmic sympathy) the interpreter has the right and the duty to suspect that what one believed to be the meaning of a sign is in fact the sign for a further meaning.⁴

This triviality, transitivity and universality, though, violates the norms we use in assessing analogies. To illustrate what is meant, consider the old analogy tests from standardized exams: a fish is to a school like a tree is to a _____. There is a specific resemblance between the first set (fish, school) and the second set (tree, forest) which one must deduce in order to answer correctly. Another example avoids language altogether. Consider the set of images. To correctly answer this visual analogy, it too relies on recognizing the relevant similarities.

Fig. 1.



The visual analogy above is important, because as much as the present work will have to say about language and reasoning, it is important to bear in mind the often overlooked fact that mental activity is

⁴ Umberto Eco and Stefan Collini, *Interpretation and Overinterpretation*, Electronic (Cambridge University Press, 1992), 163–64.

also visually as well as linguistically and computationally situated, and a theory of analogy should satisfy these different “mediums” of thought.⁵

In observing the two analogies above, one cannot help but feel if one were to invoke Hampshire or Davidson to the test grader and declare that all the options were correct since “everything is like everything else” that the grader would be less than sympathetic to one's position and maybe accuse one of “hermeneutic drift” to use the term coined by Eco.⁶ Moreover, while everything may be like everything else, and a truth-conditional analysis of analogies and their literary cousins, similes, may reveal them to be trivially true, it cannot be the case that all analogical arguments are trivially true, wholesale, just because there is *some* shared respect between any two objects. The significance of the issue of trivial similarity claims will be addressed in later chapters of the present work.

Likewise, similarity and analogical reasoning plays an important role in the way we conceive of ethics under nearly all popular ethical theories. Reasoning based on precedent, based on rules or moral laws, or based on moral paradigms all depend on determining similarity relations: between the present situation and the precedent, the situation alike in such a manner as the same rule would hold, or between a moral paradigm and oneself as the subject of moral judgment. This kind of analogical reasoning girds many of our moral theories.

Moral education is often conceived as the inoculation of virtues or good character through moral exemplars or role models. Here, too, we are confronted with a potential problem stemming from similarity: such inoculation of virtue depends, it seems, on imitation. The very trite, and I will argue incorrect, presentation of virtue ethics is, “Find a good person, and do whatever they do.” Yet we are constantly cautioned that imitation is itself a sort of moral failing, a failure to be “authentic,” and that by imitating we are somehow less genuine, and run the risk of being “fake.” Such tension and this

⁵ For a detailed exploration of the role of analogy within the field of visual arts in particular see Barbara Stafford's far ranging exploration of visual analogy in *Visual Analogy: Consciousness as the Art of Connecting* (Cambridge, MA: MIT Press, 2001).

⁶ P. Bondanella, *Umberto Eco and the Open Text: Semiotics, Fiction, Popular Culture*, Revised Edition (New York: Cambridge University Press, 2005), 132.

“Faking Problem” was keenly observed by Islamic philosopher and ethicist Abu ‘Ali Aḥmad ibn-Muḥammad ibn-Ya‘qūb Miskawayh (about 932-1030 CE). In Miskawayh's Fourth Discourse in the *Tahdhīb al-akhlāq*, we are given the example of the man who acts temperately but who is not temperate (he is faking). He does not indulge in food, for example, because he doesn't know the pleasure of feasting like a shepherd may not, because he is afraid of being talked poorly of, he has been forbidden to, perhaps something is wrong with his taste buds so he can't enjoy, an ulcer prevents him from drinking wine, or so on.⁷ All of these lead a man to act as though he is temperate although he is in actuality not temperate. The same is assumed of justice (individuals may act as if just but not be just) and essentially all other personal qualities, moral or otherwise.⁸ If ethics are to be understood as a likeness with virtuous individuals, and moral education as insisting that individuals act like virtuous individuals, does not this insist on individuals faking and faking itself being a seeming vice?

These initial problems that confront us when we begin to think critically about analogy bespeak of the difficulties in nailing down just what is “analogy.” Defining analogy is somewhat problematic because it is a word that often means different things in different mouths, and it is used differently by the different academic disciplines. This difference finds expression in works from philosophy, law, literature, logic, linguistics, history, art theory, political science, cognitive science, and computer science. For the purpose of the present work, it is *analogical reasoning* that concerns us the most, but such reasoning is certainly involved in the simile of literature and the linguist, as well as that of the programmer working on image-recognizing robots. Analogical reasoning is generally defined as a type of reasoning that involves the use of a known source of information, the “source domain,” to understand something else, the “target domain.” Such reasoning relies on some relevant similarity holding between the source and target domains.⁹ “Analogy” will be used in the sense of analogical

⁷ Ibn Miskawayh, *Refinement of Character (Tahdhīb Al-Akhlāq)*, trans. Constantine K. Zurayk (Kazi Publications, Inc., 2003), 195.

⁸ Miskawayh, 100.

⁹ Stella Vosniadou and Andrew Ortony, “Similarity and Analogical Reasoning: A Synthesis,” in *Similarity and Analogical Reasoning*, ed. Stella Vosniadou and Andrew Ortony (Cambridge University Press, 1989), 6–7.

reasoning *in toto*, and the author hopes to briefly demonstrate the scope of such uses of analogical reasoning by offering several considerations, beginning with Plato and Aristotle and ending with computational models, and argue for an expanded scope of what we consider “analogical” to encompass *reasoning that makes use of similarity relations*. Then the problem of relations in general will be introduced independently and taken up in detail in the following two chapters.

ANALOGY IN PLATO AND ARISTOTLE

The use of analogies in Greek literature predates the philosophers, and the Homeric epics are replete with analogies. Analogies likewise abound in both the works of Plato and Aristotle. An analysis of the use of analogical arguments is found in both Plato's and Aristotle's works with the latter giving analogy a more serious logical examination. Analogical arguments are treated by both with some degree of suspicion, but despite expressed misgivings about analogical arguments, both philosophers commonly use them, resulting in somewhat of a “do as I say, not as I do” situation. Although the relationship with likeness (ὁμοιότης) is acknowledged, in some works the clear connections between analogy and similarity are not made. These explorations of similarity are useful to review, for although in what follows the connection between analogical arguments and the metaphysics of similarity is not drawn, it gives one a sense of the richness and manifold nature of analogy. In these texts, analogy is not always clearly distinguished from metaphor, but such cases are set aside here, and there are some clear considerations of analogical reasoning in relation to paradigms (παράδειγμα). The considerations and problems for analogical reasoning raised are important and anticipate much of the later work here. The aptness of analogy, whether analogies can be demonstrative or serve merely as rhetorical devices, the relation to other forms of reasoning such as deduction, the potential of analogies to mislead, and the detection of similarities as a skill enhanced by practice are all considered by these two philosophers.

ANALOGY, SIMILARITY AND REASONING IN PLATO

If there is any Greek philosopher who comes to mind in relation to analogy, it is likely Plato. His central work, *The Republic*, is professed to be an exploration of an analogical relationship that exists between the justice of the city and the justice of the soul, and contains one of the most well-known analogies in the Western tradition, “The Allegory of the Cave” that opens Book VII of *The Republic*, in which we must understand what analogical relationships exist between the cave, its shadows and shadow-casters, prisoners, and the outside world. Plato commonly makes analogical arguments in which the health of the body is used to illustrate the “health” of the soul (for example, *Crito* 47a9-48b1) or the knowledge of the craftsman is used to illustrate political and ethical knowledge (for example, *The Republic* 488e–489d and *Charmides* 161d-162b).^{10, 11} Such arguments' frequency in Plato's dialogues is perhaps best attested to in the outcry by Callicles in *Gorgias*: “By the gods [Socrates]! You simply do not let up on your continual talk of shoemakers and cleaners, cooks and doctors, as if our discussion were about them!”¹²

It is possible that such arguments are meant to be merely illustrative and show that some position or other is tenable. In the famous “Ship of the State Analogy,” the insight that we would not choose a ship captain by his or her persuasiveness but rather should choose the captain by his knowledge of the seas and sailing is suppose to show the absurdity of choosing state officials by their skill in rhetoric rather than by their knowledge of ethics and statecraft.¹³ As such, it perhaps merely shows the reasonableness of the position rather than demonstrating the truth of the claim being advanced. In light of this distinction, one recalls the discussion between Socrates and Simmias in

¹⁰ Unless otherwise noted, all citations from Plato taken from John M. Cooper and D. S. Hutchinson, *Complete Works of Plato* (Indianapolis: Hackett Publishing, 1997).

¹¹ For an fuller examination of the analogy from craft to virtue, see R. D. Parry, *Plato's Craft of Justice* (State University of New York Press, 1996).

¹² Cooper and Hutchinson, *Complete Works of Plato*, bk. *Gorgias*, 491a1-491a3.

¹³ Cooper and Hutchinson, bk. *The Republic*, 488e–489d.

Phaedo when Simmias provides an argument against the survival of the soul through the analogy of the lyre, in which soul is like a harmony and the body is like the lyre held together by strings.¹⁴ When the lyre comes apart, it is unable to produce a harmony; when the body comes apart, it is unable to produce a soul. Socrates introduces a second analogy, that of the old weaver, in order to further demonstrate that these arguments are not demonstrative and cannot prove the truth of either the survival or dissolution of the soul, a conclusion that deeply disappoints Socrates' companions.¹⁵ The result is that Socrates cautions them against becoming misologists, using an analogical argument from the origins of misanthropy!¹⁶ The general lesson is that analogies, at least in some cases, do not produce deductive proofs, but we should not be discouraged.

Such arguments from likeness may also be downright misleading. In *The Sophist*, a visitor from Elea has just been recommending what today we would call the “Socratic Method” to his interrogator, Theaetetus.¹⁷ The visitor says of these questioning people that he is afraid to call them sophists because he fears to pay sophists so high an honor.¹⁸ When Theaetetus replies that there is a similarity between this questioner and the sophist,¹⁹ the visitor responds that “And between a wolf and a dog, the wildest thing there is and the gentlest. If you are going to be safe, you must be especially careful about similarities, since the type you are talking about is very slippery.”²⁰ The visitor does not go on to explicate just how similarity is “slippery” but in *Phaedrus* we have such an explanation. The problems raised here are central to the study of analogy.

Socrates and Phaedrus are discussing what is here termed the “art of rhetoric.”²¹ Considering

¹⁴ Cooper and Hutchinson, bk. *Phaedo*, 85e-86e.

¹⁵ Cooper and Hutchinson, bk. *Phaedo*, 87e5-88c.

¹⁶ Cooper and Hutchinson, bk. *Phaedo*, 89d-91e.

¹⁷ Cooper and Hutchinson, bk. *Sophist*, 230b-230d4.

¹⁸ Cooper and Hutchinson, bk. *Sophist*, 230e5-231a3.

¹⁹ ἀλλὰ μὴν προσέεικέ γε τοιοῦτόν τι τὰ νῦν εἰρημένα. Plato, “Sophist (Greek),” *Perseus Project*, accessed April 17, 2015, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0059.tlg007.perseus-grc1:231>.

²⁰ Cooper and Hutchinson, *Complete Works of Plato*, bk. *Sophist*, 231a6-231a8.

“καὶ γὰρ κυνὶ λύκος, ἀγριώτατον ἡμερωτάτω. τὸν δὲ ἀσφαλῆ δεῖ πάντων μάλιστα περὶ τὰς ὁμοιότητας ἀεὶ ποιεῖσθαι τὴν φυλακὴν: ὀλισθηρότατον γὰρ τὸ γένος.” Plato, “Sophist (Greek),” *Perseus Project*, accessed April 17, 2015, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0059.tlg007.perseus-grc1:231>.

²¹ In the *Gorgias* there is an argument that unlike philosophy rhetoric is not an art but simply skill born from experience

what makes an artful speaker, they consider the case of the law courts in which an accomplished speaker will “make the same thing appear to the same people sometimes just and sometimes, when he prefers, unjust.”²² Socrates, using the example of “the Eleatic Palamedes” asks if it is not known that “his listeners will perceive the same things to be both similar and dissimilar, both one and many, both at rest and also in motion?”²³ He goes on to note that with rhetoric one can “make out as similar anything that can be assimilated, to everything which can be made similar”²⁴ By moving in small steps, one can make opposites seem as if they are instantiated in one and the same thing; by knowing “precisely the respects” in which things are similar and dissimilar one can not only detect such deceptions but carry them out.²⁵ This observation seems to prefigure Eco's that we observed earlier. The problem diagnosed here is monumental, for at least in the context of the *Phaedrus* it is seen as one of the roots of deception. Socrates summarizes their findings: “. . . the state of being deceived and holding beliefs contrary to what is the case comes upon people by reasons of certain similarities.”²⁶ This accusation is damning, but it is not arguments from similarity *qua* arguments that is indicted but instead the tricky reasoning of “moving in small steps” through similarities. If similarity is taken to be a transitive relation, such faulty reasoning looms large. As will be demonstrated in later chapters, restricted similarity claims, that is claims about a certain respect, are not transitive and such faulty reason is curtailed. It may be precisely this danger Plato diagnoses in this dialogue: similarity is a relation that trivially holds between any two items, and therefore is transitive. Yet for reasoning to accomplish what it must, and what it does, this transitivity and triviality must be avoided.

As might be suggested by Plato's own reliance on analogies, his perspective is not entirely negative. This more positive outlook can be seen in his recommendations of paradigms in works such

(462b-c).

²² Cooper and Hutchinson, *Complete Works of Plato*, bk. Phaedrus, 261d1-261d3.

²³ Cooper and Hutchinson, bk. Phaedrus, 261d9-261d11.

²⁴ Cooper and Hutchinson, bk. Phaedrus, 261e3-261e4.

²⁵ Cooper and Hutchinson, bk. Phaedrus, 262a.

²⁶ Cooper and Hutchinson, bk. Phaedrus, 262b2-262b4.

as *The Republic*, *The Sophist*, and *The Statesman*. The first is so obvious as not to need any further discussion, but the recommendations of paradigms as a method of investigation that appear in *The Sophist* and its sequel, *The Statesman*, warrant some discussion. *The Statesman* introduces Socrates' namesake to the idea of a paradigm by offering a paradigm of a paradigm!

A paradigm is a mode of analogical reasoning. A model is offered instead of a definition. So, to take a simple case, let us say that a basketball is presented, and we are told, "This is a basketball." To use the paradigm, we are expected to take other objects and compare them to the basketball in order to determine if they, too, are basketballs. Like analogical reasoning, there is room for error (to be discussed below). One might think a soccer ball is similar enough to the basketball model to be considered a basketball, too. As objects are accepted or rejected by the basketball expert, though, we get a greater sense of what similarities are relevant between the model and the other objects, so that we can rule out the soccer ball but accept the deflated basketball as matching our model. This is the same method as we will encounter in the final chapter's discussion of The Chicken Sexer Paradigm. Hence, this example is a paradigm or paradigmatic reasoning.

In *Statesman*, the Eleatic visitor, too, suggests that important things are difficult to study without the use of a model or paradigm (*παράδειγμα*) but explains to Socrates that the idea of a paradigm itself is in need of a paradigm so that it can be understood adequately.²⁷ The visitor uses the model of children learning to read and write as an example of paradigmatic instruction. As children become literate, they can recognize and read letters in shorter, easier syllables and are able to "indicate what is true in relation to them."²⁸ When the same letters appear in more complex syllables, however, they often are unable to adequately read them and therefore "think and say what is false" about them.²⁹ To

²⁷ Cooper and Hutchinson, bk. *Statesman*, 277d. *χαλεπόν, ὃ δαιμόνιε, μὴ παραδείγμασι χρώμενον ἰκανῶς ἐνδείκνυσθαί τι τῶν μειζόνων. κινδυνεύει γὰρ ἡμῶν ἕκαστος οἷον ὄναρ εἰδὼς ἅπαντα πάντ' αὖ πάλιν ὥσπερ ὕπαρ ἀγνοεῖν.* Plato, "The Statesman (Greek)," *Perseus Project*, accessed April 19, 2015, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0059.tlg008.perseus-grc1:277d>.

²⁸ Cooper and Hutchinson, bk. *Statesman*, 277e.

²⁹ Cooper and Hutchinson, bk. *Statesman*, 278a2-278a3.

instruct the children, one returns to those syllables to which they know and puts them beside those which they do not yet know; then they are compared.³⁰ The visitor explains:

In comparing them, we demonstrate that there is the same kind of thing with similar features in both combinations, until the things that they are getting right have been shown set beside all the ones that they do not know; once the things in question have been shown like this, and so become models, they bring it about that each of all the individual letters is called both different, on the basis that it is different from the others, and the same, on the basis that it is always the same as and identical to itself, in all the syllables.³¹

This paradigm itself is the paradigm for paradigmatic investigation; as one understands individual components or individual truths in relation to some simple things, one may set it beside more complex things in order to understand those complex things better.³² So the *Statesman* proceeds towards a better understanding of “expertise,” seeking to know what is the expertise of the king by beginning with examining the expertise of the weaver.

It is likewise in the earlier dialogue, *The Sophist*. In *The Sophist*, the method of first investigating a paradigm is suggested because, much like investigating justice in the city is easier than in the soul, a recognizable paradigm is easier to “hunt down.”³³ Through understanding how one recognizes a familiar paradigm, in this case, an angler, one can then apply the same method to discover more difficult paradigms. Therefore, paradigms may offer a method of moving from the known to the unknown by recognizing the respect that one already knows in a new and possibly more complex or important context. It is perhaps this movement from the known to unknown that led Plato's student

³⁰ Cooper and Hutchinson, bk. *Statesman*, 278a8-278b1.

³¹ Cooper and Hutchinson, bk. *Statesman*, 278b1-278c2.

³² Cooper and Hutchinson, bk. *Statesman*, 278e4-278e10.

³³ Cooper and Hutchinson, bk. *Sophist*, 218d. νῦν οὖν, ὃ Θεαίτητε, ἔγωγε καὶ νῶν οὕτω συμβουλευῶ, χαλεπὸν καὶ δυσθήρευτον ἡγησαμένοις εἶναι τὸ τοῦ σοφιστοῦ γένος πρότερον ἐν ἄλλῳ ῥάονι τὴν μέθοδον αὐτοῦ προμελετᾶν, εἰ μὴ σὺ ποθεν εὐπετεστέραν ἔχεις εἰπεῖν ἄλλην ὁδόν. Plato, “Sophist (Greek),” *Perseus Project*, accessed April 17, 2015, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0059.tlg007.perseus-grc1:218d>.

Aristotle to declare that paradigmatic reasoning had the “nature of induction.”³⁴, ³⁵

ANALOGY, SIMILARITY AND REASONING IN ARISTOTLE

Analogical arguments receive a formal treatment by Aristotle in several places. In *The Rhetoric*, Book II, Section 20, Aristotle is concerned with enthymeme (an argument in which one premise is not explicitly stated) and reasoning from paradigms.³⁶ Aristotle divides arguments from paradigms or analogies into two broad types: one which uses actual historical instances, and those which use invented instances. Of the second type, he offers several examples. His first example is an argument, which he puts into Socrates's mouth, that runs as follows: as athletes are not selected by lot but by fitness and ship captains are not selected by lot but by skills, so too should public officials not be selected by lot.³⁷ The second and third examples are from fables but have the same basic form. The value of these analogical arguments, Aristotle claims, is that they are illustrative, and with intellectual training, one can become skilled in framing them; fables are easy to invent, but actual historical parallels have more force in front of assemblies.³⁸

In *The Prior Analytics*, Book II, Sections 23-24, Aristotle addresses what he terms “rhetorical induction” and begins by sketching induction as determining a relation between “two extremes” through a middle term. If given properties *A* and *B*, and a group of particulars, *C*, if all *C* are *A*, but all *C* are also *B*, then all *A* are also *B*. What makes this induction, rather than deduction, depends critically on the particulars and the fact that knowledge that *C* are both *A* and *B* depends on experience: a survey

³⁴ Aristotle and Jonathan Barnes, *The Complete Works of Aristotle : The Revised Oxford Translation*, Bollingen Series, 71:2 (Princeton, N.J.: Princeton University Press, 1984), bk. Rhetoric, 1391a26.

³⁵ Unless otherwise noted, all citations from Aristotle have been taken from Aristotle and Barnes, *The Complete Works of Aristotle : The Revised Oxford Translation*.

³⁶ Aristotle and Barnes, bk. Rhetoric, 1391a21-25. λοιπόν δὲ περὶ τῶν κοινῶν πίστεων ἅπασιν εἰπεῖν, ἐπεὶ περ εἴρηται περὶ τῶν ἰδίων. εἰσὶ δ' αἱ κοιναὶ πίστεες δύο τῷ γένει, παράδειγμα καὶ ἐνθύμημα: ἡ γὰρ γνώμη μέρος ἐνθυμημάτων ἐστίν. πρῶτον μὲν οὖν περὶ παραδείγματος λέγωμεν: ὅμοιον γὰρ ἐπαγωγῆ τὸ παράδειγμα, ἡ δ' ἐπαγωγῆ ἀρχή. Aristotle, “Rhetoric (Greek),” *Perseus Project*, accessed April 19, 2015, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0086.tlg038.perseus-grc1:2.20>.

³⁷ Aristotle and Barnes, bk. Rhetoric, 1393b4-1393b8.

³⁸ Aristotle and Barnes, bk. Rhetoric, 1394a3-1394a9.

of all C .³⁹ In the section that follows, Aristotle moves on to explicitly consider the role that similarities play in making these sorts of determination and their differences.

Cases in which we have a paradigm are those in which an extreme is shown to belong to the middle term by means of a term which resembles the third.⁴⁰ Here, Aristotle gives a helpful example: “Let term A be evil, B making war against neighbors, C Athenians against Thebans, and D Thebans against Phocians.”⁴¹ What stands to be established is to fight against the Thebans is evil. This premise must be predicated on the supposition that making war against neighbors is evil. Justification for this supposition must come from the observances of cases in which war was made against neighbors, as in the case of D , the Thebans against the Phocians. Since it is clear that both C and D represent cases of B , and B has A (the property of being evil), the Athenians going to war against the Thebans is evil is proven.⁴² Clearly Aristotle is aware that the strength of the claim rests on demonstration that B is A as in D . This point is precisely why, in his consideration of rhetorical induction, he takes the survey of all the particulars to be critical and why the argument is not actually deductive, but instead an unassailable inductive argument with no possibility of being wrong since all the particulars are accounted for, and there is no extrapolation from a survey set to a larger population. Clearly in cases like “making war on one's neighbor” such a survey to see if in fact all B is A might not be possible. Examples of arguments of this form which are unassailable without an exhaustive account of the particulars seem completely possible, however; where A is organism, B is composed of cells, C is plants and D is animals, it seems that given that C and D are B , we can demonstrate that they are A even though we have not surveyed the entire population of plants and animals. We will consider these types of arguments momentarily when we turn to the role of similarity as discussed in *The Topics*. What is notable in the forms of the argument that Aristotle presents here is that they are well-formed analogical arguments with the respect

³⁹ Aristotle and Barnes, bk. Prior Analytics, 68b15-68b29.

⁴⁰ Aristotle and Barnes, bk. Prior Analytics, 68b37-68b40.

⁴¹ Aristotle and Barnes, bk. Prior Analytics, 68b40-69a1.

⁴² Aristotle and Barnes, bk. Prior Analytics, 69a1-69a10.

by which two things are alike being specified. The process of testing to see if in fact the two particulars or two sets of particulars are similar in that respect allows one to determine the truth of the claim being advanced.

In *The Topics*, Aristotle identifies both the discovery of differences among things as well as similarities among things as one of four principle elements of which arguments are composed, the other two being the “securing of propositions” and “distinguishing how many ways an expression is used.”⁴³ Unlike his discussion in *The Prior Analytics*, where he discusses arguments employing similarities as moving from information about particulars to other particulars, in *The Topics* he considers the movement from particulars to geneses and universals. He notes that likenesses are particularly important because it is through likenesses that geneses are distinguished (“as one is to one thing, so is another to another thing”, or, “as one is in one thing, so another is in another thing”).⁴⁴

This study of similarity has value in inductive arguments, hypothetical deduction, generating definitions, and rendering geneses and universals.⁴⁵ In hypothetical deductions, through the proving of one case taken to be like the case at hand, the case at hand is proven by the strength of its resemblance of the other case; it appears that reasoning from precedents, a form of paradigms discussed in *The Rhetoric*, would likely fall into the category of hypothetical deduction.⁴⁶ Likeness also provides for the generation of definitions when likenesses are observed in different contexts: windlessness inland and calm waters out to sea being examples which allow us to identify a similarity of both being “at rest.”⁴⁷ A genus is rendered when all of a species share some similarity, and earlier in *The Topics* Aristotle notes how similarities and differences allow us to nest one genus in another: so men, dogs and horses are all of the genus animals, but only dogs and horses are of the genus of four-legged animals, and only

⁴³ Aristotle and Barnes, bk. Topics, 105a20-105a25.

⁴⁴ Aristotle and Barnes, bk. Topics, 108a7-108a12.

⁴⁵ Aristotle and Barnes, bk. Topics, 108b7-108b23.

⁴⁶ Aristotle and Barnes, bk. Topics, 108b12-108b19.

⁴⁷ Aristotle and Barnes, bk. Topics, 108b24-108b27.

horses are of the genus hoofed animals.⁴⁸ Though the use of inductive arguments, we can render universal claims as in “all organisms are composed of cells” above; this logical movement is referred to as “reaching deduction through induction” in the discussion of “rhetorical induction.”⁴⁹

Through likeness relations, we are able to develop typologies and taxonomies, which, like Plato, Aristotle sees as a skill developed with experience. Skill is particularly needed in identifying similarities between things which are “far apart,” but careful examination of genres (or particulars) should detect if there is any property in common with all of them.⁵⁰ Hence we could think about similarity identification as a competency; the ability to detect obvious similarities would be a prerequisite for applying basic categorical terms (“man,” “horse”) but the ability to detect non-obvious similarities is a more sophisticated epistemic ability through which both definitions and discovery are possible.

ANALOGY AND KNOWLEDGE IN THE INDIAN TRADITION

The Indian tradition likewise has a rich tradition of philosophical debate surrounding analogy, and this debate is generally framed by the question of whether analogy (*upamāṇa*) is a valid means of knowing, a *pramāṇa*, and if such knowledge is indeed gained on the basis of similarity (*sādrśya*) and not reducible to other *pramāṇas*. The debate over what constituted valid knowledge and how such knowledge was grounded came in part to define the different Indian schools of thought. For the purpose of this work, the sister schools of Nyāya and Vaiśeṣika, the Bhaṭṭa Mīmāṃsā, the Prabhākara Mīmāṃsā, and the Buddhists as represented by primarily by Dharmakīrti and Ratnakīrti, will be considered. The debates between these schools of thought will be detailed in Chapter Five, but by way of introduction a discussion of a Nyāya-Vaiśeṣika general theory of analogy will be useful.

Analogy has been considered a distinct *pramāṇa* since the very inception of the school Nyāya,

⁴⁸ Aristotle and Barnes, bk. Topics, 108b27-108b31; 107a3-107b37.

⁴⁹ Aristotle and Barnes, bk. Prior Analytics, 68b15.

⁵⁰ Aristotle and Barnes, bk. Topics, 108a12-108a15.

which is generally understood as emerging from the foundational text, the *Nyāyasūtra* of Akṣapāda Gautama that perhaps dates as early as the sixth century before common era.⁵¹ This text provides a list of the *pramāṇas* that are accepted by the Nyāya school as valid, and the objects of such valid knowledge, the *prameya*. These are given as perception, inference, analogy or comparison, and word or testimony.⁵² For the Nyāya school, analogy was considered a distinct cause of knowledge, although discussions of how analogy functioned and what grounded analogy continued to develop within the commentary tradition. Keeping in view only the *Nyāyasūtra*, however, we find an initial explication of analogy. Analogy or analogical knowledge (*upamānam*) is knowledge which results from known similarity.⁵³ There are some exegetical problems associated with the passage in which this definition is introduced, particularly the ambiguity of whether *upamānam* refers to analogy or the knowledge resulting from analogy, and later commentators have provided additional glosses.⁵⁴ So, a gaur is like a cow.⁵⁵

The later Naiyāyika philosopher, Vātsyāyana, whose date is given by Ingalls as the third century of the common era, asks what then is analogy as an instrument of knowing.⁵⁶ This is the very question that Chapter Four will take up, jumping off in part from Vātsyāyana's question and his response to himself. Here, it is worth noticing what the later philosopher of the Navyanyāya philosophical school, Viśvanātha Pañcānana, who worked during the seventeenth century of the common era, has said about in an expanded discussion of analogy in his *Bhāṣāpariccheda* and self commentary, the

⁵¹ Karl H. Potter, "Historical Resume," *The Encyclopedia of Indian Philosophies, Volume 2: Indian Metaphysics and Epistemology: The Tradition of Nyaya-Vaisesika up to Gangesa* (Princeton: Princeton University Press, 2015), 4.

⁵² Gautama, "Nyayasutra," GRETIL - Göttingen Register of Electronic Texts in Indian Languages, 1.1.3, accessed January 9, 2016, http://gretil.sub.uni-goettingen.de/gretil/1_sanskr/6_sastra/3_phil/nyaya/gaunys_u.htm.

⁵³ Gautama, 1.1.6.

⁵⁴ The later Naiyāyika philosopher, Vātsyāyana, whose date is given by Ingalls as the third century of the common era, provides an explanation: "prajñātena sāmānyāt prajñāpanīyasya prajñāpanam upamānam iti " That is, that *upamānam* is the knowledge (*upamiti*) of some entity that results from the knowledge of some similarity (*sāmānya*). Gautama, "Gautama: Nyayasutra, with Bhasya," GRETIL - Göttingen Register of Electronic Texts in Indian Languages, 168, accessed June 9, 2016, http://gretil.sub.uni-goettingen.de/gretil/1_sanskr/6_sastra/3_phil/nyaya/nysvbh1u.htm.

⁵⁵ Gautama, 168.

⁵⁶ Karl H. Potter, "Vātsyāyana," *The Encyclopedia of Indian Philosophies, Volume 2: Indian Metaphysics and Epistemology: The Tradition of Nyaya-Vaisesika up to Gangesa* (Princeton: Princeton University Press, 2015), 239. Gautama, "Gautama: Nyayasutra, with Bhasya," 169.

Siddhāntamuktāvalī. When a villager who has been told that a gayal, which he has never seen, is like a cow, then he knows something about a previously unknown target domain, that is that a gayal is cow-like.⁵⁷ At this point this knowledge is primarily linguistic (*śabda*), knowledge that “a gayal is like a cow.” When he sees a gayal, however, he comes to have perceptual knowledge of its similarity with a cow, from his previous experiences of cow, even if ignorant of the name of the creature “gayal” (but this point is not brought out by Viśvanātha⁵⁸). Viśvanātha does observe, however, when the villager who has been told “A gayal is like a cow” later on sees a cow-like animal and concludes that it is a gayal, it is through his (1) recognition of the similarity between the cow and the gayal, and (2) through his recollection of this testimonial information, that he was able to be correct in his identification that this animal is denoted by the term “gayal.”⁵⁹ His knowledge, then, that “This is a gayal” results from this operation of analogy through the instrument of similarity that is perceived. His knowledge then is the denotation of the word “gayal.” This is a distinctively linguistic understanding of analogy.

There were those among the Indian traditions that denied that knowledge of *sādṛśya* constituted a distinct *pramāṇa*, such as the Vaiśeṣika and the Buddhists. As way of an introduction, the Buddhist objection will be considered as it clearly indicates that the question of analogy as a means of knowing is not merely an epistemic one but also one concerned with the metaphysics of similarity. The standard Buddhist view is that there exist only two *pramāṇas*, *perception (pratyakṣa)* and *inference (anumāna)*,

⁵⁷ Viśvanātha Nyāyapañcānana Bhaṭṭācārya, *Bhāṣā-Pariccheda with Siddhānta-Muktāvalī*, trans. Swāmī Madhavānanda (Calcutta: Advaita Ashrama, 1954), *karika* 79; John Vattanky, *Nyaya Philosophy of Language: Translation and Interpretation of Kārikāvalī, Muktāvalī, and Dinakarī*, vol. 5 (New Delhi: Sri Satguru Publications, 1995), 89–90.

⁵⁸ This issue will be picked up again in Chapter Four as we will see that this knowledge of similarity may critically depend on the peculiar Nyāya view of “direct realism” of universals, *sāmānya*. The Nyāya hold such universals are directly perceptible. As Monima Chadha has pointed out, pulling from Jayanta, as person who sees a camel for the first time will be able to recognize another camel *as the same type of thing* the next time s/he sees one, but the explanation given here is because the same universals directly perceived in the first camel (camelness) are perceived in the second camel—therefore, it is an issue not of similarity but sameness of perception. The problem arises that perhaps knowledge of “a gayal is like a cow” is just knowledge that the gayal also has the universal “dewlapness” or others shared by the cow. Hence, how and if knowledge by similarity is different than knowledge of universals, *sāmānya*, is a question that the Naiyāyikas must address if they are to hold similarity is a different *pramāṇa* than perception or testimony. See Monima Chadha, “On Knowing Universals: The Nyāya Way,” *Philosophy East and West* 64, no. 2 (2014): 292–94, <https://doi.org/10.1353/pew.2014.0036>.

⁵⁹ Vattanky, *Nyaya Philosophy of Language: Translation and Interpretation of Kārikāvalī, Muktāvalī, and Dinakarī*, 5:89–90.

and to some extent this latter is derivative of the former. That there are only two means of knowing is based in part on the idea that the only thing that is knowable are what are variously termed the *dhammas* (Pali: *dhamma*), *svabhāvas* (self-beings) or *svalakṣaṇas* (self-qualities), the former being the psycho-physical events that make up the Abhidhamma analysis of reality and the later generally being considered the nature (or self-nature) that is the only item of reality to be known, characterized at times as objective entities “out there in the world.”

To follow the Abhidhamma explanation of the *dhammas*, these are entirely unique entities that constitute the whole of conditioned human experience.⁶⁰ These *dhammas* possessed only utterly unique, intrinsic properties (*svalakṣaṇas*) and self-being (*svabhāva*). Because of their utter uniqueness, however, they cannot stand in any relation of similarity: a thoroughgoing nominalism insists that because no *dhamma* can have any property in common with any other *dhamma*, no relation of similarity can hold between them.⁶¹ Only cognition of the *dhammas* constitutes veridical awareness. Hence, analogy or analogical knowledge (*upamānam*) as knowledge resulting from known similarity was rejected as a veridical means of knowing since any “knowledge” of similarity was false since it could not be cognition of the *dhammas* or *svalakṣaṇas*, since similarity would imply impossible shared qualities. Furthermore, knowledge of the relation must itself constitute a *dhamma* or *svalakṣaṇa* as the

⁶⁰ It is true that earlier texts, such as the *Paṭisambhidāmagga*, seem to suggest all *dhammas* (it lists 201) have some shared nature (a single self-nature, *svabhāva*), but this shared nature is rejected in later Abhidhamma texts (A. K. Warder, ed., *The Path of Discrimination (Paṭisambhidāmagga)*, trans. B. Nāṇamoli (Pali Text Society, 1997), sec. 5. It is quite possible that the *Paṭisambhidāmagga* introduced this term into Pali language philosophy (Noa Ronkin, *Early Buddhist Metaphysics: The Making of a Philosophical Tradition* (London: Routledge, 2011), 95.). Likewise, there are other interpretations of what “*dharmā*” means, as sometimes the teachings and sometimes the objects of that teaching or these metaphysical objects. One text, accepted as canon among Burmese Buddhists but not necessarily other communities, the *Peṭakopadesa*, provides a heuristic tool for interpretation which itself exerted great influence over the tradition in which wording (Pali: *vyañjana*) is to be distinguished from meaning (Pali: *attha*) (*Peṭakopadesapāli*, Chātṭha Saṅgāyana Pāli Tipiṭaka (Dhamma Giri: Vipassana Research Institute, 1995), secs. 2–3.) One principle of such is whether groups are grouped for wording or are meant to be distinguished by some commonality or as a set (*Peṭakopadesapāli*, sec. 48). This allowed later commentaries, namely the *Saddhammapakāsinī* attributed to Mahānāma, to accept the idea of *svabhāva* as introduced by the *Paṭisambhidāmagga* but deny that it was actually a shared property among *dhammas* and therefore better reconcile it with the notions of *svabhāva* and *svalakṣaṇa* that had been developed subsequently within the tradition.

⁶¹ Hence, of the 24 relations (Pali: *paccaya*) analyzed in the Abhidhamma texts, the *Paṭṭhāna* and *Mahāpakararaṇa*, similarity is conspicuously absent. These relations are, however, of a particular sort, and perhaps better understood as psycho-physical conditions and the relations between conditions, causes and effects, rather than as relations in general.

only legitimate object of knowledge, but this relation-*dhamma* would then fail to be about the two *dhammas* about which similarity was a means of knowing, and the similar feature would have to be abstracted away from the *svalakṣaṇa* which is, by the very nature of *svalakṣaṇas*, impossible. Later Buddhist thinkers, particularly Dharmakīrti who will have our attention in chapter five, developed additional arguments against both relations, similarity, and analogical reasoning by attacking the idea of shared properties as “universals” (*sāmānya* or *sāmānyalakṣaṇa*) upon which he sees *upamāna* as depending. Hence perceptions of similarity or talk that invokes relations or universals are in some sense ultimately misleading.

ANALOGY, CONCEPTS AND COMPUTATION

Unsurprisingly, we find a close relationship between our *ability* to recognize similarity and *use* analogical reasoning and our *use* and *understanding* of language. If language was to function as a source of information about the world, then it must be through testimony. If testimony is to function as knowledge, and hence for language understanding to function as an epistemic faculty, it must not be a faulty means of knowing. Therefore, the language of the speakers must be fixed in some way, perhaps by a mandate among speakers or through socialization, in order that they might refer to the same objects in order to communicate knowledge about them. The differences in idiolect within a linguistic community make little difference so long as the language still serves to referentially coordinate statements to each other. That is, the ability to coordinate between similarities in observation with similarity in linguistic ascription builds, in W. V. O. Quine's language, a conceptual schema. As Quine notes, when we say “rabbit” we may be speaking of “a stage of a rabbit, an integral part of a rabbit, a rabbit fusion, or to where rabbithood is instantiated [*sic*],” but the practical differences in these concepts and usages are so subtle that knowledgeable speakers who take these different interpretations will not miscommunicate with each other over the usage of the term “rabbit” since their idiolects exhibit

isomorphic derivational structures and referential apparatuses, that is, they have a shared conceptual schema.⁶² *Sameness* of meaning might not be preserved among these different referents to the word “rabbit” but as long as *similarity to a certain tolerance* is preserved, we might never even notice the difference in the referent between rabbit fusions and rabbits. It is in part because of the shared conceptual schema of socialized meaning that language is able to serve as a vehicle of knowledge.⁶³ This concept of “similarity to a certain tolerance” will be developed in subsequent chapters as key component of a theory of similarity.

As Quine points out, the ability to share in the accumulated knowledge of the linguistic community depends on the ability to pick out the same or similar objects and recognize the same or similar relationships among them through signifiers, whose conventional relationships we understand through language acquisition. Therefore, the understanding of a language is the understanding of a number of similarity relations: it must exhibit similar properties that could provide evidence for beliefs about the world via testimony if the observability of the phenomenon is such that someone else may have had such an experience of observing it and being able to recognize those similar properties or events. It is not sameness; we hear words said differently, yet because these pronunciations are similar to a degree of tolerance, information is conveyed. If the pronunciation is not similar enough, say because of a strong accent, then communication breaks down. Language acquisition then, under Quine's theory of radical translation, then is just the coordination of similar utterances with similar stimuli. Therefore, language acquisition depends on our ability to recognize and coordinate similarities both in the world and linguistically.

This process has a digital analog. In image-recognizing programs, such as the open-source software Pixy, which can be used to create object-tracking robots, or more sophisticated systems like

⁶² Willard V. O. Quine, *Word and Object* (Cambridge: MIT Press, 1960), 52–53.

⁶³ It is worth noting here that if we employ “similarity to a certain degree of tolerance” to coordinate word meanings rather than “sameness of meaning” we can avoid many of the classical problems of analyticity that Quine himself was so concerned about.

SentiSight which have applications in “augmented” reality, similarity grounds the reasoning process. The process of computer learning and its application are illustrative. Pixy is integrated with a camera and connects to a microprocessor; she operates by first “learning” an object by generating a virtual map of the object by assigning areas values according to hues.⁶⁴ Hence, one teaches Pixy to identify a yellow ball by showing it the ball and telling it this is something you want it to remember. Pixy runs an algorithm on what it “sees” 50 time per frame, and uses color statistics to determine if it is seeing an object-type that she has already learned; that is, she compares image-maps in her memory with present image-maps.⁶⁵ Whenever something that looks like the ball (image-maps identification in shape and hue to a degree of tolerance) are presented to Pixy, she then recognizes it; using the microprocessor and the information that Pixy has recognized something, the system of which Pixy is a component can be commanded to do something, such as approach the object or stay a certain distance from object. The ability to recognize the new object then is based on its memory of the object she learned.

SentiSight is a much more powerful program, and can be taught thousands and thousands of objects and integrated into things like eyewear, yet it functions almost the same as Pixy.⁶⁶ So one could present SentiSight with a tree leaf, and by comparing the similarity with the present leaf with those leaves it has previously been taught, SentiSight could determine the type of leaf and therefore the species of tree which it came from. Perhaps the more modern example is its ability to detect the brand name and kind of soup you just picked up in the market and inform you that it is cheaper at another shop.

These examples from image recognition software, though, illustrate that the model of going from known to unknown is too impoverished. When the villager sees *another* cow, which he has not seen before, he also recognizes it as a cow because he perceives its similarity. This knowledge does not

⁶⁴ “CMUcam: Open Source Programmable Embedded Color Vision Sensors,” accessed August 12, 2015, <http://cmucam.org/>.

⁶⁵ “CMUcam: Open Source Programmable Embedded Color Vision Sensors.”

⁶⁶ “Object Recognition for Robotics and Computer Vision,” accessed January 4, 2016, <http://www.neurotechnology.com/sentisight.html>.

reduce to linguistic knowledge, as Mohima Chadha has pointed out in her discussion of the direct perception of universals in Nyāya thought.⁶⁷ Citing Jayanta Bhaṭṭa (ninth century), she notes that a man who sees a camel for the first time, but is not told what it is, will recognize the humped animal he encounters later as the same sort of thing despite not having any explicitly linguistic knowledge of it.⁶⁸ Likewise, when one hears the word “cow” spoken by someone else, one can recognize it as the same word spoken by another person. “Re-cognition” is not the movement from known to unknown, but the *return* to the known. However, recognition depends on analogical structures as well—the ability to detect similarity between something being presented and something already presented. Pixy already “knows” the yellow ball—it just takes an operation, in her case the running of an algorithm, for her to recognize this is an object she already knows. Likewise, one suspects that there is some analogous structures and processes in human beings that produces recognition, whether recognizing this manuscript is the same you laid down, or that this man is your husband, or recognizing a stranger's perfume as that which your grandmother used to wear. Such a suspicion is strengthened given case studies in which this ability in certain domains of knowledge is impaired by brain damage or that snakes and objects similar to snakes spawn particular recognition responses (perhaps explaining why mistaking a rope for a snake is the refrain example of mistaken perception in the India traditions—it seems like we are hardwired to recognize snake-like objects *as* snakes).⁶⁹ Hence, it would seem that even discerning identity is a result of the ability to detect similarity and reason with it.

These examples of recognizing a cow as a cow in the case of the villager or a yellow ball as a

⁶⁷ Monima Chadha, “On Knowing Universals: The Nyāya Way,” *Philosophy East and West* 64, no. 2 (2014): 287–302.

⁶⁸ Chadha, “On Knowing Universals,” 292.

⁶⁹ There is a vast literature on this subject. For a popular introduction, see Vilayanur S. Ramachandran, Sandra Blakeslee, and Oliver W. Sacks, *Phantoms in the Brain: Probing the Mysteries of the Human Mind* (William Morrow New York, 1998). For more specific and more recent works that try to pinpoint some of these recognition processes, see Serge Brédart, Catherine Barsics, and Rick Hanley, “Recalling Semantic Information about Personally Known Faces and Voices,” *European Journal of Cognitive Psychology* 21, no. 7 (November 1, 2009): 1013–21, <https://doi.org/10.1080/09541440802591821>. or Dirk T. Leube et al., “Successful Episodic Memory Retrieval of Newly Learned Faces Activates a Left Fronto-Parietal Network.,” *Brain Research. Cognitive Brain Research* 18, no. 1 (December 2003): 97–101. Quan Van Le et al., “Pulvinar Neurons Reveal Neurobiological Evidence of Past Selection for Rapid Detection of Snakes,” *Proceedings of the National Academy of Sciences* 110, no. 47 (November 19, 2013): 19000–5, <https://doi.org/10.1073/pnas.1312648110>.

known object for Pixy also provide us with another way of speaking of analogical reasoning: as a process of mapping. Pixy and similar software, like facial or fingerprint recognition software, work by comparing two image-maps, pixel by pixel, and determining if they are similar to a specified degree of tolerance and on what parameters. The villager could be described as comparing the mental image of a cow from memory to the forest animal in front of him, and seeing if the images map onto each other. There is another sort of mapping, though, that can be used (analogously) as a way of understanding additional dimensions of analogical reasoning.

We are all familiar with the idea that analogical arguments are inductive because while the premises could be true, the conclusion could still be false, and as we saw, this had been observed by the classical Greek philosophers. This idea is one to which we will return, but most will uncritically accept this as a truism heard in each introductory logic class.

In terms of computation, we can elaborate on this difference as a difference in a *rule firing* and a *mapping*.⁷⁰ In rule-based systems (think deduction), a rule fires when its conditions are met: if yes, then do X, if no, then do nothing. So there may be a rule, that “If X is a dog, then it barks.” Given that Marmaduke is a dog, a rule fires that tells us, “Marmaduke barks.” In a mapping-based system (sometimes called a “representational system”), let us assume that this rule is not available.⁷¹ Instead, we have a representation of Marmaduke, which includes information like “Marmaduke is a dog,” and “Marmaduke barks.”

Now let us input into this system that “Snoopy is a dog.” Now our system can infer, “Snoopy is like Marmaduke in that they are both dogs.” Now we have some justification, albeit weak, to make inferences like “Snoopy barks.” If we know many things that are dogs, and if we have many strong associations of the qualities of a dog, we will be safer in making many inferential associations with Snoopy, the name, with the general term of which Snoopy is a species. Shared respects becomes a

⁷⁰ Keith J. Holyoak and Paul R. Thagard, “A Computational Model of Analogical Problem Solving,” in *Similarity and Analogical Reasoning*, ed. Stella Vosniadou and Andrew Ortony (Cambridge University Press, 1989), 246.

⁷¹ Holyoak and Thagard, 246.

basis for inferring other probable shared respects. As respects become more restrictive in their conjunctions, we narrow down the possibility of particulars matching such respects. If all dogs we know bark, and we know plenty of dogs, we have good reason to think that Snoopy, if a dog, barks. That inductive process is a result of analogy, and one more akin to the classical description of moving from the “known to the unknown.” It is inductive because our inferred shared respects could be wrong. If, for example, all the dogs we know are like Marmaduke in that they are enormous, and we infer the Snoopy, a beagle, is also enormous, then we would be in error although the inference might have been justified as being inductively strong.⁷²

This concept of mapping also leads us towards another way in which analogical reasoning and similarity is so tightly bound to language use. As observed by Quine, the ability to recognize and coordinate similarities (similar utterances in response to similar stimuli) provides us with one model of language use, as in the case of radical translation and Quine's “meaning behaviorism.”⁷³ Robert Brandom challenges us to reconsider this picture of language acquisition and mastery by asking us to consider how a language user under such a theory is different from a measuring instrument, such as a thermometer.⁷⁴ What are the differences between such an instrument, he asks, and an “observer who noninferentially acquires beliefs or makes claims about environing temperatures and colors?”⁷⁵ Brandom identifies the difference as one of understanding, and this difference marks the divide between responsive classification and conceptual classification. He writes

⁷² There is something to be said with this computational model of mapping and the movement in the formal Nyāya five step argument of the from the *udāharana* step, or demonstration of concomitance (“The dog Marmaduke is large, to the *upanaya* step, the application of the mapping to the present object (“Like Marmaduke, Snoopy is a dog”). Stephen H. Phillips points out although the five step argument operates deductively, the premises are arrived at inductively, and I would hold the relation between the *udāharana* and *upanaya* rests of a similarity claim (Stephen H. Phillips, *Classical Indian Metaphysics: Refutations of Realism and the Emergence of “New Logic”* (Motilal Banarsidass Publ., 1997), 55.). The fact that we cannot survey all instances of dogs however tempers our reasoning with fallibilism, just as observed by Aristotle as well as by Vācaspati Miśra (*Prior Analytics* 68b15-68b29; Karl H. Potter, “Relations,” in *The Encyclopedia of Indian Philosophies, Volume 2: Indian Metaphysics and Epistemology: The Tradition of Nyaya-Vaisesika up to Gangesa, vol. 2* (Princeton University Press, 1977), 67, <http://www.jstor.org/stable/j.ctt13x1d1b.7>).

⁷³ W. V. Quine et al., *The Boolos Panel* (Philosophy International, 1994), 00:01:12-00:08:20.

⁷⁴ Robert Brandom, *Making It Explicit: Reasoning, Representing, and Discursive Commitment* (Harvard University Press, 1998), 88.

⁷⁵ Brandom, 88.

. . . the difference between merely *responsive* classification and *conceptual* classification—is their mastery of the practices of giving and asking for reasons, in which their responses can play a role as *justifying* beliefs and claims. To grasp or understand a concept is, according to Sellars, to have practical mastery over the *inferences* it is involved in—to know, in the practical sense of being able to distinguish, what follows from the applicability of a concept, and what it follows from.⁷⁶

While inferentialism has much more to say about meaning, conceptualization and conceptual classification, the ability to apply the known (Marmaduke) to the unknown (Snoopy) through known and inferred similarities girds an enormous amount of our practical everyday lives. Conceptual classification plays just as vital a role in our everyday lives as it does in philosophy. Recognizing, for example, when a known rule holds in a new situation requires the recognition of the relevant similarities needed to invoke the necessary inferences, such as stopping at a stop sign at a four way stop one has never been to before, or understanding how an elevator, which one has never been in, works based on previous experiences with other elevators. Conceptualization involves understanding the inferential relations that exist between concepts, so that one is capable of inferring from “Snoopy is a dog” to “Snoopy barks.” This process, which Brandom develops in his theory of inferentialism, can be understood as an application of analogical reasoning.

Hence, we can see that analogical reasoning covers a wide range of the human epistemological experience. The thread, the similarity that runs through them all, is the dependence on recognizing similarities whether through the use of paradigms in education, purely mechanical computation like Pixy and her image-maps, to making inferences about the features of new particulars like previously unknown dogs or elevators. Given that all of these ways of knowing and reasoning rest on knowing and reasoning with similarity, an explanation of what is the nature of similarity should illuminate them

⁷⁶ Brandom, 89. Italics in original.

and contribute something to our understanding of the metaphysical grounding that they have; what *makes true* similarity claims that are analogical arguments. And given that it is desirable to have an understanding of the metaphysical grounding of ways of knowing and reasoning, undertaking the work to explore and explain the metaphysics of similarity is justifiable.

WHAT IS REQUIRED FOR ANALOGICAL REASONING?

The problem is essentially this: if some analogical arguments (arguments depending on similarity claims) are true and contentful, what must be the case? These analogical arguments range from simple similarity claims such as, “The rose is like the carnation,” to more complex forms such as, “A fish is to a school like a tree is to a forest,” “or, “The Theban war on their neighbors, the Phocians, was evil; so, too, would an Athenian War on the Thebans be evil,” or to non-verbal analogies such as that presented above.. The present work argues that in order for analogical arguments to be true, a number of presuppositions are required. These presuppositions are:

1. The existence of relations (similarity is a relation), or the reduction of relations to non-relational terms
2. An ability to individuate relations (picking out “similar” from “smaller than”)
3. Some fact that entails the similarity relation obtains (the “truthmaker”)
4. Non-triviality (the statements are contentful and not vacuous)
5. That there are well-formed similarity claims
6. An ability to be aware of or attuned to the relation in order to recognize whether it obtains or not

Any satisfactory account of similarity claims must also be able to give an account of these six conditions, or show why one of these conditions is in fact not necessary (we will see in the next chapter, many will deny the first condition; subsequent chapters will show objections to other

conditions, such as the third and the sixth). The implication is that when one invokes analogical reasoning, one owes a metaphysical and epistemological account for these six conditions.

The task at hand is therefore an ambitious one, but also tempered by restraint. The goal is to elucidate and make explicit these assumptions we must make if we are committed to at least some similarity claims being both truth and informative. The bulk of the work which follows will be devoted to exploring the metaphysics of similarity, beginning with the metaphysics of relations and then moving to the specific relation of similarity. We will discover, however, that the very notions of relationality and similarity are bound up with one another. Next, it takes up the task of connecting it to the epistemology of similarity. This is done through exploring the twin metaphysical and epistemological debates regarding similarity and analogy in the Sanskrit traditions and the epistemological and hermeneutical debates within the Islamic jurisprudential tradition. In the end, this work argues for a virtue-theoretic account for the intellectual virtue of analogical reasoning, which we might think of as similarity or relation sensitivity. It will be argued that such a capacity can be developed and cultivated by training, that analogies can lead to truth and knowledge, and therefore the wisdom seeker should develop these capacities. Unfortunately, though, many pressing questions encountered along the way must be set aside including fascinating areas of exploration such as the role of analogy in literature, aesthetics and rhetoric.

Furthermore, there is emerging a flourishing study of similarity and recognition in cognitive and neuroscience as well as computer science, and often their understanding of just what constitutes basic notions such as “recognition” and “rationality” are at odds with one another. Sadly, there is not the space here to explore these debates in any details. The present text is very self consciously meant to serve as a foundational work that will have applications beyond itself, providing a basis for future questions rather than providing all of the answers on a topic that is literally implicated everywhere.

Unpacking each of these above six assumptions means that considerable attention and effort

must be paid to ideas that are not strictly considerations of similarity *qua* similarity, but instead more general problems related to the ontology of relations. In the following chapter, we shall see two approaches that attempt to subsume the categories of relations under other ontological categories, universals or tropes. The former is the idea that properties exist independently of their instantiations, as universals which explain relations of qualitative identity and resemblance through the appeal to non-mental entities, and such universals are generally contrasted with individuals in which universals inhere or partake in some manner or another. The theory of tropes proposed the idea there are property instances that are individual but in some way similar to other property instances in such a way as they are “are *abstract* yet they are *not universal* . . . *particular* yet they are *not concrete*.”⁷⁷ It should be clear from the discussion that follows that in general the dialogues about relations and the dialogues about similarity have been somewhat disconnected, particularly in the western tradition, with most philosophers assuming, it seems, a theory of properties will provide answers to the relation of similarity without recourse to an explanation of relations, or that a theory of properties will produce, as a by-product of sorts, a workable theory of relations due, in part at least, to conflating a theory of properties with a theory of predication. If this work accomplishes nothing else, it should demonstrate that this assumption is erroneous, and that a solution to the problem of properties will not precipitate a solution to the problem of relations.

⁷⁷ Anna-Sofia Maurin, “Tropes,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Fall 2014, 2014, <http://plato.stanford.edu/archives/fall2014/entries/tropes/>.

CHAPTER TWO: THE METAPHYSICAL BASIS OF ANALOGY I: RELATIONS AS UNIVERSALS OR TROPES

*“There is no term which is so absolute or so detached that it does not involve relations and is not such that a complex analysis of it would lead to other things.”*⁷⁸

Analogical reasoning, in all its forms, posit a similarity relation that holds between two different entities. Similarity is a relation that is predicated by the two-place predicate “*x* is similar to *y*” or “*x* resembles *y*.” Many people will accept this uncritically, although there is at least one proponent of the view that any relation can be reduced down to monadic properties, and hence we can do away with relations, while others will hold that even though similarity does not reduce to monadic properties, we can do away with relations as ontologically distinct from their relata.⁷⁹ The *prima facie* notion of similarity is simply having a shared property, and that “*x* and *y* share property *F*” is a paraphrase of the similarity claim “*x* is similar to *y* in virtue of *F*.” Both invoke a relation claim, one of sharing and one of similarity. But note that they are not equivalent: we can imagine that two things can be similar, and without their similarity coming from a shared property. For example, we can imagine two things being similar because of the very fact that they lack some property without thinking that there are negative properties (for example, the property of not being spherical). A matchbox and an office-table can be similar because neither of them is spherical or made of cheese.

You have likely already recognized the *prima facie* view as that of the realist. The realist is committed to the existence of universals. MacLeod and Rubenstein have given a helpful generic definition of how universals are usually conceived:

Universals are a class of mind-independent entities, usually contrasted with individuals

⁷⁸ G. W. F. von Leibniz, P. Remnant, and J. Bennett, *Leibniz: New Essays on Human Understanding* (Cambridge University Press, 1996), 228:10.

⁷⁹ Milton Fisk, “Relatedness without Relations,” *Noûs*, 1972, 139–51.

E. Jonathan Lowe, “There Are (Probably) No Relations,” in *The Metaphysics of Relations*, ed. Anna Marmodoro and David Yates, 1 edition (New York, NY: Oxford University Press, 2016), 100–112.

Peter Simons, “External Relations, Causal Coincidence, and Contingency,” in *The Metaphysics of Relations*, ed. Anna Marmodoro and David Yates, 1 edition (New York, NY: Oxford University Press, 2016), 113–26.

(or so-called "particulars"), postulated to ground and explain relations of qualitative identity and resemblance among individuals. Individuals are said to be similar in virtue of sharing universals. An apple and a ruby are both red, for example, and their common redness results from sharing a universal. If they are both red at the same time, the universal, red, must be in two places at once. This makes universals quite different from individuals . . .⁸⁰

It is the simplicity of the realist view that makes it so attractive at first blush. There are entities, universals, which are instantiated by two particulars, and because of the existence of this same universal in two particulars, a relation holds between them: the relation of similarity. So, when one says that a firetruck is like a tomato what one must be referring to is some state of affairs which has two particulars, a universal, and some relation standing in some appropriate arrangement to ground or make true the proposition, "A firetruck is like a tomato with respect to its color." Analogies, then, commit us to at least three types of entities under this view: particulars, universals, and relations. In so far as there can be a disagreement about whether a color is a universal or a particular trope/quality, a similarity relation like the above might be more accurately be said to consist of particulars, properties, and a relation.

As early analytic philosophers such as Bertrand Russell were always eager to show us, what at first blush seems simple often hides dizzying complexity just beneath the surface. And there are many familiar complexities which we could take up, such as the problems of exemplification or the other classic objections to the realist's view. As we take up some of these objections and a more critical examination of the realist's commitment to universals as they relate to similarity claims in this and the following chapters, we will see that many of the problems for the realist are accounting for the role of relations. Likewise, in our present considerations of analogy, the most pressing seems to be the

⁸⁰ Mary C. MacLeod and Eric M. Rubenstein, "Universals," *Internet Encyclopedia of Philosophy*, accessed February 21, 2016, <http://www.iep.utm.edu/universa/>.

question, “What is a relation?” In order to understand the metaphysics of similarity *qua* relation, one must first understand the metaphysics of relations; this is still a murky area. As Peter Simons has remarked, “The metaphysics of relations (unlike their logic) is still in its infancy.”⁸¹ It is only once we have more clarity into what are relations can we return to the question of what is similarity, if it is indeed is a relation, and what metaphysical system or systems can best account for it. This approach represents an inversion of the traditional approach, which has put forward a theory of properties, and has then tried to accommodate a theory of relations within in.

This chapter constitutes a primarily negative project: it argues that taking relations as universals or tropes results in too many metaphysical difficulties and aporias. Realists and trope theorists about relations consistently fall back on primitives or brute facts not because those facts seem to lie at the end of analysis, but because theorists fail to see how to resolve the problems resulting from treating relations as universals or tropes. Part of this problem emerges from the need for relations to relate properties or property instances to concrete particulars, and the difficulties of doing so when relations are species of the same type as properties or property instances: that is, if relations are meant to relate properties to particulars, and relations are themselves treated as properties, it is unclear how relations can do this work which properties themselves could not (if relations are just properties). In trying to achieve ontological parsimony, they sacrifice ideological parsimony: in concerning themselves with Occam's Razor they cut themselves on Leibniz's. The subsequent two chapters take up the challenge of a theory of relations, attempting to avoid some of the pitfalls of taking relations as of the same type as properties and providing a general theory of relations capable of providing a foundation for the explication of one relation in particular, the similarity relation.

⁸¹ Simons, “Relations and Truthmaking,” 199.

ARE RELATIONS UNIVERSALS?

There are many who would disagree with this characterization of the realist position and its commitment to three entities as shown above. Michael Loux has remarked somewhat uncritically that relations are a type of universal. This seems to reflect a widely accepted view that can be traced all the way back to Plato's *Phaedo*.⁸² Relations are understood under this view as dyadic or polyadic properties, captured by a two- or n-place predicate. Hence we should think “taller-than-ness” is a universal just as we think “tallness” is a universal.⁸³ Bertrand Russell saw accepting similarity (or resemblance) as a universal as a necessary move to remove what he saw as a vicious regress, but also as something readily apparent (to him) given relations' repeatability. In developing his critique of resemblance nominalism, he wrote [*italics added*]:

If we wish to avoid the universals whiteness and triangularity, we shall choose some particular patch of white or some particular triangle, and say that anything is white or a triangle if it has the right sort of resemblance to our chosen particular. *But then the resemblance required will have to be a universal. Since there are many white things, the resemblance must hold between many pairs of particular white things; and this is the characteristic of a universal. It will be useless to say that there is a different resemblance for each pair, for then we shall have to say that these resemblances resemble each other, and thus at last we shall be forced to admit resemblance as a universal. The relation of resemblance, therefore, must be a true universal.* And having being forced to admit this universal, we find that it is no longer worth while to invent difficult and implausible theories to avoid the admission of such universals as

⁸² M. J. Loux, *Metaphysics: A Contemporary Introduction* (Routledge, 2006), 20–21. Plato, “Phaedo,” in *Complete Works of Plato*, ed. John M. Cooper and D. S. Hutchinson (Indianapolis: Hackett Publishing, 1997), 74a-74b.

⁸³ Here we should listen to the sage advice of David Lewis among others who reminds us that we should not think that a theory of properties will provide us with a theory of predication as well; predication and properties are not the same philosophical problem. While it can be difficult to sort these two problems out, and while insights in one problem often carry over into the other, we have to be aware a solution to one may not entail a solution to the other. See David Lewis, “New Work for a Theory of Universals,” *Australasian Journal of Philosophy* 61, no. 4 (1983): 352.

whiteness and triangularity.⁸⁴

Having already accepted one relation as a universal, a spirit of ontological economy and the desire to avoid a suspected regress then motivates us to explain all relations as universals. They are like any other universal except that they require more than one particular in order to be exemplified. Hence in the explanation of the analogy, “A firetruck is like a tomato” we need to posit the existence of just two types of entities: particulars and universals. This explanation, though, is nearly startling because that very difference—the difference between a property, which can be had by a single concrete particular, and a relation which can only exist “between” two more more particulars—is so enormous. If you do not find this position attractive, then you are in good company.

Śrī Vallabha of Mithilā, an early 12th century Vaiśeṣika philosopher, introduced a definition of similarity that would be adopted by many following philosophers, perhaps most notably the late 12th century Gaṅgeśa Upādhyāya, generally credited with having founded the Navya-Nyāya or “New Logic” school. In Vallabha's *Nyāyalīlāvātī*, the only one of his works known to survive, he provides an analysis of similarity and is careful to distinguish it from universals. A universal (like whiteness) inheres in an substrate (substance, or *dravya*), and we can predicate of it that “It is white.” But this is not so in the case of similarity.⁸⁵ In predicating similarity, we must predicate what it is similar to, it's counter-correlate.⁸⁶ But similarity is the result of an universal inhering in two different objects/substrates.⁸⁷ If it were not, similarity could inhere in a single object and we could then predicate of an object, “That is similar” without needing to say what it is similar to. Similarity would then be a property itself, not the relation of two objects having some common property. Alternatively,

⁸⁴ Bertrand Russell, “The World of Universals,” in *Properties*, ed. D. H. Mellor and A. Oliver (Oxford: Oxford University Press, 1997), 48.

⁸⁵ One could, just to make the argument more transparent, use the example of a universal that in fact inheres in only one particular although it is in principle repeatable—such as the universal “passenger pigeon” that inhered/was exemplified only by Martha, the last of that species in the Cincinnati Zoo until her death in 1914. Errol Fuller, *The Passenger Pigeon* (Princeton, New Jersey: Princeton University Press, 2014), 109.

⁸⁶ Vallabha, *Nyāya Līlāvātī of Śrī Vallabhacharya With the Commentaries of Vardhamanopadhyaya, Sankara Misra and Bhagiratha Thakkura*, ed. Dhundhiraja Sastri, vol. 1 (Varanasi: Chowkhamba Sanskrit Series Office, 1934), 75–78, <https://archive.org/stream/Nyaya-Lilavati.of.Sri.Vallabhacharya#page/n25/mode/2up>.

⁸⁷ Vallabha, 1:76.

in perceiving a quality (a universal), it is not required that I should have to perceive something else, some “counter-correlate,” in order to observe the universal.⁸⁸ Rather, similarity just is the presence of a universal in more than one substrate.⁸⁹ Gaṅgeśa Upādhyāya gives a remarkably similar argument himself in his debate with the Prābhākara Mīmāṃsaka who held similarity, while not a universal, was a distinct ontological category on par with universals.⁹⁰ Hence it would be a confusion, these philosophers hold, to think that similarity is a universal. To do so risks running into the worst of the problems of realism, so innocently suggested in *Parmenides* 130b when it is asked, “And do you believe that Similarity itself is something separately from the Similarity which we possess?”⁹¹ The critique can be generalized to relations: universals do not require a counter-correlate, but at least some relations do.

Clearly, part of this debate stems from a difference in understanding what is the essential nature of a universal and of a relation. For Russell, repeatability is the mark of a universal. For Vallabha and Gaṅgeśa, it is the ability to inhere in more than one substance-particular at the same time. For Russell, this means that whatever is repeatable is a universal, including the similarity relation and all other relations. Indeed, it was this misunderstanding, claimed Russell, that led Berkeley and Hume into so much error in that “they only thought of *qualities*, and altogether ignored *relations* as universals.”⁹² For Gaṅgeśa, since the similarity relation cannot inhere in a single substance, it is something very different from a universal. That we find the contemporary “analytic” realism about universals, such as Russell and many others, disagreeing about the nature of universals with the Vaiśeṣika or Navya-Nyāya should be unsurprising. As Will Rasmussen has eloquently stated in his discussions of the differences between Plato's forms (*eidos*) and the Nyāya's universals (*sāmānya*), “We realize how [they] . . . are not so much

⁸⁸ Vallabha, 1:77.

⁸⁹ Vallabha, 1:76.

⁹⁰ See Stephen Phillips translation of the Gaṅgeśopādhyāya-viracitas tattva-cintā-manau upamāna-khaṇḍaḥ (pages 105-133) in Stephen H. Phillips, *Epistemology in Classical India: The Knowledge Sources of the Nyaya School* (New York: Routledge, 2013). These debates within the Indian tradition will be explored more fully in Chapter 5.

⁹¹ Cooper and Hutchinson, *Complete Works of Plato*, bk. *Parmenides*, 130b.

⁹² Russell, “The World of Universals,” 58.

talking somewhat differently about the same thing, but talking somewhat similarly about different things.”⁹³ Still, we should not let this difference stop us from the insight that Russell's “relations as universals” need not be the *de facto* position of the realist. This disagreement about the nature of universals illustrates, too, a second important point of disagreement, and it is critical to see that the concern here with Russell and with Vallabha is not a concern merely with similarity *sui generis* but with relations in general.

Whether or not we accept the realism of Vallabha and Gaṅgeśa, we should agree with them that in fact relations are not universals. First, we should not find it problematic that relations, or the resemblance relation in particular, may resemble each other. Second, we would find a problem in determining the truth of relational predicates if relations were universals. A third objection which can also be overcome is that known as Russell's Regress of Resemblance, but it will be addressed in a following chapter after we are in a better position to see the larger stakes given the regress of resemblance is aimed not just at demonstrating that relations are universals, but instead aimed at countering nominalist explanations, particularly resemblance nominalism.

If resemblance relations, or any other relation for that matter, are particular entities (not *particulars* in the language of the realist but simply individual, non-repeatable ontological entities), then it should be unsurprising that they are able to resemble each other. If we say that the state of affairs of this manuscript being in front of you includes a particular relation of “being in front of,” and that this relation has the same particularity of the manuscript or other entities which we can individuate into particulars, then we should expect that, like those other particular individuals, relations may resemble each other.

If we say that the fish is to a school as a tree is to a forest, it would be appropriate to say the relation holding between the fish and school and between the tree and forest are indeed similar in that

⁹³ Will Rasmussen, “The Realism of Universals in Plato and Nyāya,” *Journal of Indian Philosophy* 37, no. 3 (2009): 232.

they are both relations of composition: they both express a relation between the two relata by which one relatum is composed by the other. Without the ability to discern this similarity in the relations, one could not make sense of the analogy. Likewise, to say that the relationship of similarity in respect to color between the tomato and firetruck and the similarity in respect to color of the ocean and the sky are similar in that they are both relations of similarity in respect to color does not seem illogical or extravagant.

If that is the case, and relations may enter into resemblance relations with each other, then it seems perfectly sensible to think that individual similarity relations can be particular relations, and that the relation of the manuscript being before you is similar to the relation of the tea cup being before you. As such, relations can be grouped and conceptualized based on the similarities that hold between the relations themselves, however we decide to describe those similarities. It would seem that this ability to sort relations (as well as properties) into kinds or classes depends on relations (as well as properties) having properties themselves. This debate is of course the debate about the intrinsic properties of properties.⁹⁴ We will have more to say about this debate when we turn our attention in the following chapters to the similarity relation and the idea of set formation particularly in Chapter Four.

Furthermore, the relation itself cannot instantiate itself, for we should remember Vallabha, and recall that relations require at least two entities—they do not exist independently, and so a single relation cannot be an instantiation of itself except in rare cases where a relation is self-reflexive (relates itself back to itself in the same way that it relates other things, such as the identity relation which is, of

⁹⁴ For some of the dimensions of this debate, see David Lewis, “Counterparts of Persons and Their Bodies,” *The Journal of Philosophy* 68, no. 7 (1971): 203–11, <https://doi.org/10.2307/2024902>.; Andy Egan, “Second-Order Predication and the Metaphysics of Properties,” *Australasian Journal of Philosophy* 82, no. 1 (March 1, 2004): 48–66, <https://doi.org/10.1080/713659803>.; and Derek Nelson Ball, “Property Identities and Modal Arguments,” *Philosophers’ Imprint*, November 2011, <http://research-repository.st-andrews.ac.uk/handle/10023/4044>.

Intrinsic properties of properties seem vital to perform just this categorization, and might be critical to determining, for example, when any two tropes are in fact members of the same class (hence, the same property). As we will see in the following chapter, some have appealed to such intrinsic properties of properties to ground a primitive resemblance relation. See both Lewis, “New Work for a Theory of Universals.” and its follow-up, David Lewis, “Against Structural Universals,” *Australasian Journal of Philosophy* 64, no. 1 (March 1, 1986): 25–46, <https://doi.org/10.1080/00048408612342211>.

course, identical to itself). Most relations are precluded from instantiating themselves or serving as one of their own relata by their very nature, demonstrated in their expression as a two- or n -place predicates. This is certainly the case with similarity, as will be painstakingly demonstrated in the following chapter. By comparing two relations that we found similar, there would have to be some property of the relations that justified claiming they were similar. If this was possible (and *prima facie*, it is), then similarity is a relation that may hold between relations.

Yet, just as everything stands in the identity relation to itself, so too does everything stand in a similarity relation to itself given everything is similar to itself; similarity is a reflexive relation. Yet it is only in its similarity to some other similar relation it can be individuated, but yet that could be in the relation the relation has to itself.⁹⁵ It is not self-exemplifying, but rather contains within itself the tools for individuation (not so with any other relation except perhaps identity and equality, to be discussed in Chapter Four). Yet, given most relations cannot self-exemplify (for example, “heavier than,” “equidistant from,” “beloved by,”), they hence avoid the familiar “third-man problems.” There is no danger of a vicious regress merely on the postulate that relations may hold between relations.

Concluding that relations may be similar to each other does not demonstrate Russell is incorrect in concluding relations are universals. Although it may undercut his objection, one could still maintain the following line of argumentation: the teacup and the manuscript are both in front of you because the *same* relationship holds between you and the manuscript and you and the teacup, not merely the same type of relation (the type being conceptualized on the basis on the similarity holding between the two particular relations). Hence, it would be better to consider them as universals rather than some second kind of ontological entity, relations. The real difficulty enters for an account that considers relations as universals when we consider an objection from the standpoint of truthmaking. The difficulties associated with relations and “making true” are not confined to realism about relations, however, but

⁹⁵ Chapters Three and Four develop a detailed argument to support this theory of individuating relations. The reader is kindly asked to accept this as a promissory note until that time.

are also associated with the view that relations are tropes.

THE TRUTHMAKER THESIS

The truthmaker thesis, or TT in what follows, is the claim that whatever exists makes true whatever propositions are in fact true. It supposedly matches a common hunch that, in the words of David Lewis,

. . . the most promising . . . among the grand theories of truth are the theories that somehow require what's true to depend on the way the world of existing things is, or on the way some part of that world is.⁹⁶

TT exists in various formulations across the philosophical canon, and has been endorsed in one form or another by a number of philosophers ranging from Aristotle (“To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true”⁹⁷), Ludwig Wittgenstein (“ . . . the totality of facts determines both what is the case, and also all that is not the case” and, “If an elementary proposition is true, the atomic fact exists; if it is false the atomic fact does not exist”⁹⁸), Bertrand Russell (“When I speak of a fact . . . I mean the kind of thing that makes a proposition true or false”⁹⁹), J. L. Austin (“When a statement is true, there is, of course, a state of affairs which makes it true”¹⁰⁰) to Kit Fine (“one requires not merely that each true proposition be made true by a fact in the sense that necessarily if the fact exists the proposition is true, but also that the truth of the particular proposition thereby be explained”¹⁰¹) and perhaps most devotedly by the late David

⁹⁶ David Lewis, “Truthmaking and Difference-Making,” *Nous* 35, no. 4 (December 2001): 603.

⁹⁷ Aristotle, *Metaphysics* 1011b25

⁹⁸ Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. K. Ogden (New York, NY: Cosimo Classics, 2007), secs. 1.12; 4.25.

⁹⁹ Bertrand Russell, “The Philosophy of Logical Atomism,” in *The Collected Papers of Bertrand Russell. Volume 8: The Philosophy of Logical Atomism and Other Essays 1914-19*, ed. John G. Slater, 1st edition (London ; Boston: George Allen & Unwin, 1986), 163.

¹⁰⁰ J. L. Austin, “Truth,” in *Philosophical Papers*, ed. J. O. Urmson and G. J. Warnock, 3rd ed., Clarendon Paperbacks (Oxford: Oxford University Press, 1979), n.p., <http://www.oxfordscholarship.com/view/10.1093/019283021X.001.0001/acprof-9780192830210>.

¹⁰¹ Kit Fine, “First-Order Modal Theories III: Facts,” *Synthese* 53, no. 1 (1982): 69.

Armstrong.¹⁰²

One simple formulation of TT is: that for any proposition P, T is the truthmaker of proposition P iff "T exists" entails "P is true." This formulation may seem little more than a correspondence theory of truth, but in fact TT is not just the correspondence theory in new clothes, as TT is not a theory of *being true*, but instead the thesis that every truth claim has an ontological commitment. In that the correspondence theory of truth is, at minimum, supposed to be an account of being true (rather than perhaps making true) there is a difference, although some of the familiar problems of correspondence theory will also have versions that impinge upon TT.¹⁰³

TT is, however, unworkable in what might be considered the "naive version" given above. For example, we can easily demonstrate that without reforms, TT fails to be true if it insists all true statements have truthmakers. First of all, it does not seem at all clear just what exists that makes TT itself true! As if this was not damaging enough, we can easily demonstrate that this naive version of TT fails to offer a universal account of truth making. For example,

Premise a1: For any proposition P, T is the truthmaker of proposition P iff "T exists" entails "P is true."

Premise a2: All true propositions have truthmakers.

Premise a3: Jarrod's older brother does not exist.

Premise a4: Nothing exists to make it true, "Jarrod's older brother does not exist" but rather the lack of something's existence makes it true that "Jarrod's older brother does not exist."

Conclusion 1a: Therefore, Premise a1 or Premise a2 is false.

Simply put, as a thesis TT fails without reforms, and the truthmaker for TT and negative existential claims are not the only problematic areas. That being said, it is correct that many true propositions

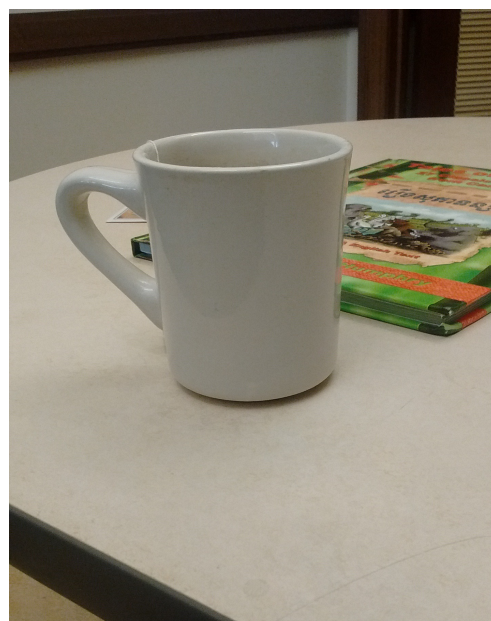
¹⁰² David M. Armstrong, *Truth and Truthmakers* (Cambridge University Press, 2004).

¹⁰³ Trenton Merricks, *Truth and Ontology* (New York: Clarendon Press, 2007), 15.

depend on “what is” to make them true. For example, if I say “There is a black cat in that room” the proposition “There is a black cat in that room” is true iff there is a black cat in that room. If there fails to be a black cat in the room, then the proposition is false.

RELATIONS AND STATES OF AFFAIRS

Given this understanding of truthmaking, understanding relations as universals is problematic. Consider the following illustration: “The cup is on top of the desk.” Wittgenstein observed that “Every statement about complexes can be analyzed into a statement about their constituent parts, and into those propositions which completely describe the complexes.”¹⁰⁴ If relations are universals, then they exist independently of their instantiations. This means that the cup, the desk, and the



universal of the relation “on top of” all exist and constitute the proposition. Given this, the truth of “The cup is on top of the desk” is made true by the existence of the cup, the desk, and the relation as a universal. But note that given the existence of these elements, that “the desk is on top of the cup” seems to be made true as well. We have a complex--the cup, the desk, and the universal of the relation “on top of”--that seem to make true both propositions, “The cup is on top of the desk,” and, “The desk is on top of the cup.”

Clearly, however, it is not the case that the desk is on top of the cup. The mere existence of “on top of” does not indicate what is on top of what. Yet, the universal “on top of” obtains regardless of whether the table is on top of the cup or the cup is on top of the table. The directionality of certain

¹⁰⁴ Wittgenstein, *Tractatus Logico-Philosophicus*, sec. 2.0201.

relations, that is asymmetric relations, runs against the grain of relations existing independently of their instantiations. Given the existence of the relation as a universal, apart from its instantiations, the application of the TT thesis leads to weird results. Consider the following argument:

Premise b1: Relations are universals.

Premise b2: Universals exist independently of their instances.

Premise b3: "In front of" is a relation.

Conclusion b1: Therefore, "in front of" exists independently of its instances.

Premise b4: You exist.

Premise b5: The manuscript exists.

Premise b6: TT

Conclusion b2: Therefore, the proposition "You are in front of the manuscript" is true.

This argument seems strange enough: that just given the existence of these three entities, two particulars and a universal, we can get the truth of the proposition in Conclusion b2. If we add another premise, we can make the weirdness of TT along with the claim that relations are universals more apparent.

Premise 7b: Salmon Rushdie exists.

Conclusion 3b: Therefore, the proposition "You are in front of Salmon Rushdie" is true.

We can try to resolve this by rejecting a premise, and the two prime candidates seem to be the first conclusion, Conclusion 1b, which gives us the independent existence of "in front of" apart from any instance of "in front of" and the sixth premise, that is TT. If we reject the latter, however, we are burdened with offering some alternative account of truthmaking for the proposition. One can approach the argument without rejecting TT but instead argue that TT has just been *incorrectly applied* here. The individual who wishes to rescue Conclusion 1b will do something just like this by arguing that although TT is true (or at least workable in this instance), it is not the independent existence of the elements of a

proposition that make the proposition true. If that were the case, then “I am blue and Salmon Rushdie is a fish” would be equally as plausible since, assuming realism, blueness and fishness also exist, as do myself and Salmon Rushdie.

The point here is pretty simple: the two particulars and the universal-property-version of the relation together are not sufficient condition for the truth of the relational proposition. The set that contains these four elements, myself, the British Indian novelist, and the two universals, does not ensure that the universals inhere in either myself or the novelist, something else needs to determine which universal is in which, and this “being in” seems to be irreducibly a relation, not a relational property or universal. Atomic elements (particular and abstract), which can only be named, are not truthmakers but rather it is facts or states of affairs—on configurations of atomic elements—that are truthmakers. That is to say, echoing Wittgenstein, the world is the totality of facts, not of things.¹⁰⁵ As Armstrong explains,

Why do we need to recognize states of affairs? Why not recognize simply particulars, universals (divided into properties and relations), and, perhaps, instantiation? The answer appears by considering the following point. If a is F, then it is entailed that a exists and that the universal F exists. However, a could exist, and F could exist, and yet it fail to be the case that a is F (F is instantiated, but instantiated elsewhere only). a 's being F involves something more than a and F. It is no good simply adding the fundamental tie or nexus of instantiation to the sum of a and F. The existence of a , of instantiation, and of F does not amount to a 's being F. The something more must be a 's being F – and this is a state of affairs.¹⁰⁶

Lists of elements, of particulars and universals, just do not have the type of unity that is required to be a legitimate state of affairs or play the truthmaker role. And, with the revision that truthmakers are states

¹⁰⁵ Wittgenstein, sec. 1.1.

¹⁰⁶ David M. Armstrong, *Universals: An Opinionated Introduction*, Focus Series (Boulder: Westview Press, 1989), 89.

of affairs, such weird results as above are seemingly ruled out. In fact, some have presented TT as a theory that should have a sort of intuitive appeal to realists. Armstrong states elsewhere, for example,

My hope is that philosophers of realist inclinations will be immediately attracted to the idea that a truth, any truth, should depend for its truth [on] something ‘outside’ it, in virtue of which it is true.¹⁰⁷

Part of the reason for that appeal is because of the radically different natures of particulars and universals. The participation of one in the other requires some sort of “metaphysical cement” to bring the two together to borrow a phrase from Dobb.¹⁰⁸

While more true to the spirit of TT and other truthmaker theories, invoking facts or states of affairs does not resolve the question of the role of relations as universals in truthmaking, but rather puts us back in the position we started. This problem stems from invoking relations within facts' or states of affairs' definitions or explanations: states of affairs are variously described as being composed of elements (such as particulars and properties) or being arrangements of elements. States of affairs are variously described by Wittgenstein as “combinations” and “configurations,”¹⁰⁹ by David Armstrong as “structures” that are “composed” of non-relational parts and relations¹¹⁰ and elsewhere as constituted by “properties and relations” which “are, of course, universals”,¹¹¹ and by Sally Haslinger as a “relation between an object and a property.”¹¹²

Combinations, configurations, compositions, and relations are all relational. Hence an explanation of what a state of affairs as truthmakers for propositions is, and what role relations can play within them, demands that we understand how states of affairs are being “formed” by relations. If we treat the relation that “composes,” “structures,” “configures” or “relates” to form states of affairs as

¹⁰⁷ Armstrong, *Truth and Truthmakers*, 7.

¹⁰⁸ Dodd, “Farewell to States of Affairs,” 50.

¹⁰⁹ Wittgenstein, *Tractatus Logico-Philosophicus*, secs. 2.0272; 2.01.

¹¹⁰ David M. Armstrong, “In Defence of Structural Universals,” *Australasian Journal of Philosophy* 64, no. 1 (March 1, 1986): 85, <https://doi.org/10.1080/00048408612342261>.

¹¹¹ David M. Armstrong, *A World of States of Affairs* (Cambridge ; New York: Cambridge University Press, 1997), 20.

¹¹² Sally Haslinger, “Persistence Through Time,” in *The Oxford Handbook of Metaphysics*, ed. Michael Loux and Dean W Zimmerman, 1 edition (Oxford University Press, 2005), 343.

universals, then the relation is always the same. Hence, all states of affairs are composed of the same relation. This theory then leaves only the constituents of the states of affairs, the elements, as differentiating one state of affairs from one another. Surely this theory is a winner.

But this leaves us with the aporia that (A) given the same set of elements in any given state of affairs, (B) given relations are universals, and (C) given TT, then the truth of the proposition about that state of affairs will remain the same so long as the elements remain the same. But as in the case of the cup on top of the table, this conclusion is simply false: given the cup, the universal “on top of” and the table, it is not just the three elements that compose the states of affairs that gives us the truth of the proposition, “The cup is on the table” as the same elements give us the false proposition, “The table is on the cup.” We can lay this argument bare as follows:

Premise c1: A state of affairs is a configuration of atomic elements.

Premise c2: A configuration is either a relation, or it is not a relation.

Premise c3: If a configuration is a relation, either it is a universal or it is not.

Premise c4: If relations are a universals, then they are the same in all of their instances.

Premise c5: Relations are universals.

Premise c6: If a configuration is a relation, then it is the same (identical) in all of its instances.

Premise c7: States of affairs are the truthmakers of propositions.

Premise c8: Propositions have different truth values.

Conclusion c1: If all states of affairs have the same configuration, then differences in truth values are not due to differences in configuration of states of affairs.

Conclusion c2: Therefore, differences in the truth values of propositions must come from differences in the atomic elements of states of affairs, since atomic elements in a configuration are all that states of affairs are.

Conclusion c3: Therefore, states of affairs with identical atomic elements are truthmakers for propositions with identical truth values.

We are back to where we started from, only now we have compounded the problem. Invoking states of affairs as truthmakers rather than the elements seemed a worthwhile move. But if relations are considered as universals, not only does the weirdness persist in that, given relations as universals and the relata, we cannot account for truth differences given asymmetric relations, but we now have an additional problem given that we have a relation as a universal, which we are invoking to explain the unity of states of affairs, and it turns out as a universal, it is the same relation everywhere by which states of affairs are constituted. Now any simple complex presented by a property predication, such as “Anjing is brown,” will have three elements—the particular and two universals.¹¹³

This relation as a universal was invoked just to avoid the problem of atomic elements as truthmakers since we have clear illustrations that, if allowed, atomic elements as truthmakers can result in false propositions such as the case of the desk being on top of the cup even though all of the elements of the proposition exist. We can illustrate this principle easily. Imagine two possible worlds, in both of which the dog named Anjing exists and the property brown exists. In only one of these possible worlds is Anjing actually brown, being white in the other world. Unless we have some way of discussing the unity of the property universal with the particular, we are unable to explain why in one world the proposition “Anjing is brown” is true and is false in the other world. So, consider two possible worlds, X and Y, in which both *a* and the property universal B (B-ness) exist.

X: a & B-ness exist & “a and B exist” is true & “a is B” is false

Y: a & B-ness exist & “a and B exist” is true & “a is B” is true

In the simple case of Anjing being brown, the existence of Anjing the particular and brownness the universal by themselves seem incapable of making true the proposition, “Anjing is brown.” We are

¹¹³ Anjing is a dog, taken from the Malayu word “*anjing*” meaning dog.

at a loss to explain the truth differences across these worlds just given what exists within them. The difficulties for TT and states of affairs sadly do not end there. For if we introduce a unity relation as a universal to relate the particular and universal in the appropriate way, we have added an additional ontological element. For now the list of elements in our cup example include not only the cup, the desk, and the relation-universal “on top of” but a fourth element, what we might call the “unifier relation universal.”

Three immediate difficulties with this account are apparent: first, how do we determine when this relation actually obtains and states of affairs are formed? A second and closely related problem: given the account of relations as universals, this relation must everywhere be the same. Therefore, how do we individuate this relation in its obtainments into individual states of affairs? Third, given that as a universal, the unifier relation must also exist in both possible worlds containing Anjing, its existence alone does not allow for us to discriminate between the true proposition that Anjing is brown in the world in which it is actually brown. The specific problem still remains: if relations are treated as universals, both possible worlds, X and Z , will contain the particular Anjing, the property universal brown, as well as the relation on inherence, another universal. In one of those possible worlds, the relation of inherence actually links the universal property to Anjing, and in another it does not. If we want to preserve TT, something else besides this inherence relation must be appealed to in order to determine correctly in which worlds Anjing is brown and in which worlds Anjing is not brown.

Finally, the unifier relation seems to require a second unifier relation to unite it to the elements in the states of affairs. How do we prevent a state of affairs constituting a second state of affairs if it requires the recognition of a relational universal obtaining? At least under some descriptions of a state of affairs they are just the configuration of a particular and a property, or a structural unity of non-relational and relational elements, and the possibility for states of affairs themselves to be constituents in such configurations seems real here. That is, if a relation universal is needed to form states of

affairs, have not states of affairs become elements in higher order states of affairs that are equally necessary to form lower order states of affairs. So it seems the the following regress is generated:

Premise 1d: The cup, the desk, and “on top of” are unified by the unifier relation.

Premise 2d: The proposition “The cup is on top of the desk” is made true by the cup, the desk, the “on top of relation,” and the unifier relation.

Premise 3d: Propositions are made true by their particulars, universals (including property and relation universals), and the unifier relation.

Conclusion 1d: Therefore, ““The cup is on top of the desk” is made true by the cup, the desk, the “on top of relation,” and the unifier relation”” is made true by the cup, the desk, the “on top of relation,” a unifier relation, and the unifier relation.

That is, that something is a state of affairs requires a second state of affairs to be made true—the state of affairs that relates the relation of unity back to the first state of affairs. And there seems no reason for this not to continue *ad infinitum*. This is not the virtuous regress of truth—that if it is true that the grass is green, then it is true that it is true that the grass is green and so on—because for each step in this regress a new *ontological entity* is introduced, not merely a new metalanguage: a universal is introduced, a unifier relation that is being posited as having being. Hence, we have an instance of the type regress that is always lurking at the shadows of any work on relations—the Bradley Regress.¹¹⁴

So what is the way forward? Several options are open to us. One option is to deny Premise 1c, that “A state of affairs is a configuration of atomic elements.” Another option is to deny Premise 5c, “Relations are universals.” A final option is to deny states of affairs all together. There are those who have suggested this first option, and that in fact states of affairs are brute facts.¹¹⁵ This seems to be hardly an explanation at all; as Ludwig Faulstich has said, “Brute facts are facts that have no explanation. If we come to know that a fact is brute, we obviously don’t get an explanation of that

¹¹⁴ Bradley-type regresses will be explored more fully in the next two chapters.

¹¹⁵ For example, see David M. Armstrong, “Against ‘Ostrich’ Nominalism: A Reply to Michael Devitt,” in *Properties*, ed. D. H. Mellor and A. Oliver, 1 edition (Oxford ; New York: Oxford University Press, 1997), 101–11.

fact.”¹¹⁶ However, if we are able to determine that something is a brute fact, then something will be gained, and so the suggestion and its consequences are worth exploring given that they also have something to say about the nature of relations. Denying the second premise, that relations are universals, can solve the “internal problem” of asymmetric relations, and also has something to say in the way states of affairs are conceived. Armstrong remarked that,

It seems to me that once one accepts the objective reality of properties and relations ... then it is inevitable that one accepts states of affairs of some sort. If you accept that these properties [and relations¹¹⁷] ... are universals as I do, ... then [you will accept that] the instantiations of universals ... are states of affairs.¹¹⁸

If one does not accept properties and relations as universals, then perhaps one is not in the position of having to accept states of affairs. The final option, denying states of affairs, is also all together plausible. It comes with its own demands: first, TT must be entirely discarded, as TT depends upon there existing, above and beyond particulars and universals, states of affairs. Another theory offering many of the advantages (as well as some of the disadvantages) of TT lies in wait: Truth Supervenes on Being. The first two of these options, however, suggest that relations are *not* universals, while the third is agnostic.

STATES OF AFFAIRS AS BRUTE FACTS

Fuhrbach has helpfully defined a brute fact as “A fact is brute when an explanation for it does not exist.”¹¹⁹ These facts for which explanations do not exist can be of various kinds, but the general idea is that a fact is brute if it is incapable of analysis where analysis is the decomposition of concepts

¹¹⁶ Ludwig Fahrback, “Understanding Brute Facts,” *Synthese* 145, no. 3 (2005): 1.

¹¹⁷ Armstrong is unequivocally devoted to the thesis that relations are universals. See Armstrong, *A World of States of Affairs*, 20.

¹¹⁸ David M. Armstrong, “Questions about States of Affairs,” in *States of Affairs*, ed. Reicher Maria Elisabeth (Berlin, Boston: De Gruyter, 2013), 39.

¹¹⁹ Fahrback, “Understanding Brute Facts,” 1.

or entities into more fundamental, ontologically prior concepts or entities, and/or the search for necessary and sufficient reasons for any given fact. For states of affairs to be brute facts, this would mean that they cannot be analyzed or explained in terms of constituent parts: particulars, relations, and properties, and that no necessary or sufficient reasons can be given for them. Anna-Sofia Maurin has taken up the suggestion made by Armstrong that in fact particulars, relations and properties are somehow parasitic on states of affairs and that states of affairs are ontologically prior to particulars or universals.¹²⁰ Under the “radical interpretation” of Armstrong which Maurin makes, this entails that the constituents of states of affairs “do not exist.” She writes,

After all, all there is are states of affairs. ‘*a*’ and ‘F-ness’ may still be said to have referential force, but their referent will be the states of affairs, for that is all there is.

States of affairs are brute; they are our rock-bottom.¹²¹

So on one account, taking states of affairs as brute facts results in the denial of the fundamental nature of both particulars and universals (among which we may include relations). To be a particular or universal is to be within a state of affairs. That Anjing and brownness can be members of states of affairs means we can speak of them, and that Anjing and brownness are within the same state of affairs means we can speak of Anjing being brown. It would seem that particulars and universals are analyzable in terms of states of affairs, and not vice versa. Yet that is not the whole story.

The perhaps unexpected result of such a mode of analysis is nominalism. There are two arguments we can put forward to defend the claim that taking states of affairs as brute facts lands us in the nominalist camp.

*Premise e1: If you deny universals and tropes, you are a nominalist.*¹²²

¹²⁰ Armstrong, “Against ‘Ostrich’ Nominalism: A Reply to Michael Devitt,” 110.

Anna-Sofia Maurin, “States of Affairs and the Relation Regress,” in *The Problem of Universals in Contemporary Philosophy*, ed. Gabriele Galluzzo and Michael J. Loux (Cambridge: Cambridge University Press, 2015), 195–214.

¹²¹ Maurin, “States of Affairs and the Relation Regress,” 200.

¹²² Since all the constituents of states of affairs are fundamentally unreal, if they are tropes rather than universals they are also denied. Whether tropes offer a better option for truthmakers than universals has been considered and will be addressed in what follows. See also Julian Dodd, “Farewell to States of Affairs,” *Australasian Journal of Philosophy* 77, no. 2 (June 1, 1999): 146–60, <https://doi.org/10.1080/00048409912348901>.; Friederike Moltmann, “Events,

Premise e2: Properties are universals or tropes.

Premise e3. By denying the existence of properties, you deny the existence of both universals and tropes.

Premise e4: If you claim states of affairs are brute facts, you deny the existence of properties.

Premise e5: You claim states of affairs are brute facts

Conclusion e1: Therefore, you are a nominalist.

Premise e6: Nominalist are committed to the existence of particulars and only to particulars.¹²³

Premise e7: If you claim states of affairs are brute facts, then states of affairs are particulars.

Premise e8: The world is states of affairs and only states of affairs.

Conclusion e2: Therefore, you are a nominalist.

As Maurin puts it,

For if what exists are ontologically structureless “blobby” states of affairs, and if states of affairs are (as Armstrong would take them to be) concrete particulars, then, on this suggestion, the world is a world of structureless concrete particulars.¹²⁴

We reach the first conclusion simply because, in claiming states of affairs are brute facts, you deny the existence of property universals, relation universals, or tropes—anything thought to constitute a state of affairs since the state of affairs is itself ontologically simple. States of affairs cannot themselves be assigned properties (which may be problematic if we want to speak of modal properties, but we can lay

Tropes, and Truthmaking,” *Philosophical Studies* 134, no. 3 (June 2007): 363–403.;” and Anna-Sofia Maurin, “Trope Theory and the Bradley Regress,” *Synthese* 175, no. 3 (2010): 311–26.

¹²³ This is an exceptionally strong presentation of nominalism, and obscures the differences between different nominalist positions. But if one is committed to the premise that particulars exhaust existence, then one is certainly a nominalist. Peter van Inwagen has, for example, defined nominalism as just the position that “everything that exists is an individual.” Peter Van Inwagen, “Against Ontological Structure,” in *The Problem of Universals in Contemporary Philosophy*, ed. G. Galluzzo and M. J. Loux (Cambridge University Press, 2015), 47.

¹²⁴ Maurin, “States of Affairs and the Relation Regress,” 200.

that problem aside since we can instead treat modal properties as quantifiers, yet even that might still have hidden difficulties), for if they did, they would face the same problem of unity as described in the previous section. We reach the second conclusion because, given the world just is the totality of states of affairs, the world then is a world of particulars. Therefore, not only does the position that states of affairs are brute facts commit us to nominalism, and therefore to the position that relations are not universals, it also denies relations all together.

The position fails to illuminate the problem of just what are states of affairs. The retreat to considering states of affairs as brute facts seems not to be because we actually have good reason to think that they are ontological primitives, reached at the end of analysis, but rather because we cannot explain the “metaphysical cement” that holds them together. The treatment of states of affairs as brute facts obfuscates rather than illuminates. It cannot be maintained simultaneously with the claim, however, that relations are universals.

RELATIONS AS NOT UNIVERSALS

So what avenues are open to us if we deny Premises 1b and 5d, “Relations are universals,” instead? Here, a promissory note must be offered for the present. First, the “weird problems” associated with TT and the successor theory that will be discussed, Truth Supervenes on Being, fall away if the relation does not exist except when the relation actually holds, that is, except where it obtains between two relata. This move comes at the price of demanding an ontological account of relations that explains when and how relations obtain and clarifies just what relations are if they are not universals. This is a demand for a general theory of relations.

A general theory of relations should meet the demands of any general theory. First, it should be coherent (does not involve holding a contradiction). This is the logical constraint. Second, it should offer maximal coverage—meaning, the best theory is that which explains the most cases with the

fewest outliers. This is the explanatory constraint. For a theory of relations, this means an account of several types of relations: at least symmetric and asymmetric relations, transitive and non-transitive relations, the so-called “internal” and “external” relations, as well as taking into account various ways that things can be related, such as temporally, spatially, logically, causally, as well as an entire suite of messier relations like emotionally, epistemologically and ethically as well as the relation of our primary consideration, similarly. While the purpose is to provide an explication of just what is the similarity relation, without a general theory of relations an explanation of similarity can be little more than an *ad hoc* explanation, full of unexamined assumptions about the nature and ontology of relations. If the similarity relation is then invoked to explain other metaphysical and epistemological features of the world, such an explanation will be sadly lacking. Third, a general theory of relations should be as ontologically sparse as possible. This is the metaphysical constraint and what has come to be known as Occam's Razor—do not have unnecessary entities. Fourth, it should posit as few unexplainables or brute facts as possible, a constraint that Peter Forrest has called “Leibniz's Razor” —the constraint of sufficient reasons.¹²⁵ Finally, we should not be able to generate any exceptions to the workings of the theory—the constraint of testing. If we find we cannot provide a satisfactory general theory of relations, then we have a reason, albeit an insufficient one, for accepting states of affairs as brute facts and embracing the nominalism it entails, doubting the existence of relations or that in fact a general theory of relations is possible. A general theory of relations is developed in the following two chapters.

What denying Premises 1b and 5d does not do is solve the problem of what constitutes states of affairs: the unity problem is not solved. Why think, however, that something is needed to unify the states of affairs at all if a particular is already related to its properties, or two particulars are already related? One reason is, as we have seen, TT demands states of affairs for truthmakers, as the constituents of those states of affairs are insufficient to serve as truthmakers for propositions that

¹²⁵ Peter Forrest, “Razor Arguments,” in *The Routledge Companion to Metaphysics*, ed. R. L. Poidevin et al. (Taylor & Francis, 2009), 252.

impute properties to particulars. And with the demand for truthmakers comes a treacherous path in its demand for unity. Dobb cautions that the introduction of a relation to relate the particular and property (and thereby constitute a “state of affairs”) is a dangerous ontological road to tread. He writes,

One thing is for sure: the metaphysical cement cannot be provided by introducing another universal, the relation of instantiation, to hold between *a* and *F*, for a vicious regress is threatened instantly How are *a*, *F*, and the instantiation universal unified? If we introduce another universal, a relation holding between pairs of particulars and universals and the relation of instantiation, the same question is begged.¹²⁶

This problem of unity is, however, one we can dissolve. We do not have to solve the problem of unity: we can simply avoid it entirely by denying Premises 1b and 5d and making further assertions or denials. We might, for example, claim that not only are relations not universals, but properties are not universals and therefore do not require “metaphysical cement” to relate them to particulars: they do not exist independently of their particulars. In doing so, however, we dissolve states of affairs as ontological facts either as brute or as entities over and above their constituents. As Armstrong was noted to observe above, states of affairs allegedly have intuitive appeal to realist. If we deny realism, states of affairs lose that appeal for we no longer find ourselves in need of the sort of unity that realism seems to burden us with. For this, though, we must also abandon TT in favor of another theory of truthmaking that does not depend on states of affairs: Truth Supervenes on Being (TSB in what follows). This abandonment of TT is one of the denials which we can and should make.

TRUTH SUPERVENES ON BEING

There is another theory of truthmaking that might also be a friend to the realist without

¹²⁶ Dodd, “Farewell to States of Affairs,” 150.

demanding something like a state of affairs. Many of TT's ideas and insights are preserved in this reformulation, usually known as the thesis that Truth Supervenes on Being. TSB has been summed up by Trenton Merricks as claiming: “. . . any two possible worlds alike with respect to both what entities exist and which properties (and relations) each of those entities exemplifies are thereby alike with respect to what is true.”¹²⁷ David Lewis has formulated it as follows:

For any proposition P and any worlds *W* and *V*, if P is true in *W* but not in *V*, then either something exists in one of the worlds but not in the other, or else some *n*-tuple of things stands in some fundamental relation in one of the worlds but not in the other.¹²⁸

TSB offers an immediate advantage over TT: as Dodd points out, citing David Lewis, truth seems like it depends not only on “*whether* things are, but also on *how* things are.”¹²⁹ This is particularly true when we consider inessential predication rather than existential or essential predication.¹³⁰ Hence, it is not the mere existence of entities, but their existence and their relations with other entities that “make truths,” and therefore the immediate drawbacks of naive TT are shut out from the beginning.

A second advantage with the formulation of TSB is that it does not invoke states of affairs as truthmakers but entities and relations. Although it does depend on modal statements such as possible worlds, all the work we need to do with TSB looks like it could be achieved by ersatz possible worlds and we need not embrace full-blown Lewisian modal realism. By considering different truths between possible worlds, such as one in which it is true that Anjing is brown and one in which it is false that Anjing is brown, we can identify the difference maker: what differs between the worlds that provides us with an account of the different truth values, and therefore what is the case that makes it true Anjing, in this given world, is actually brown. For example, in any possible world that Anjing exists and is brown, the proposition that Anjing is brown will be true by virtue of a brown Anjing, and if our world

¹²⁷ Merricks, *Truth and Ontology*, 68.

¹²⁸ Lewis, “Truthmaking and Difference-Making,” 606.

¹²⁹ Julian Dodd, “Is Truth Supervenient on Being?,” *Proceedings of the Aristotelian Society (Hardback)* 102, no. 1 (2002): 69–85, <https://doi.org/10.1111/j.0066-7372.2003.00043.x>.

¹³⁰ Dodd, 73–74.

is among those possible worlds in which there is a brown Anjing, then the proposition will be true in our (actual) world. In any possible worlds in which Anjing does not stand in the “fundamental relation” to brownness, that world will be a world in which it is false that Anjing is brown even though Anjing and brownness may both exist in that world. And if our (actual) world is like that world, then it will be false that Anjing is brown even though brownness and Anjing do both actually exist in our world—only not in the same fundamental relation as in worlds in which it is true Anjing is brown.

TSB does not overcome all of the problems of TT, or at least without amendments. The problem of negative existentials, for example, remain. Lewis maintained that TSB accounted for negative existential statements, because in a given world a negative existential is true just in case no “falsemakers” exist to make the negative existential true, and this can be understood in light of the difference between possible worlds in which the entity (and hence a falsemaker) does exist.¹³¹ However, this fails to accord with the hunch that what is true depends on what exists. The explanation for the truth of the negative existential is still given in terms of the *lack* of something's existence—namely, the falsemaker. But the falsemaker is generally just to be understood as the entity whose existence is being denied! Lewis attempts to invoke the difference in the world in which unicorns do not exist and that in which they do as “difference-makers.” Thus the world in which unicorns do exist, and its difference, is the truthmaker for the proposition “Unicorns do not exist” in our world. Our world, unlike the world with unicorns, does not contain the falsemaker. Yet still, the truth of the negative existential does not depend on being. The falsemaker for the proposition, “There are no unicorns” would be a unicorn. So while differences between possible worlds can be illustrative, the existence of an entity in one possible world and non-existence in another possible world does not seem to ground negative existentials in existence anymore than TT was able to do so since it is still the non-existence in the world in which the negative existential is true that grounds the existential proposition's

¹³¹ Lewis, “Truthmaking and Difference-Making,” 110.

truth. There may be ways to escape this objection, such as to suggest that negative existentials actually supervene over worlds as totalities, and that such totalities have negative properties (e.g., “the property of containing no unicorns”). Given that the purpose here is not to defend TSB as a complete, universal theory of truthmaking, such a defense will not be given, and the challenge of negative properties to the realist or TSB theorist cannot be taken up here. It seems unlikely, however, that TSB can successfully be defended as a complete theory of truth making without any outliers.¹³²

TSB can, however, offer an explanation of how many propositions depend on what there is for their truth values, as the case of whether it is true there is a black cat in the room or whether the cup is on top of the desk. It can, therefore, be a helpful tool in the metaphysician's kit even though it cannot serve as a ontological Swiss army knife to solve all the riddles associated with what makes any given proposition true. And as it turns out, TSB can be very helpful in understanding relations, as well as the similarity relation in particular, and hence this hashing out of TSB above is warranted. TSB will not only help understand some of the problems of treating relations as universals, but will also come in quite handy in understanding why analogies are not in fact trivially true later on in this work as we see that how TSB deals with necessary truths also illuminates the problem of triviality in similarity claims.

So, assuming TSB with certain restraints given its limitations, cannot we still hold that relations are universals? It seems that since it is not merely *what* exists, but also *how* existents stand in relation to one another, the weirdness of TT is eliminated without the demand of abandoning relations as universals. So, when relata stand in different relations to one another between one possible world and another, we have a difference in truth values. Hence, in one possible world there is a desk on top of a cup, and in another we have a cup on top of a desk. In one world the proposition, “The cup is on top of the desk” is true and in another it is false. What more do we need?¹³³

¹³² Here I find myself in agreement with Trenton Merricks, who despite a spirited effort to develop the most stalwart of TSB theories finds that ultimately it fails to offer an explanation of how all true propositions are made true by being. See Merricks, *Truth and Ontology*.

¹³³ TSB may also offer advantages over TT in that it seems better positioned to explain relations that hold between relata in which one may not presently exist. For example, “Ho Chi Minh was shorter than Barak Obama” or “Thomas Edward

First, there is something more to be asked for in this account. If “on top of” is a relation universal, then the same “on top of relation” obtains in either of the two cases above. And given the two particulars are the same, and the relation universal is the same, how do we explain the difference in truth values? The answer is of course obvious: in one case, it is the cup that is on top of the table, and in the other it is the desk that is on top of the cup. But how does an identical universal, holding between the exact same particulars, *obtain differently*?

Whether we embrace the position that relations are universals, particulars, or another ontological category onto themselves, a general theory of relations that also provides an explanation of such asymmetric relations is still required. The question of how the same relation can obtain differently is one of the most interesting and perhaps most difficult questions confronting metaphysicians today.

TRUTHMAKING AND ASYMMETRIC RELATIONS

It is Russell who is generally credited with observing that certain relations seemed to have a “direction” built into them and therefore would behave logically different from symmetrical relations, although that some relations had directionality “built into” them had been long observed by the Greek and Indian philosophers. Hence, the one I love occupies the position of the beloved, but if that love is unrequited then I am not also in the position of beloved but rather in the position of jilted! Russell devotes the sixteenth chapter of his *Principles of Mathematics* to asymmetric relations. Russell divides relations into four “types” based upon two properties: symmetry and transitivity.¹³⁴ A symmetric relation is one in which the truth of aRb , which symbolizes “a is related to b,” guarantees the truth of bRa . An asymmetric relation is one in which the truth of aRb never guarantees the truth of bRa . A

Lawrence caused the present day rule of the House of Saud.” TT seems as though it must endorse an eternalist theory of time, whereas it appears at least the TSB may have additional room to maneuver.

¹³⁴ Bertrand Russell, *The Principles of Mathematics* (University Press, 1903), §208, <https://books.google.com/books?id=yN9LAAAAMAAJ>.

relation is transitive if aRb and bRc guarantees the truth of aRc . A relation is intransitive if aRb and bRc never guarantees the truth of aRc .¹³⁵ These formal characterizations seem the easiest way to distinguish between the four “types” of relations. The challenge that has been persistently introduced in this chapter up until now is how the realist can defensibly suggest that a universal, identical in all of its manifestations, can explain this difference in direction of asymmetrical relations given (1) the particulars are the same, and (2) the universal (the relation) is the same. How can the *numerically identical* relata and the *numerically identical* relation relating the relata result in *different* truth values? Granted similarity is not an asymmetric relation (or, it will be argued in a later chapter, “naively transitive”), but any explanation of similarity must provide a prerequisite explanation of relations, and such an explanation must satisfy the demands of these four types of relations. A workable explanation of the symmetric relation of similarity that conflicts with an explanation of asymmetric relations fails to be an explanation of similarity.

TSB tells us that the relata here must be related differently, as difference-making (in *how* things relate) explains truth value differences when there is no difference in *what* exists. Therefore, the relation of the table being on the cup and the cup being on the table must somehow be difference as we so obviously can observe. A universal is the same (numerically identical) in all of its instantiations. Therefore, at least in the case of asymmetric relations, they must either be universals that are more finely particularized, resulting in a more ontologically extravagant world, or they are not universals. The argument runs as follows:

Premise f1: Universals are numerically identical in all their instantiations.

Premise f2: Relations are universals.

Premise f3: “On top of” is a relation, and therefore a universal.

Premise f4: The cup and the desk are related by an identical universal when the cup is

¹³⁵ Russell, §208.

on top of the desk, and when the desk is on top of the cup.

Conclusion f1: Therefore, there is nothing different in the way the cup and desk are related to each other when the cup is on top of the desk, and when the desk is on top of the cup.

Premise f5: TSB

Conclusion e2: Therefore, when “The cup is on top of the desk” is true then “The desk is on top of the cup” is true.

Premise f6: It is not true that when “The cup is on top of the desk” is true then “The desk is on top of the cup” is true.

Conclusion f3: Conclusion f1 must be false given we know Premise f7 is in fact true.

Conclusion f4: At least one premise from Premise f1-f5 must be false.

It seems then that asymmetric relations have some peculiarity that we do not find in other universals, for example, the universal “rabbithood.” Realist tend to think that rabbithood is the same in all its instantiations, which is what makes rabbits the genus that they are—rabbits. If we know that something instantiates rabbithood, then we know it is a rabbit. It is very curious, though, that given just the raw information about asymmetric relation universals and its relata we cannot tell what is true about the world. We cannot make sense of how the relation can hold differently if it is identical, and holding differently is just what TSB demands from us to make sense of the different truth values in the argument above. One solution is to reject that relations are universals. That suggestion will be taken up in what follows. There may be a way to rescue realism from this dilemma, though, but at a cost.

One route is to particularize the type of relation more finely: there is a relation of “being on top of a desk” and a relation of “being on top of a cup,” and these are two different relations and therefore two different universals. This explanation seemingly forces us into the most crowded of “Wyman’s slums” with a host of relation universals for every possible particular and every possible relation.

The result is ontological extravagance in the extreme; while the realist may claim that these are still only one *type* of ontological entity, universals, their universals are now competing with the nominalists for the sheer number of particular entities. It is also an open question as to how many of these resulting “finely particularized” universals would actually be repeatable. There is also a second problem that the relation “hides” a particular within the relation. The relation of “being on top of a desk” demands, for example, and specific type of particular: a desk. If the universal exists independently of its instantiations, how can it include a concrete particular, or a second universal, for example, “on top of a particular exemplifying deskhood?”

“Does this relation,” the questioner asks, “hold when it sits on a table being used as a desk? Or what about a board sitting on top a few cement blocks above which the poor graduate student types out her papers?” Here, though, the realist may have an advantage. The relation universal “being on top of a desk” only holds between two particulars, one of which additionally instantiates the universal of “desk-ness.” One may have trouble distinguishing the fine desk of the professor from the heap of boards and concrete of the graduate student, but that is just a problem in sorting out universals. Once we determine the universal in fact obtains, then we have the possibility of a second universal, the “being on top of a desk” universal, obtaining as well.

Part of the problem with this approach is simply the multiplication of entities involved in any given situation. When the cup is on top of the desk, “being on top of a desk” is also present as the instantiation of a universal. But must not also “being below a cup?” And we might think that “being five inches from the edge of a desk,” or “being three inches from the center of a desk,” or “being two inches below the handle of a cup,” or “ceramic being in contact with wood” are all ontological entities that are present. While there may be some who would swallow such a world with such abundant universals, most realists do not endorse universals for relations such as “being three feet from a barn” or “being three feet from this [particular] barn.” Perhaps they should, since it seems the justification

for setting aside this answer at this point comes more from Occam's Razor than any objection as to the unworkability of this answer. Finely grained relation universals seem capable of providing a solution to the problem: one denies an “on top of relation” and instead insists that relations, even spatial relations, have other universals built into them. Relations hold between particulars, but only as those particulars exhibit other universals. Such a solution might, however, seem an anathema to many realists.

“But,” comes the question, “given this multiplication of entities, why not just embrace nominalism: it has the same ontological parsimony that made you resist considering relations as an independent category apart from universals (fewer kinds of things) since it allows you to get rid of universals, and at the cost of the multiplication of entities which you have already embraced?” This suggestion is plausible, at least, given the reply to Russell we saw at the beginning of the chapter. Nominalism does not multiply the *types* of entities, but the *number* of entities. Instead of suggesting there is a type of relation universals, the “on top of the desk” relation universal, one could claim that in fact all relations are particulars, and hence deny they are universals at all. This approach dissipates the problem of distinguishing between the desk being on top of the cup or the cup being on top of the desk since those are both unique relations. However, it does not address the repeatability of the “on top of” relation we seem to see enshrined in our use of relational language and our claims about relations. These claims are of course not limited to a universe of discourse containing desks and cups, but include relational claims across the gamut of human experience and epistemology.

If we treat each relation as a particular, we do not encounter the problem of the contradiction in Conclusion f3. Yet, we may give up repeatability. Trope theory offers a middle ground. Although we take property instances to be unrepeatable property instances, they are seen as forming classes of things which, taken together, constitute properties. It seems, then, that they may offer a roundabout solution that can give us particular instantiations of relation tropes, but ones which form a class or set and

therefore have at least some explanation as to why we think the “on top of” relation is similar when the cup is on top of the table or when the table is on top of the cup.

RELATIONS AS TROPES

Tropes are not universals in that they are particulars, are spatio-temporally located, and therefore are not shared, but unlike tables and cups they are often considered to be “abstract” rather than concrete entities.¹³⁶ This characterization of them as “abstract” may be a little misleading. By abstract, theorists have meant that they can be “abstracted” away from the concrete particular, like color or shape.¹³⁷ So, consider a glass of water, a glass of milk, and a glass of orange juice. The water, milk, and orange juice all seem to have a common property, fluidity. The trope theory objects that we have not observed a single thing, fluidity, but instead have observed three different instances of fluidity. It would be incorrect to infer, from these three observations, that one and the same thing—the property of fluidity—exists or is exemplified in all three. Rather, we have three instances of exactly or extremely similar things—the fluidity of the water, the fluidity of the milk, and the fluidity of the orange juice. The theorist tells us that these “property instances” are tropes. Talk of the property of fluidity is then, according to the trope theorist, talk of the class or set of all instances of fluidity. Tropes are usually considered to be an alternative answer to the problem of properties in general, and so it has been usual for the trope theorist to suggest that all property-talk is to be explained in terms of tropes or sets of tropes without recourse to universals.¹³⁸

Tropes seem promising because they avoid a number of problems associated with TT and TSB. First, relational tropes do not exist independently of obtaining; unlike universals, tropes do not have existence apart from their instantiations. Hence, “on top of” does not exist independently of something

¹³⁶ Maurin, “Tropes,” n.p.
Douglas Edwards, *Properties* (Malden, MA: Wiley, 2014), 48–49.

¹³⁷ Edwards, *Properties*, 50.

¹³⁸ Of course, we can imagine a theorist who holds that there are universals, which explain properties, but that relations are best explained by tropes. Such a possibility, however, will not be explored here.

being on top of something else. This sort of particularization is attractive because it also seems to solve the “directionality” problem that seems so difficult to explain when considering relations as universals.

Given that the “on top of relation” is a different relation in all of its instantiations, we have no aporia as to how the same relation can obtain between the same two objects yet yield different truth values: the same relation simply does not obtain. We recognize some similarity, however, between the cup and the manuscript being on top of the desk, and therefore we have a class of relations which we predicate of entities by saying, “One is on top of the other.”

Tropes have therefore been invoked as an explanation of relations. Hence, in observing the cup on top of the table and the manuscript on top of the table, we observe two particular relations that exactly or extremely closely resemble one another. But if the manuscript is picked up from the table, the relational trope “on top of” that existed ceases to exist as it has no independent existence. That the relations resemble each other exactly or extremely closely, as do instances such as fluidity, allows us to form sets of resembling tropes, and these sets of resembling tropes (sets of “on top of” relational tropes or sets of instances of fluidity) allow a more general property talk: talk of properties is talk of sets of tropes.

As promising as it would first appear, trope theorists fare little better than the realist when it comes to analyzing relations. Although offering some advantages over relations as universals, taking relations as tropes comes along with its own set of associated problems. Three such problems loom large. First is the problem of locating relational tropes, and one theorist's attempt to explain this problem by attempting to eliminate relational tropes will demonstrate just how extensive the problem is for the trope theorist. Second is the problem of participation that arises depending on our answer to the first: how relation tropes inhere in substances or form bundles, given participation seems to be a relation. Third is the problem of how tropes form classes or sets, but without a theory of similarity among tropes, how one forms sets will remain mysterious.

THE LOCATION OF RELATIONAL TROPES

First, let us take a simple example with the relation of “adjacent to.” Let us say that the cup is adjacent to the book. Given a general commitment of the trope theorist that all tropes are spatiotemporally located, where is this trope located? Is it located in the space between the book and the cup? When I have removed the book from its place on the table and put in on the shelf, but have not disturbed the space between that existed between the book and cup and now continues to exist *sans* book, why do I think the trope no longer exists? And what about relations that, *prima facie*, look much less like candidates for something that is spatiotemporally located at all, such as “Ivan IV Vasilyevich was older than Napoléon Bonaparte.”¹³⁹ Given the lives of Ivan and Napoléon never overlapped—that is, that the two relata never existed at the same time—suggesting that the “older than” relation between them is a spatio-temporally located trope seems to insist on an eternalist or growing block metaphysics that many trope theorists will be disinclined to accept.¹⁴⁰

The difficulty here is that trope talk, when it is property talk, normally comes along with a commitment to a either substratum theory, as in the case of the Nyāya philosophers, or to a bundle theory, or to some hybrid view like that suggested by Peter Simons.¹⁴¹ Under the first view, there is a substratum, a bare particular,¹⁴² in which the trope inheres. This “inherence relation” was long recognized as posing the sort of problems we saw above with realism and unifying particulars and universals into states of affairs. It has been accorded a sort of primacy by the Nyāya philosophers (it is a self-linking relation, and is not a trope but has only one instance, yet it is also not a universal—it is

¹³⁹ Ivan IV Vasilyevich (1530-1584) lived over 53 years while Napoléon Bonaparte (1769-1821) lived less than 53 years.

¹⁴⁰ This problem again serves to illustrate the impact that a theory of relations will have on larger metaphysical enterprises.

¹⁴¹ Peter Simons, “Particulars in Particular Clothing: Three Trope Theories of Substance,” *Philosophy and Phenomenological Research* 54, no. 3 (1994): 553–75, <https://doi.org/10.2307/2108581>. In this essay, Simons suggests that tropes that are essential to a particular being what it is form the bundles that make up particulars, and the substrate in which non-essential tropes inhere. It appears that Simons may have now abandoned this position, however.

¹⁴² Many trope theorists have rejected bare particulars, but whether such accounts are successful, or what the arguments are for claims substrate trope theorists need not be committed to bare particulars, cannot be explored here for considerations of space.

the same inherence relation that relates all substances to their properties) as well as some contemporary trope theorist who takes the relation as a brute fact. Under the second view, that of the bundle theorists, particulars just *are* bundles of tropes without some substratum in which they inhere. Indeed, under this view bundles have even been described as the “mereological sums of properties” where those properties are understood as tropes, although this is not a view endorsed by all bundle theorists.¹⁴³ Both views are not without their problems, as we will see in what follows, but this immediately poses the problems of relations which do not exist *in* or inhere *in* either of their relata, nor *constitute* them.

It seems for property tropes that the trope is always in or part of a concrete particular. But with relations like “adjacent to” it does not seem that there is some concrete particular in which the relation inheres (no substrate) nor some bundle it is apart of. Speaking of the latter theory, Ted Sider recently remarked that relations “just don't fit into the bundle theory's picture.”¹⁴⁴ Therefore, given this lack of location of relation tropes, it seems that relations are a very different sort of beast than property tropes. This objection is of course not a sufficient reason to reject that relations are tropes, but if one is also going to endorse tropes as an explanation of properties and tropes as relations—that properties and relations are fundamentally the *same kinds* of ontological entities—then one owes an explanation as to why properties and relations seem to be so very different, one located in a concrete particular (a substrate or bundle) and one somewhere in a yet-to-be-explained aether. Hence, the same demand we can make on those that treat relations and properties as universals must be made upon those that treat relations and properties as tropes.

TROPES BUT NO RELATIONS

One line of argument is to simply abandon the idea that all tropes are spatiotemporally located. There may be tropes that are strictly abstract, or that are not spatially located, such as “subtle” or

¹⁴³ Douglas Ehring, *Tropes: Properties, Objects, and Mental Causation* (New York: OUP Oxford, 2011), 98.

¹⁴⁴ Theodore Sider, “Object-Free Ontology” (American Philosophical Association, Chicago, IL, March 3, 2016).

Hamlet's melancholy. Some entities are, under this view, abstract but are particulars and non-repeatable none the less, and hence qualify as tropes. Some relations, at least, might be similarly abstract and therefore asking where they are located is a misguided question all together.

Another position is to deny that all or any relations actually have corresponding tropes. What follows, although specific to a trope theorist, provides us with a sort of preview of what the denial of relations might look like. Among those relations that theorists have suggested do not have corresponding tropes are just these very sort of problematic cases discussed above, such as “adjacent to” or “older than.” This position, argued for by Peter Simons, is that, “contingent spatiotemporal truths do *not* require external relations as a basic kind of entity, that the more fundamental relational truths behind such contingencies are internal”¹⁴⁵ Simons would claim that in the example of Ivan and Napoléon, no relation actually exists between Ivan and Napoléon, but rather Ivan and Napoléon themselves (or some analog, such as the process or bundle that will be identified as Ivan and Napoléon) are the sole truthmakers for the the proposition “Ivan IV Vasilyevich was older than Napoléon Bonaparte.”¹⁴⁶ There is no third thing, the relation between Ivan and Napoléon, that make the proposition true. In fact, Simons will widen his account and conclude that in fact there are no relations, only features of particulars from which we can make relational predications which are simply two or *n*-place predicates but ones without any existential commitment to the predicates having an ontological entity as a “real” themselves behind them, so to speak. So when I say “The cup is on top of the table” I do not therefore have an ontological commitment to something like the on-top-of relation. So under this account, there are no relations. Simons's account depends on exploiting the difference between “internal” and “external” relations, and denying the latter while claiming all relations' work can be done with the former which does not, in fact, commit us to an ontology containing relations.

The distinction between internal and external relations roughly follows that given by Russell as

¹⁴⁵ Simons, “External Relations, Causal Coincidence, and Contingency,” 114.

¹⁴⁶ Simons, 114.

he considers the opinion of the “philosophical dislike of relations.”¹⁴⁷ The first of these views is that all relations are grounded in the nature of the the relata. Russell writes of two views that might be considered “internalist” about relations:

When this opinion [of philosophical dislike of relations] is confronted by a relational proposition, it has two ways of dealing with it, of which the one may be called monadistic, the other monistic. Given, say, the proposition aRb , where R is some relation, the monadistic view will analyse this into two propositions, which we may call ar_1 and br_2 , which give to a and b respectively adjectives—supposed to be together equivalent to R . The monistic view, on the contrary, regards the relation as a property of the whole composed of a and b , and as thus equivalent to a proposition, which we may denote by $(ab)r$.¹⁴⁸

Klement restates Russell's position by saying “this amounts to the claim that a 's bearing relation R to b is always reducible to properties held by a and b individually [the monadistic view], or to a property held by the complex formed of a and b [the monistic view].”¹⁴⁹ These are total theories of relations, however today many metaphysicians think that there are some relations which are internal and some which are external.

Internal relations, then, are those relations which are necessary to the existence of their relata in that they emerge from the very natures' of their relata. These are sometimes termed as intrinsic relations or essential intrinsic relations.¹⁵⁰ A common example of such an internal relation is the relation that makes true the proposition, “Six is less than seven.” This relation that makes true the proposition could not be changed without changing the intrinsic properties of the relata themselves. If

¹⁴⁷ Russell, *The Principles of Mathematics*, Section 212.

¹⁴⁸ Russell, 212.

¹⁴⁹ Kevin Klement, “Russell’s Logical Atomism,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Spring 2016, 2016, n.p., <http://plato.stanford.edu/archives/spr2016/entries/logical-atomism/>.

¹⁵⁰ Erica Shumener, “Response to ‘Object-Free Ontology’ by Ted Sider” (American Philosophical Association, Chicago, IL, March 4, 2016).

it were not true that six is less than seven, then six and seven must actually be something different than they are. Hence the relation is taken to be an “internal relation.”¹⁵¹

External relations, sometimes called extrinsic relations, are simply relations in which the relata do not depend on the existence of the relation. External relations are not necessary to the natures of their relata. An example of such a relation is the relation that makes true the proposition, “Cesar Cielo is faster in the 100 meters freestyle swim than David Walters.”¹⁵² One does not think that David Walters shaving off 0.43 seconds off of his swim would have changed what either he or Cesar Cielo essentially are. We do not think that their very natures would be changed had Walter defeated him at that swim meet in Rome in 2009 in the same way that we think that the very natures of six and seven would be changed if it were not true that six is less than seven. Another simple example is the cup and the desk upon which the cup sits. We do not think that either would have their natures changed were the cup set upon the shelf. The relation between them does not seem constitutive of the cup's or table's natures, and therefore is an “external relation.”

Simons modifies this account of external relations to some extent, and qualifies such relations as weakly external or strongly external. A relational predicate is

weakly external if its truth is necessitated by the existence of the terms and the ways they as a matter of fact intrinsically (non-relationally) are, their factual natures¹⁵³

and a relational predicate is

strongly external if the existence and factual natures of the terms do not necessitate its truth. For example that John and Mary are at a certain time spatially next to one another . . . is not necessitated by how John and Mary are then, but by where they are

¹⁵¹ We could generate pluralistic, monadistic accounts and monistic accounts of such a relation. Hence this division between internal and external relations is not a commitment shared by all thinkers about relations.

¹⁵² This is based on the November 2015 U.S. Open and NCAA records, based on a 2009 record. “USA World US Open and NCAA Records,” accessed December 17, 2015, http://www.usaswimming.org/_Rainbow/Documents/cbdbc270-a6a4-4f5e-b9e9-a95866df19f2/USA%20World%20US%20Open%20and%20NCAA%20Records%2020160308.pdf.

¹⁵³ Simons, “External Relations, Causal Coincidence, and Contingency,” 114.

then¹⁵⁴

First, Simons strategy is to reduce weak external relational predicates to internal relational predicates, and hence demonstrate that they are extraneous. And given there are no external relational predicates needed for weak external relations, we have no need for an ontological entity to serve as a truthmaker for them nor a need to find some positively existing entity or configuration for truth to supervene upon.

Consider the situation, “Lakshya is taller than Devon.” This seems to be an example of an external relation given that it does not seem necessary to either Lakshya's nature or Devon's nature that they are the height that they are, and hence the relation could be changed without any change in identity. For Simons, this is a weak external relation. But if we are willing to make these features of Lakshya and Devon necessary, or if we are willing to simply disregard the necessary versus contingent distinction expressed in the earlier definitions of internal and external relations, we can collapse these sorts of relations easily. If we think that if fact Lakshya would not the same Lakshya that he is without being the height that he is, we can dispense with the distinction between internal and weakly external relations.

And what of so called strongly external relations? Simons focus is on spatiotemporal relations, and as we saw he denies that “contingent spatiotemporal truths require external relations [sic].”¹⁵⁵ Simons makes this claim because an ingenious use of events as ontological entities, with the underlying assumption for any event *E*, *E* has both its causes and its constituents (whatever those may be) necessarily. That is, event *E* would not be event *E* had something else caused it. For example, had the Titanic sunk because of a structural problem rather than having struck an iceberg, the event that was the sinking of the Titanic would have been a different event that it actually was. Furthermore, if an event *E* does not have its same constituents it would not be the same event. So for example, had the swim match in Rome in 2009 featured different swimmers than it actually did, or the 2016 Superbowl

¹⁵⁴ Simons, 115.

¹⁵⁵ Simons, 114.

featured different teams than it actually did, both would have been the different events.

Are any relations admitted by Simons? A collision provides what seems a good example of a relational trope, but if we invoke events in our ontology, claims Simons, we can analyze away the relational trope. He writes,

If John collides with Mary in the corridor at 10 a.m., the collision is an event which cannot exist without both John and Mary, neither of whom is part of the other, and since it is categorically impossible for an event to be part of a thing like John or Mary, the collision is a relational trope.¹⁵⁶

However, in the end Simons will reject even this is requires a relation trope as he will interpret it not as an external relation, *but an internal relation of the event itself*, of the collision.¹⁵⁷ Given it would be impossible for event C to have existed without its constituents, its constitution is an internal relation. It would have been impossible for event C to have occurred without John and Mary. Therefore, rather than interpreting the collision as an external relation between John and Mary, it is interpreted as an internal relation of the collision itself, involving two relata but ones necessary to the very nature of the entity. It is likewise with the proposition, “Cesar Cielo is faster in the 100 meters freestyle swim than David Walters.” Rather than analyze this as a strong external relation holding between Cielo and Walters, instead it is analyzed as a weak external relation between the events, that of Cielo's 100 freestyle swim and Walter's 100 meter freestyle swim. Then the analysis from weak external to internal can proceed, so that there is no longer a relation between Cielo or Walters, or between Cielo's swim or Walters's swim, but rather just facts about Cielo's swim and Walters's swim that are sufficient to serve as the truthmakers for the proposition, “Cesar Cielo is faster in the 100 meters freestyle swim than David Walters” without introducing any further ontological entity in the form of a relational trope.

Simons pursues this strategy to analyze all relations as internal relations, with the claim that

¹⁵⁶ Simons, 118.

¹⁵⁷ Simons, 119–20.

internal relations require no further ontological commitment beyond the relata themselves as would external relations. Given there are no genuine external relations, there are no ontological commitments to relations. Since there would be relational tropes iff there were external relations, given there are no external relations there are no relational tropes. For spatiotemporal relations, he writes,

The (very many) processual inhabitants or occupants of spacetime are severally and jointly sufficient for the many truths about their spatiotemporal relationships, and no additional real relations are required in the truth-making role.¹⁵⁸

Simons claim is that the bundle trope theorists can not only make sense of relations, but true to Ted Sider's insight quoted above, can actually dispense with relations as ontological entities all together. Tropes are all one needs, and among tropes relational tropes are not needed.

Yet there is still a problem looming for theorists such as Simons: it appears that Simons advocates a position in which every trope an entity has, it has necessarily. One might, at first blush, be comfortable with me having all the properties I do necessarily, but it seems that my properties constantly change; in the evening, I look a bit scruffy, and I do not after a morning shave. In the winter, I pale and therefore am pale, but in the summer, I tan and therefore am tanned. Some account, then, of how my necessary properties change but my identity remains the same, is needed; either the denial of the identity of indiscernables needs to be made, and some alternative account given, or an account of the seeming haecceities that must be introduced to maintain identity through change is required. Even if I am analyzed not as a concrete particular but instead as an event, it is hard to believe that my teaching of class this morning would have been a different event had my bundle differed in terms of its scruffy tropes or its pale tropes. Some properties of events simply do not seem to be necessary to the event's identity, like my relative scruffy tropes when teaching this morning. One might question if the event that was the 1988 World Series would have been a different event if we replaced

¹⁵⁸ Simons, 124.

one dust particle on the playing field, or if John's coat had an extra speck of lint on it when he collided with Mary. If we agree these would have been the same events despite microscopic changes in the composition of the events, then the analysis of all relations as internal given that all events have all their properties necessarily just seems false. In the past, Simons maintained that some tropes may be essential, and that these were involved in making up the bundle that made up a particular, and that this bundle could then serve as a substrate for non-essential tropes, the so called “nuclear option.”¹⁵⁹ This combination of bundles and substrate theories allowed the distinction between necessary, internal tropes (and hence internal relations) and accidental tropes (and hence strongly external relations). Such a distinction cannot be maintained, however, with the claim all relations are internal.

We might also simply think that there do exist relations that cannot be explained in terms of internal relations at all. For example, that Devi is the step-daughter of Prakash seems not to depend on any internal properties of Devi or Prakash. The “events” that are Devi and Prakash seem to lack any necessary connection as well. It is possible, for example, that Prakash is unaware he has a step-daughter, or that Devi does not know her mother has remarried. What would the internal relation be, then, that would make true the relational predication then? Given TSB, the world in which Prakash is Devi's stepfather is different than the one in which he is not, and given TSB this is because Prakash and Devi must stand in different relations to each other. Here, the denier of relations must retreat to the claim that there will simply be some relations that are, in some sense, “unreal.” For relations that cannot be explained by strictly internal relations, we simply deny that they have any ontological reality and become “merely verbal” or “strictly conventional.”¹⁶⁰

We can press the denier of external relations further here. Another example, which one might be less inclined to dismiss as “merely conventional,” is the relation of lines being parallel or the relation of being perpendicular. That any two lines are perpendicular in Euclidean or affine geometry

¹⁵⁹ Simons, “Particulars in Particular Clothing: Three Trope Theories of Substance,” 567.

¹⁶⁰ This will be explored further in Chapter Five in light of Buddhist objections to the reality of relations.

seems a perfect candidate for a contingent spatiotemporal truths.¹⁶¹ If it requires external relations to determine any two lines are perpendicular, then Simons is wrong on both fronts: that contingent spatiotemporal truths require no external relations, and furthermore, that there are no external relations. Perpendicularity is perhaps the clearest case in which we could know everything there is to know about each of the two lines themselves and still not know whether they are in fact parallel.

Perpendicularity is a symmetric relation that holds between lines iff the two lines intersect, and at the point of intersection the straight angle of one line forms two congruent angles, and that the sum of these congruent angles is 180° (hence, each angle must necessarily be 90°). However, we could be supplied with all the information about any two lines, such as their slope, but without external relational information we can get only by comparing the slopes or the lines themselves, we could not determine whether they were perpendicular. The slope of the lines, for example, which can be used to determine whether lines are perpendicular only make sense relative to a Cartesian plane, itself a system of relations; without reference to such a plane, the slope of a line is meaningless. The slope itself represents a relation between the x-axis, y-axis and the line itself. We could be supplied with information about every point constituting each line, including the points of intersection for any two lines. But this information would still be insufficient to determine if they were perpendicular because we would require additional information, in the form of the relations the points hold to each other, to determine if the lines were perpendicular. We might note, for example, that given information about all the points, that the lines intersect. If there were more than one intersection, we could rule out the lines are perpendicular. However, if there were only one intersection, this would by itself not provide us with the information to determine whether the angles are congruent. It is only if we understand either the relations between the points—information not supplied by information about the points themselves—or the relations between the lines, such as angles formed by the lines but not constituting nor

¹⁶¹ The argument, although different in details, should generalize to hyperbolic geometry and elliptic geometry as well.

properties of the lines themselves—can we determine if any two lines are perpendicular. Therefore, contingent spatiotemporal truths require (strong) external relations as truthmakers, and therefore there are, *contra* Simons, (strong) external relations. Now the question is, granted there are external relations, is there any reason not to invoke them in scenarios such as collisions and comparisons of height and swimmers? None seem obvious.

While it seems the trope theorist who denies relations as distinct ontological entities can accomplish much, problems remain with the account. The first set of problems concern making all properties essential properties of a bundle whether the bundle is taken to be a concrete particular or an event. The account suggests that concrete particulars have all of their properties necessarily, while it seems that a bundle has some its tropes accidentally. The claim that all events have all their properties necessarily seems false. It further seems that this account either must suggest that the identity of bundles is constantly changing, or it introduces unexplained haecceities . The second set of problems concerns those relations that just seem immune to this analysis. Even if we deny that relations can only be explained by appeal to strong external relations and therefore not “real” or lack existence, an account of them must still be offered given they account for differences in truth values of propositions across possible worlds. And it seems such a denial does violence to relations that we think are as real as any others, like being an in-law or being perpendicular.

The denial of relations will be explored in the following chapters, highlighted by the debates between several schools of thought in the Indian tradition that do not treat relations as either universals or tropes, the Nyāya, the Prābhākara Mīmāṃsā, and the Buddhist denier of relations, Dharmakīrti. Yet another problem of relations looms large for the trope theorist who grants that there are relations, and such relations are of the same type as properties, tropes: the problem of participation.

BUNDLES, RELATIONS AND COMPRESENCE

There is another classical problem casting its long shadow over trope theory, and this problem is the cousin to that of universals and the formation of states of affairs. How do tropes come together with concrete particulars under the substratum theorist's and bundle theorist's accounts, since if the relation between tropes and particulars is indeed a relation, then will not that relation itself be a trope? For a trope to be related to substance or bundle of which it is a part of, either as inhering in a substrate or constituting a bundle, a third trope will be needed to relate the trope accordingly, and if this third trope is related to the bundle, then a fourth trope will be needed to relate the third, and so on, *ad infinitum*. The parallel between the substrate trope theorist and the realist ought to be apparent enough, but a very similar regress problem also confronts the bundle trope theorist. As such both substrate theorists and bundle theorists have typically resorted to a primitive or special relation in attempt to block such a regress: a special inherence relation and compresence. In what follows, the bundle theorist's compresence relation will be looked at as it demonstrates a unique set of problems for the trope theorists, including those who seek to analyze relations as ontological entities through internal relations.

While inherence is usually associated with substrate theories, compresence is usually associated with bundle theories. One explanation of bundle theory is that objects are bundles of tropes. These groups of object-forming tropes are considered to be compresent, meaning that they occupy the same spatiotemporal region.¹⁶² Compresence seems to be a spatiotemporal relation that exists between the compresence tropes: that they are located in the same spatiotemporal location is what makes them compresence. Just what is this compresence relation? Maurin suggests that there are two ways to think about this relation: as an internal relation or as an external relation.¹⁶³ It seems, though, that neither by taking compresence as an internal relation or an external relation do we get a satisfying answer. The

¹⁶² C. Daly, "Tropes," in *Properties*, ed. D. H. Mellor and A. Oliver, 1 edition (Oxford ; New York: Oxford University Press, 1997), 157.

¹⁶³ Maurin, "Trope Theory and the Bradley Regress," 321–22.

problems of making compresence essential to the natures of the compresence tropes seems apparent enough from the discussions above, but Douglas Ehring has also identified two regresses the emerge if it is taken as an external relation.¹⁶⁴ Hopefully, the parallels with realist problems of the unity relation and inherence will be obvious enough to the reader without additional explanation.

If we think that the relation of compresence between two tropes in a bundle is an internal relation, then there must be something about the nature of the tropes themselves that make them compresent. This would mean, then, that for any property instances a particular has, it must have these properties necessarily. If we think that Anjing exemplifies the property instances of being a mammal and of being brown, something about the nature of the mammal trope and brown trope are related into such a way as it is impossible for them not to be so related. If, for example, Anjing were white, and did not exemplify the brown trope, the mammal trope would be so radically altered as to no longer be the the same in its intrinsic nature. The problem with this account is that we do not think that all the property instances any particular has are essential to it. We do not think that there are necessary relations that exist between Anjing's "mammalness" and Anjing's "brownness," and we can imagine Anjing no longer being brown (for example, having been dyed blue or having gone gray from age) with Anjing's mammalhood being unchanged. To make compresence an internal relation seems to make the relation between an object and its properties too strong. To think that my tannedness or paleness at the moment is essential to me fails to accord with at least some theorist's intuitions about necessary and accidental properties or understandings of modality. This is the problem that a theorist like Simons will have to explain or explain away, and that comes part and parcel with Simon's rejection of relational tropes. For those who accept compresence as an internal relation, the problem is identical. This conclusion, that all properties are necessary or essential, seems hard to swallow as a consequence either denying relations as ontological entities, or insisting compresence is an internal relation.

¹⁶⁴ Ehring, *Tropes: Properties, Objects, and Mental Causation*.

We might then instead think that we would be better off in treating compresence as an external relation since we can now feel some confidence that there are such entities. This approach seems to offer the advantage that the relations between compresence tropes are not necessary while leaving room to think that some tropes might be necessary to the object's nature or identity. Hence, while we can imagine Anjing being a dog and being either brown or white, we cannot imagine Anjing being a dog but no longer being a mammal. The essential property instances are not relations that hold between tropes, but hold between the particular and the tropes it may or may not have.

Since relations are also tropes, the compresence relation, as an external relation, is also a trope. Therefore, since all tropes are to be spatiotemporally located, we can legitimately ask the question of the last section: "Where is the compresence relation trope located?" Ehring had identified two different regresses that kick in depending on how we answer that question, one that results from considering the compresent relation within the bundle, and one that results from placing the compresent relation outside of the bundle.

Under the first view, tropes are part of a bundle because they are related by a compresence relation. If the compresent relation is placed inside the bundle, then the compresent trope is part of the bundle and therefore compresent with the other tropes which are part of the bundle.¹⁶⁵ The account of how tropes become part of a bundle is that they are related by a compresence relation. Therefore, the compresent relation relating the tropes in the bundle must be part of the bundle by entering into a compresence relation. This compresent relation will either be inside the bundle or outside the bundle. If it is inside the bundle, then it will be so in virtue of being related to the tropes to which it is related through another compresence relation, and so on.¹⁶⁶ It is a familiar story from the problem of unity of states of affairs, a wolf in new clothing to mix metaphors.

The second problem is likewise a familiar one, an analog to the problem observed concerning

¹⁶⁵ Ehring, 120.

¹⁶⁶ Ehring, 120.

the independent existence of relations as universals and TT. Ehring asks us to consider the following:

For tropes t_1 and t_2 to be compresent, they must be linked by a compresence trope, say c_1 . But the existence of tropes t_1 , t_2 , and c_1 is insufficient to make it the case that t_1 and t_2 are compresent since these tropes could each be parts of different, non-overlapping bundles.

The problem is practically identical to that observed in the “weird” results of the truthmaker theory that led to the difficulty of explaining how, if existence makes true, the existence of the universal relation “in front of” and the the particulars you and Salmon Rushdie, “You are in front of Salmon Rushdie” is false.¹⁶⁷ If compresence is outside of the bundle, then there is no guarantee, given the existence of that compresence relation, that any two give tropes are actually compresent. That is, trope t_1 and trope t_2 as well as the compresent trope, c_1 , could all exist yet trope t_1 and trope t_2 not be part of the same bundle, that is, not be compresent.

Ehring considers six different possible responses to the problem of compresence, including that compresent tropes are not within the bundles; one that simply posits, *post hoc*, that there can be no higher-order compresent relations; one that denies the compresent trope can itself be compresent; and two, that simply deny compresence is in fact a relation and hence introduce compresence as a primitive: it continues to operate as a relation in that it relates tropes to form bundles, but unlike all other relations, it is not a trope relation but a primitive.¹⁶⁸ He finds reasons to reject all of these options, and I will not rehearse them here except to point out the common strategy shared in all these approaches: because the treatment of properties and relations as essentially the same kinds of things, tropes, these accounts of relations failed. In each case resort was made to a special relation, an outlier to which all the theory has to say regarding relations is discarded because were the theory of relations applied to this relation, the theory becomes unworkable as a whole. Ehring's last suggestion, and his

¹⁶⁷ If you do happen to be in front of Salmon Rushdie right now, please give him my regards and consider something else that exists and is currently far away from you.

¹⁶⁸ Ehring, *Tropes: Properties, Objects, and Mental Causation*, 122–28.

own as a bundle theorist, is interesting as we can identify at least some parallels between his suggestion and that of much earlier philosophers of the Indian Nyāya school, such as Gaṅgeśa Upādhyāya.

Calling his position that of “compresence is self-relating,” Erhing writes

There is no regress because the compresence relation itself is a special kind of relation, a “self-relating” relation, one that can take itself as one or more of its own arguments.

As we move up the supposed regress, we do not find ourselves with new compresence tropes, and, hence, there is no infinite regress at all.¹⁶⁹

That is, the compresence trope is “self-relating,” meaning that it relates the tropes to form bundles, but it is related to itself, which is how it is itself part of the bundle. Hence, we may ask for a compresence relation to relate the compresence relation to the bundle, since under this view it is part of the bundle.

However, that second-order compresence relation, because compresence is self-relating, just is that first compresence relation. Erhing explains:

Tropes t_1 and t_2 in bundle b are linked by a compresence trope c_1 which is in b . c_1 is linked by a compresence trope to t_1 , but that linking compresence trope, c_2 , is just c_1 itself, which is both a relation and one of its own relata.¹⁷⁰

So we must conclude that we are mistaken even in identifying c_2 as a second trope. There is in fact only one, c_1 , capable of relating tropes to each other as well as itself to other tropes.

Oddly enough, Erhing does not use the term “reflexive relations” as this concept seems like it would be beneficial since the logic (if not the metaphysics) of reflexive relations are well understood. As it will be recalled, Peter Simons remarked, “the metaphysics of relations (unlike their logic) is still in its infancy” and the metaphysician, although blazing new trails, must be cognizant of the better understood logic of such relations.¹⁷¹ Generally, relations are classified as reflexive, irreflexive, or non-

¹⁶⁹ Ehring, 128.

¹⁷⁰ Ehring, 128.

¹⁷¹ Peter Simons, “Relations and Truthmaking,” *Proceedings of the Aristotelian Society, Supplementary Volumes* 84 (2010): 199.

reflexive depending on the relation's relation to itself. Hence, a relation is reflexive iff for any object x , if x is in relation R , then x bears R to itself. A classical example is “being the same weight as” since anything any object in the relation of “being the same weight as” will bear that relation to itself. Relations are irreflexive iff it is impossible for any relata in the relation to bear the relation to itself (for example, “is a different weight as”). Non-reflexive relations are those in which any relata may or may not stand in the relation to itself. An example would be, “is liked by” as it is possible that I may like myself, and therefore stand in a reflexive relation to myself, but it may be true I do not like myself and therefore do not stand in such a reflexive relation to myself. Compresence, if “self-relating,” must be a reflexive term; clearly, it cannot be a irreflexive term since it is related to itself, but it must always be related to itself, and therefore cannot be a non-reflexive term. If it were a non-reflexive term, then there would always be the possibility that the compresence trope is not compresence with the tropes that it unifies, and hence a set of problems similar with it being outside of the bundle, examined above, would emerge.

There is an apparent difficulty, though, that makes this account of self-linking very different from that of the inherence relation of the Nyāya. The Nyāya were acutely aware, in part because of their opponents' attacks upon their metaphysical system, that a regress of “unity” or participation would emerge from their substrate theory in much the same way the problem emerges with states of affairs.¹⁷² To overcome this potential regress of relatedness, they posited a self-linking relation [*svarūpa-sambandha*] of their own. This is inherence [*samavāya*], and it bears some similarity to the idea of “instantiation” posited by Armstrong with some important differences.¹⁷³ Namely, under the Nyāya view, there is just one inherence. Every observation of inherence is an observation of a single numerically identical “relation;” inherence is an irreducible primitive, but is not multiply instantiated.

¹⁷² Stephen H. Phillips, “Gaṅgeśa on Inherence,” in *Classical Indian Metaphysics: Refutations of Realism and the Emergence of New Logic* (Motilal Banarsidass Publ., 1997), 230.

¹⁷³ For a parallel discussion from the realist perspective, on “instantiation,” see David M. Armstrong, *Universals and Scientific Realism Volume 1: Nominalism and Realism* (Cambridge University Press, 1980), 109.

It is a single thing, and has only one instance—the same instance everywhere it is observed. Hence, the inherence of an inherence instance is the observation of just one thing, the self-linking inherence. That is, given property a inheres in substrate F , one may ask by what does the inherence Θ_1 inhere? If pressed, one can say that the inherence Θ_1 inheres by virtue of inherence Θ_1 and not in virtue of some inherence Θ_2 that is, a second relation of inherence is not required as inherence is self-linking, and thus relates to itself. But given that there is only one numerically identical inherence, we also explain that property b inheres in substrate H in virtue of inherence Θ_1 .

Tropes are unique particulars, however, and therefore every bundle supposedly has a different compresent trope (and this difference becomes vital in individuating bundles). Ehring considers four objections, which again are not rehearsed here. What he fails to consider, though, perhaps because he does not pay sufficient attention to the logic of relations, is what makes a relation reflexive. Given that all compresent tropes are identical in all their intrinsic properties, even as unique particulars, he fails to realize that if their reflexivity arises from these intrinsic properties, it seems impossible to keep those identical intrinsic properties from relating the compresent tropes *to one another* (in the same way that “is the same weight as x ” relates all objects that are the same weight of x to x). Hence, we can generate the following argument:

Premise g1: Any trope of the same kind (set) are identical.

Premise g2: Anything that is identical must be identical in terms of its intrinsic properties.

Premise g3: The compresence relation is a trope.

Premise g4: Any compresence trope, c_1 , will be related to itself (it is reflexive).

Premise g5: Reflexive relations are reflexive because they relate their relata' “back” to the relata itself.

Premise g6: Reflexive relations relate their relata back to themselves through some

intrinsic property of the relation itself.

Premise g7: For any compresent trope, c_1 , it will have identical intrinsic properties with any other compresent trope, c_2 .

Conclusion g1: Therefore, compresent trope c_1 will be in a non-reflexive compresence relation with c_2 in that it will relate its intrinsic property to the shared intrinsic property of c_2 .

We cannot appeal to the extrinsic relations of the compresence trope (which would be the tropes that it relates aside from itself) to somehow avoid this problem, because first of all, relations are not reflexive because of their extrinsic properties,¹⁷⁴ and second, the very appeal to compresence is to explain how tropes are related to one another to form bundles. One cannot then suggest that the bundles are what explain compresence—it is a bad move in the game of metaphysics as it begs the question since the compresence relations are being appealed to in order to explain the bundles.

Consider the other example of a reflexive relation above, the “being the same weight as” relation. This relation is self-relating, reflexive, which means that for an x , x will bear this relation to itself. But x will also bear this relation non-reflexively to any other object that is the same weight as x . Now what is the nature of the compresence trope that allows it to enter into the compresence relation with other tropes (brown tropes, for example) as well as with itself? It seems for any relation to be reflexive, it is because it is relating some aspect of object x back to the same aspect of object x . Because tropes are identical to each other, all aspects of the tropes are identical to one another with the exclusion of extrinsic relations like spatiotemporal location.¹⁷⁵ Whatever intrinsic nature that compresent tropes have that relates them back to themselves also relates them back to anything with that identical nature: all other compresent tropes. This problem is shared with the reflexive relation of

¹⁷⁴ I could be mistaken about this, but have yet to come up with a reflexive relation that is reflexive because of the extrinsic properties of the relation itself.

¹⁷⁵ There are attempts to explain spatiotemporal locations as tropes. See Daniel Giberman, “Tropes in Space,” *Philosophical Studies* 167, no. 2 (2013): 453–72, <https://doi.org/10.1007/s11098-013-0108-8>.

equality given the identity of indiscernibles; if x and y are identical, then $x=y$ because such relations depend on the aspects or properties of their relata.

Hence, all compresence tropes are compresent with one another—in the same bundle. And given that all bundles are just those tropes that are compresent, then it appears that this line of thought collapses us into a “blobby” universe where there is only one compresence trope. Unlike inherence, which seemingly allows different different properties to inhere in different substrates, a single compresence trope gives us a single bundle and therefore a single object, which for Ehling will represent the mereological sum of all the properties in the universe. Must trope theorists who believe that relations are tropes and that a self-linking relation can rescue the idea of compresence accept what amounts to monism? If not, these theorists should pursue a strategy of ensuring a compresent trope can only be compresent with one compresence trope—itsself. What such a strategy would amount to is not clear.

Perhaps colocation is a restriction that could be introduced and something along the lines of, “Compresent tropes are reflexive, but may only enter into the relation of compresence only with collocated tropes.” Colocation has its own problems, although it seems to offer some promise. If we take bundle theory seriously, and I am a bundle of spatiotemporally located tropes, it seems that those tropes are distributed in certain ways across the area that I occupy, an area which is larger than a single point. Compresence was in part an explanation to explain why “I” end at my hand and do not extend to the table that my hand is resting on. The table is a different bundle, and therefore a different object, because my tropes are not compresent with it even though we are conjoined by touch. It seems I must already have a sense of what my bundle is composed of, and why the table is not part of it, to determine the space which I occupy and therefore determine what tropes are collocated. Compresence “aligns” tropes spatiotemporally so that I don't leave behind my tanned trope when I walk out of a room while taking my pudgy trope with me. Given a single compresence relation is distributed throughout my

area, and another throughout the table's area, and one is responsible for making tan and pudgy part of me, everywhere that is me is “within” this particular compresence relation and not within the compresence relation that forms the tables bundle. Therefore, that relation will be colocated in any part of the bundle with itself, but it will be not colocated with any other compresence trope such as that which unified the table into a bundle. If I cannot tell where I end and where the table begins, responds the compresence as self-linking theorist, that is an epistemological and not a metaphysical problem.

We might also suggest that compresence tropes can only enter into the compresence relation with another compresence relation iff the compresence relation has identical extrinsic properties as well as intrinsic properties. The problem is it can be true that compresence tropes can only enter into relations with colocated tropes, or those with exactly the same extrinsic properties, and monism could still be true: there still may be only one such trope. We have to have some account of the nature of the compresence relation that allows it both form discreet bundles by entering into compresence relations with other tropes, that allows it to be reflexive and take itself as one of its own relata yet restricts it into only entering reflexive relations only with itself and not with other tropes that are exactly identical to it in all of their intrinsic properties (and perhaps extrinsic properties as well). The burden is then on the “compresence as self-linking” theorist to explain in virtue of what it has these properties. To not is to treat compresence as a primitive, with spooky properties attributed to it simply to fulfill the theoretic needs of the trope theorist.

This difficulty seems to be a “chicken and egg” problem. Unless we can already make sense of what a bundle is, we cannot make sense of how to individuate compresence relations to ensure there is more than one such relation. And it seems we cannot make sense of what a bundle is without some appeal to understanding the compresence relation.

While sympathetic to the theorist's claim that this is just an epistemological and not a metaphysical issue, I am suspicious of that claim as it seems to beg the question. The suspicion does

not come from the relation as a trope *per se*, but instead the difficulties in ensuring that the relation behaves as the trope theorist needs it to behave. Of course, one might object that if a correct understanding of relations leads us monism, that is no fault of the theory. It does not appear, though, that a correct understanding of relations *outside* compresence would lead us to endorse monism. The inability of both monism and idealism to account for asymmetric relations led to Russell's rejection of both of them.¹⁷⁶ Perhaps because repeatability formed the core criteria for universals for Russell, this understanding of asymmetric relations led to Russell's embrace of realism instead. This illustration demonstrates that understanding relations lies at the core of metaphysics.

CONCLUSION AND EVALUATION

Realists' and trope theorists' approaches have typically taken for granted an understanding of properties as truthmakers for a wide range of predications, and from that understanding attempted to accommodate relations within their ontological system. The result has been ontological gerrymandering, the retreat to special primitive relations, or the denial of relations or certain types of relations. These problems have emerged when looking at realist and trope-theoretic systems that attempt to treat relations as essentially of the same kind as properties, either as universals or tropes. The motivation appears to be ontological economy, or the similarities observed between repeatable properties and repeatable relations, or between property instantiations and relation instantiations. In seeking ontological parsimony, however, many theorists have sacrificed ideological parsimony, and features such as a brute unifier relation or compresence relation have been posited because they are required for the rest of the theory to work rather than for any clear and sufficient reasons.

If we assume that similarity is a relation, as we have in chapter one, this problem is compounded. Since to be similar is to be similar in respect to something (most often a property), an

¹⁷⁶ Russell, "The Philosophy of Logical Atomism," 371.

adequate explanation of similarity will have something considerable to say about both relations, since similarity is assumed to be a relation, and similarity claims often invoke properties as part of the truthmakers for those claims. Another approach to this problem is to first ask, “What is the nature of relations,” and then once having reached a better understanding of relations, then ask the question, “What is the relationship between relations and properties.” This approach has the advantage that it does not privilege one set of relations, those related to properties, above other sets of relations we can imagine: the relations between particular objects, for example, or between relations themselves. A general theory of relations might in fact help illuminate these very issues that are so problematic when we begin with properties and property instantiation. Indeed, there are approaches to properties that considers them first and foremost relational. One such approach, resemblance nominalism, suggests that in fact all we need are relations, and particularly the similarity relation, to provide a complete and satisfactory accord of making true property predications. Structural realism, with its slogan, expressed by Karen Barad as “relata do not precede relations” is another such approach.¹⁷⁷ This core philosophical problem, the nature of relations, will be taken up in the following two chapters, and we shall see that indeed if we can get closer to solving the problem of relations, then we are in a better position to offer a solution that other central metaphysical problem of the metaphysics, the problem of similarity, or the “One Over Many Problem.”

¹⁷⁷ K. Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press, 2007), 334.

CHAPTER THREE: THE METAPHYSICAL BASIS OF ANALOGY II: THEORIES OF RELATIONS

“Philosophy has been a long time coming to grips with the category of relations It is not until the late nineteenth and twentieth century . . . that relations begin (not more than begin) to come into focus.”¹⁷⁸

THEORIES AND RAZOR BLADES

We need a workable theory of relations. As David Yates has written, “It is uncontroversial that there are a great many relational truths, but grounding such truths raises a host of philosophical problems.”¹⁷⁹ Although no theory of relations emerged from the predominantly negative project of the last chapter, we were able to identify some of the reasons why relations are invoked as explanations of “the way things are,” something about the nature of relations given those reasons, and some of the philosophical problems a theory of relations needs to avoid. We also saw some theories that failed to work. The failure primarily was seen in the sacrifice of ideological economy over ontological economy; in order to preserve fewer types of entities (in order to count relations as fundamentally of the same type as a monadic property), brute facts were invoked. In evoking primitives or brute facts, a philosopher says that some fact about the world lacks necessary and sufficient reasons or exists at the end of analysis. For an analysis which is supposed to provide, in the case of metaphysics, necessary and sufficient reasons for as many of the facts about the world as possible, the fewer number of primitives or brute facts a theory invokes is a strong reason for favoring it over theories with more primitives evoked.

That more ideologically severe theories are better might not ways be the case; we can imagine a theory that invokes one primitive. For example, we can imagine a profoundly superstitious individual

¹⁷⁸ Armstrong, *Universals: An Opinionated Introduction*, 29.

¹⁷⁹ Anna Marmodoro and David Yates, “Introduction: The Metaphysics of Relations,” in *The Metaphysics of Relations*, ed. Anna Marmodoro and David Yates, 1 edition (New York, NY: Oxford University Press, 2016), 1.

who attributes to a god all explanatory force and all abilities, even the ability to violate the principle of non-contradiction. When questioned about how such a god might have such powers, or why the individual thinks that a god does, s/he answers, “That is just the mystery of god.” Surely the theory might have ideological (and even ontological) economy, but it fails to have any explanatory force at all. So certainly ideological economy alone is not enough to judge a theory or judge its explanatory force. Instead, maybe we might think that as metaphysicians we should instead focus just on the explanatory force of a theory, and let the best explanation lead us to the ontology rather than having ontological principles lead us to the best explanation.

The dichotomy here, though, is false. We can no more give up the demand that we are frugal ontologists than the demand that our explanations actually *explain* things. Our ontological principles are not rules for *theories*, but rules for *theorizing*. They are tools that, as abstract as metaphysics can sometimes seem, keep us from “building castles in the sky.” The demand for ontological economy is actually just a demand that we do not “spackle” our theories by inventing entities to cover the gaps. The demand for ideological economy is the same demand in principle: your explanation should not be needlessly patched up with inexplicables. A frugal metaphysician such as myself dreams, of course, of a theory that meets both demands, perhaps a workable monism or a system with no brute facts at all. The first was the dream of Spinoza, and the second the dream of Leibniz, and hence the latter has lent his name to the theoretical principle dubbed “Leibniz’s Razor.”

Just because a theory free of any brute facts seems unobtainable does not mean such features should receive a *carte blanche* with just a caution to “keep it under control.” Rather, as the previous chapter attempted to begin illustrating, even if we believe we have reached something that in fact has no necessary and sufficient reasons, then we should have a very good explanation of *why* the fact has no necessary and sufficient reasons. In the last chapter, the principle that “Without this brute fact or primitive, the rest of the theory does not work” was rejected. Instead, and the criteria this chapter holds

itself to most of all in developing the outlines of a general theory of relations, is that the theory should tell us *why* such and such is a brute fact. We should be able to explain, echoing Wittgenstein, just how our spade hit this bedrock it has come to.¹⁸⁰ If we have those good reasons, we may have found a stud rather than spackling and have something upon which to hang the walls of our metaphysical project.

It sounds so simple, this framing houses metaphor, but it will not hold up if we push it too far (“So what, then, is the foundation?” and so on). The problem is that we find ourselves in the house already, fully built. Moreover, although “reduction” or “conceptual decomposition” sounds as if that is what we should be doing when we engage in analysis, they are sometimes little more practical than disassembling a house so you can build that very house. To discuss relations, we must take them for granted. Nowhere is this fact more clearly seen than when we reflect on the similarity relation, and how it must be presupposed for you to understand the words on the page, or categories, or repeatable concepts. This presupposition is both significant and inescapable. Part of what makes the project before us so difficult is this necessary “taking for granted.” Hence in trying to take up relationality as something that must be explained before any relation in particular, we must continuously fall back on taking a particular relation, the similarity relation, for granted to understand relationality in general. Moreover, this recourse is sure to be counted as a philosophical foul, a begging of the question, but unfortunately, it is unavoidable. The very idea of a type, of something that counts as a relation but does not count as a stone, for example, requires the idea of similarity and hence relationality. Later on, a justification will be offered: relations, and the similarity relation, are both necessary—they would be part of the furniture in any possible world—and they are fundamental, meaning they are not reducible to other (non-relational) features of the world and hence are ontologically primitive. They are bedrock.

We do not quite have the sort of spades we will need to reach this bedrock yet, however; to start

¹⁸⁰ L. Wittgenstein, P. M. S. Hacker, and J. Schulte, *Philosophical Investigations*, 4th edition (Singapore: Wiley, 2009), Paragraph 217.

digging, we must first attempt to provide a theory of relations. To do so, we must begin grappling with some of the most challenging elements of relations to explain. After reviewing an extremely truncated history of theorizing relations in the West and India to set the stage, and to which we will usefully apply in Chapter Five, we will leapfrog over centuries to move on to examine by far the most influential contemporary effort to provide a theory of relations, that put forth by Kit Fine in his paper, “Neutral Relations.”¹⁸¹ It will be argued that in fact no reduction of relations to non-relational entities is possible, and that in fact Fine's solution to the problem of “directionality” or asymmetric relations, the “antipositionalist view” and the accompanying “Substitution Model of Relations” in fact presupposes relations, specifically, the relation of similarity. Given that similarity is a relation, and antipositionalism is meant to explain relations, ultimately Fine is guilty of begging the question. In parallel to this examination of Fine's position, a second account, the “Similarity Model of Relations,” will be developed. The chapter concludes with a forceful argument that in fact there is a good reason for this Fine's fault: the similarity relation is a fundamental, irreducible element of the world, and as a relation, this means that relationality is likewise a fundamental element. Relationality and similarity are bedrock. In the chapter that follows, this conclusion will be challenged through difficulties arising from the epistemology of relations within Indian and Buddhist debates as well as Islamic jurisprudence.

RELATIONS IN ARISTOTLE

As we read in the previous chapter, it is Russell who is generally credited with observing that certain relations seemed to have a “direction” built into them and therefore would behave logically different from symmetric relations. Similarity lacks such directionality; it is a symmetric relation, meaning that in all cases if a is similar to b , then b is similar to a . Other relations, like “bigger than,” are not symmetric. Although Russell perhaps first saw the full implications of this difference, that

¹⁸¹ Kit Fine, “Neutral Relations,” *Philosophical Review*, 2000, 1–33.

some relations had directionality “built into” them had been long observed by Greek and Indian philosophers. For example, Aristotle, despite his possible belief that all relations were reducible to monadic properties, built in a sort of directionality into these “properties.”¹⁸² In §7 of *Categories*, Aristotle considers relatives, which are “all such things as are said to be just what they are, *of* or *than* other things, or in some other way *in relation to* something else [italics in original].”¹⁸³ Aristotle takes it to be a question of merit whether a substance can be spoken of as one of these relatives, and dismisses that individual substances, whether “wholes or parts” can be spoken of as relatives.¹⁸⁴ Aristotle observes that one may come to know a substance, but that this does not mean one immediately knows the relations it enters into.¹⁸⁵ Hence, relations do not seem to be substances.¹⁸⁶ What follows below is the “mainstream interpretation” of Aristotle's theory of relations, an interpretation which we will see has recently been challenged.

According to the mainstream interpretation, Aristotle seems to suggest that substances have relative properties, such as “being larger *than*” in which the predication only makes sense if we understand some other substance which serves as the correlate, for as Aristotle puts it, “all relatives are spoken of in relation to correlatives that reciprocate;” if we are ignorant of the correlate, we are ignorant of the relative.¹⁸⁷ Here Aristotle has identified a linguist use, our use of what the medievals termed “relative terms.”¹⁸⁸ Hence, we cannot know something is twice something else, or the slave of someone, without also knowing that something is half of something else, or that there is a master of

¹⁸² Marmodoro and Yates, “Introduction: The Metaphysics of Relations,” 4.

¹⁸³ Aristotle, “Categories,” in *The Complete Works of Aristotle*, ed. Jonathan Barnes, 6th edition, vol. 1, Bollingen Series LXXI 2 (Princeton, New Jersey: Princeton University Press, 1995), 6a37-38.

¹⁸⁴ Aristotle, 8a14-17.

¹⁸⁵ Aristotle, 8a37-8b21.

¹⁸⁶ This understanding of relations is actually remarkably close to the same reasoning, which we will examine more closely in the subsequent chapters, that leads the author of the *Nyāyasilāvatī* to reject that similarity (and, we might infer, other relative terms) are universals. He writes, “*ttaccaikavyaktigrahaṇasamayē agrhītamapi pratiyōgigrahē avagamyata iti siddhim*,” that is, “In understanding one individual the correlates [of that individual] are not also understood.” Vallabha, *Nyāyasilāvatī*. V.1:76.

¹⁸⁷ Aristotle, “Categories,” 6b27; 6b27-36.

¹⁸⁸ Jeffrey E. Brower, “Aristotelian vs Contemporary Perspectives on Relations,” in *The Metaphysics of Relations*, ed. Anna Marmodoro and David Yates, 1 edition (New York, NY: Oxford University Press, 2016), 39.

someone else. However, he also observes that these relatives likewise have a counter-correlated relative. So “double than” has a counter-correlate relative, “half than,” and the relative “slave of” means another relative exists, “master of.”¹⁸⁹ Each of these relatives has its own “direction.” Hence, the statement that “This mountain is larger than that mountain which is smaller” seems to be made true not by one relation holding between the two mountains, but to relative properties had by the individual mountains—one being “larger than” and the other being “smaller than.”¹⁹⁰ Hence, the direction of the relative, as well as the correlate, seems to be built into the property itself by Aristotle. He finds, though, that linguistic use is not a reliable guide because we can say things like “the hand *of*” and this would result in us considering a substance (the hand) as a relative. Because of the earlier stricture of how we understand substances—we do not need to know another substance in order to a present substance—this means the linguistic definition will fail as a metaphysical guide.

There is, however, another definition that is not so clearly given, and this may be part of the reason why many have taken the above interpretation to be accurate. Observing that language fails to serve as a guide about just what are relations, Aristotle notes we may be left with simply having to say that “those things are relatives for which *being is the same as being somehow related to something*” and while the linguistic analysis is helpful and indeed applies to all relatives (and problematically, to things which are not relatives), it fails to tell us what relatives actually are.

As Anna Marmorodoro and others have rightly observed, the first “linguistic attempt” and suggestion that all relations are indeed just “relative properties” is an example of what Russell critiques as the “monadistic theory” of relations noted in the previous chapter.¹⁹¹ In what can be understood as a reply to this perceived Aristotelian approach, Russell writes

¹⁸⁹ Aristotle, “Categories,” 17b15-17.

¹⁹⁰ Aristotle further observes also that not all relatives have this structure by which they imply some counter-correlate relative. He notes while these relatives with counter-correlate relatives are dependent on one another, in that one could not exist without necessarily implying the other, this does not seem to be the case of all relatives. For example, the relation of perception to perceptible does not, Aristotle argues, stand in this relation since perception need not exist for perceptibles to exist (Ibid., 7b35-8a12).

¹⁹¹ Marmorodoro and Yates, “Introduction: The Metaphysics of Relations,” 4.

In the first way of considering the matter, we have 'L is (greater than M)', the words in brackets being considered as an adjective of L. But when we examine this adjective it is at once evident that it is complex: it consists, at least, of the parts greater and M, and both these parts are essential. To say that L is greater does not at all convey our meaning, and it is highly probable that M is also greater. The supposed adjective of L involved some reference to M; but what can be meant by a reference the theory leaves unintelligible. An adjective involving a reference to M is plainly an adjective which is relative to M, and this is a merely a cumbersome way of describing a relation.¹⁹²

There seems to be no advantage, from Russell's perspective, for Aristotle's "relatives," and in subsequent chapters we will see how the use of relative properties renders all similarity claims trivially true, mere tautologies, and hence vacuous. We already saw in the last chapter a few of those reasons when we considered the problems of treating asymmetric relations as universals.

That this was actually Aristotle's or Aristotelians' views on relations, or the claim that the concern with relations is a recent one in the west, has recently come under criticism from Jeffrey Brower.¹⁹³ Brower suggests that even before Aristotle relations had been the subject of philosophical scrutiny, and certainly we find evidence of this in Plato at least.¹⁹⁴ Brower suggests that it is this second definition, with its certain vagueness, that was the definition actually taken up by later Aristotelians, and furthermore, relations continued to be treated as one of the irreducible categories of being, a point further emphasized by Sydney Penner.¹⁹⁵ Quoting from the late medieval philosopher Peter Auriol, Brower emphasizes that there continued to be a tradition, which saw itself as the intellectual

¹⁹² Russell, *The Principles of Mathematics*, §214.

¹⁹³ Brower, "Aristotelian vs Contemporary Perspectives on Relations."

-----, "Abelard's Theory of Relations: Reductionism and the Aristotelian Tradition," *The Review of Metaphysics* 51, no. 3 (1998): 605–31.

¹⁹⁴ Brower, "Abelard's Theory of Relations: Reductionism and the Aristotelian Tradition," 605.

It cannot be justifiably claimed that *The Phaedo*, as well as parts of *The Republic*, are not concerned with the nature of relations.

¹⁹⁵ Brower, "Aristotelian vs Contemporary Perspectives on Relations," 42.

Sydney Penner, "Why Do Medieval Philosophers Reject Polyadic Accidents?," in *The Metaphysics of Relations*, ed. Anna Marmodoro and David Yates, 1 edition (New York, NY: Oxford University Press, 2016), 55–79.

descendants of Aristotle, that believed that Aristotle's "relatives" were not "relative properties" but were relations proper.

In the third book of his commentary on the *Physics* . . . [Averroes] says that a relation is a disposition existing between two things. But even apart from him it is clear that fatherhood is conceived of as if it were a kind of thing standing between a father and his son. And the same is true with other relations.¹⁹⁶

So it seems that not all of those who saw themselves as the intellectual heirs of Aristotle believed that relations in fact reduced to relative properties, but rather, whatever relations were, they were ontologically distinct from their relata and the properties of their relata. While it would be beyond the present author to say much about the medieval work on relations that Brower, Penner, Mark Henninger¹⁹⁷ and others have explored, it seems sufficient to say that in fact there was a history of thinking about relations in the West, and also that the mainstream twentieth-century interpretation of Aristotle *a la* Russell might in fact not be accurate. What is more, it was a particular type of relation that philosophers struggled with from early on: asymmetric relations, or relations with "directionality," the very sorts of relations we saw gave realists and trope theorists (including Russell) so much trouble in the past chapter. Perhaps this is because relations were not treated as an "irreducible category of being?"

RELATIONS IN NYĀYA-VAIŚEṢIKA THOUGHT

Because the specifics of Nyāya-Vaiśeṣika theorizing about the relation of similarity are largely the focus of a following chapter, and as such their defense of relations will have to be elaborated on, only the contours of their theory of relations will be presented here. What we see, however, is that like Aristotle, the Nyāya hold that relations are irreducible, but in part this position emerged from their

¹⁹⁶ Brower, "Aristotelian vs Contemporary Perspectives on Relations," 42. Quoting from Mark G. Henninger, *Relations: Medieval Theories 1250-1325* (Oxford : New York: Oxford University Press, 1989).

¹⁹⁷ Henninger, *Relations*.

specific sorts of relations.

One the most general level, there are three types of things in the Nyāya-Vaiśeṣika ontology: substrates (*dharmin*), properties (*dharma*), and then relations (*sambandha*), and these are placed into appropriate ontological categories. The last is necessary for the first two to participate, for like Armstrong and other realists, the Nyāya-Vaiśeṣika are devoted to something that at least parallels states of affairs. For substrates to bear properties, there must be some relation between them, and this necessitates relations in this worldview.

Unlike Aristotle, who set relations aside as a category, we find relations in various categories proposed by the Nyāya-Vaiśeṣika school. In the six categories inherited from the Kannada's *Vaiśeṣikasūtra*, we find relations distributed among at least three of them.¹⁹⁸ Some of the problems we saw plaguing realist theories that consider relations as of fundamentally the same type as properties are avoided by the Nyāya-Vaiśeṣika by considering relations as different types of things than properties (*dharmadharmibheda*). So we have one category, that of inherence (*samavāya*) that is entirely made up of a relation. That is singular, as there is only one *samavāya* relation, as we saw in the last chapter, a way of stemming off the sort of regress arguments possible against other theories requiring a relation to relate a substance and property.¹⁹⁹ The category of qualities contains some relations like contact.

A relation is characterized as simply the entity that comes to be between or rests on two different substrates (*divsthaḥ sambandhaḥ*), such as contact. Spacial relations are useful as examples because they are perhaps more obvious than more theoretically complex relations such as inherence. When one's right and left hands touch, there is contact (*samyoga*). Where the two hands not both in contact, there would be no relation of contact. In fact, by just separating hands that were in contact a

¹⁹⁸ “*dharmavize.sa prasuutaat dravyagu.nakarmasaamaanya vize.sasamavaayaanaa.m padaarthaanaa.m saadharmyavaidharmyaabhyaa.m tattvaj~naanaanni.hzreyasam.*” *Vaiśeṣikasūtra* 1.1.4. The categories are *dravya* (substance), *guṇa* (quality), *karma* (activity or action), *sāmānya* (generality), *viśeṣa* (particularity) and *samavāya* (inherence). Later, *abhava* (absence) would also be added as a category.

¹⁹⁹ We also saw that this relation is self-linking (*svarūpa sambandha*), which, combined with its singular nature, avoids a regress, unlike self-linking relations that are many in nature.

second relation, disjunction, occurs.²⁰⁰ Yes, it would be improper to say that the relation is in either the right or the left hand. Hence, the relationship, *samyoga*, although understood as “resting between them” is distinct from either hand. Not all relationships, though, are so clearly between two distinct entities like contact, but these relations will have to be considered in the following chapters.

What emerges from these early considerations of the nature of relations by Aristotle and the Nyāya-Vaiśeṣika is an appreciation that relations should be treated on their own terms, and are not reducible to properties or substrates, the only other contenders for the Nyāya-Vaiśeṣika, nor are explained by Aristotle's remaining nine categories, although we might object relations are to be found in some of those, notably location, temporality, and affection.²⁰¹ The concerns with the seeming directionality of relations and the reduction of relations to relational properties (also considered by later Nyāya thinkers) are all issues that the contemporary ontologists continue to address. In what follows, we will turn our attention from the past to some of the most recent scholarship on the nature of relations and will find these concerns remain at the forefront. We will see a vindication of these thinkers' insights that relations are non-reducible. We will do this through a critical examination and evaluation of perhaps the most notable recent effort to reduce relations to non-relational entities, that of Kit Fine.

SUBSTITUTION MODEL OF RELATIONS: ANTIPOSITIONALISM

Kit Fine, in his article “Neutral Relations,” attempts to give an account of ordered relations that does not depend on positing an additional ontological category of relations.²⁰² Fine concerns himself with developing a metaphysical account to explain relations in general but takes asymmetric relations, what he calls “biased relations,” to be a special challenge. He develops his “antipositionalist” position in opposition to the “standard” view and to the “positionalist” view, both of which he sees as failing to

²⁰⁰ “*anyatarakarmaja ubhakarmaja.h sa.myogajazca sa.myoga.h | etena vibhaago vyaakhyaata.h* |” *Vaiśeṣikasūtra* 7.2.9

²⁰¹ Aristotle, “Categories,” (1b25-2a4).

²⁰² Fine, “Neutral Relations.”

provide the account demanded by asymmetric or “ordered” or “biased” relations.

The antipositionist view of Fine is not dependent on the standard view that, under Fine's presentation, sees relations as holding between items in a particular order as more or less a brute fact of relationality. Fine describes the standard view as follows:

According to the standard view, there is a certain notion "holding" or exemplification that holds between a given relation and its various relata. Thus we may say that the relation *loves* of the objects *a* and *b* in this sense just in case *a* loves *b*. It should be noted that the order of the relata is relevant to whether the relation holds. Thus whereas *loves* holds of Don Jose and Carmen, it does not hold of Carmen and Don.²⁰³

It is this ordering of relations that is of primary concern. So while it may be true that Anne loves Ollie (aLo) it may not be true that Ollie loves Anne (that is, \sim oLa). In considering how to explain the “ordering” of relations, one must also explain why certain relations—symmetric relations like similarity in particular—do not depend on such ordering. As an account that explains all relations in a single theoretical framework rather than separate account for symmetric and asymmetric relations is preferable given theoretical elegance, if an account can explain both biased (ordered) and unbiased (unordered) relations, it will be preferable.

Fine's proposal, the antipositionalist view, holds we understand relations by their similarity with one another, and that certain objects may fill certain relations, and their order is understood not by ontological entities that are slots, space holders or argument places, but instead simply by substitution: what other objects can stand in this relation.²⁰⁴ An analogous way to think of these relations are unsaturated two- or *n*-place predicates, which, when filled, must be true (and hence not all entities will be eligible to fill them, or fill particular places in them). There are two related mysteries with this final account: first, how relations are to be identified through another relation—that of similarity; and

²⁰³ Fine, 2.

²⁰⁴ Fine, 16.

second, why substitution provides the best account of explaining the order of relations without resort to biased relations. I suggest that the motivation for both of these solutions is the ontological economy of the frugal metaphysician. The hope is armed with only substitution we can provide an account of all relations, biased and unbiased, including similarity.

THE PROBLEM TO BE SOLVED

Fine holds that there are two principles that must be explained in any account of relations: identity, which holds that “any completion of a relation is identical to the completion of its converse,” and second, uniqueness, that holds that “no complex is the completion of two distinct relations.”²⁰⁵ A completion is a completed relation. Together, however, these form a contradiction. Consider a completion of the asymmetric relation R, for example, “2 is less than 3.” Now by Identity, “2 is less than 3” is also a completion of a converse of R, S. By uniqueness, these two relations are the same. Given that R is asymmetric, however, they are distinct and the relationships R and S are not identical.²⁰⁶ Uniqueness is a challenge of identifying different relations: if a single completion exemplifies them, and there are no separable ontological entities that are relations, only the complex, then how are multiple relations to be identified on the basis of a single complex? Taken together identity and uniqueness form a contradiction when considering symmetrical relations as a single complex is always the completion of both the relation and its converse relation and therefore violates uniqueness given identity (consider how the cup on a table is a completion of both the “above” and the “under” relations). Therefore, an adequate theory of relations must entail a solution to this contradiction, and as the standard account fails to resolve this contradiction, it is inadequate.²⁰⁷

THE STANDARD VIEW

²⁰⁵ Fine, 5.

²⁰⁶ Fine, 5.

²⁰⁷ Fine, 7.

The standard view simply holds that since relations must relate, they must relate in some order. This order of relating reveals both the relation as well as what objects can stand in that relation. Fine denies that standard view is adequate to explain this conundrum above. This is because, given a single state of affairs, the same objects may complete both a relation (aLo) and its converse (oLa), although only one relation may actually be realized. Given the same state of affairs (the set of two objects), one must invoke some notion other than the set of two objects to explain why the first relation is exemplified but not its converse. For example, we may have two objects, Allie and Oliver, but the relation of love may only hold in such a way that Allie is the beloved of Oliver, but not in such a way that Oliver is the beloved of Allie. Fine denies that the standard view can give an account of why both the relation and its converse are not realized. This is the problem of converse relations which any adequate theory of relations must address. While there are avenues the standard view may take, depending on whether the standard view wishes to deny either identity or uniqueness, both approaches seem inadequate to explain two problems: why aLo is true but not its converse, and second, how to distinguish aLo from any other relation exemplified by Anne and Ollie, such as “Anne is beside Ollie” (aBo, and, since it is a symmetric relation, oBa). A revised position, the positionalist account, seeks to solve the problem by suggesting relations have ontological prior space holders or “argument-places” which only certain objects “fit into.”

THE POSITIONALIST VIEW

The positionalist view comes to the defense of this naïve standard view. The positionalist account, as developed by Fine, holds that there exists some space holder in relations (a space holder for “is beloved” and “loves”), an “argument-place” that is ontologically prior to the objects that can fill such space holders but impute no other qualities (aside from “can fit into this placeholder”) to the

objects that can fill them.²⁰⁸ There are “argument-places.” Argument-places can only be filled by certain objects in certain relations—only certain objects will “fit” into the relation's argument-places much in the same way that only square blocks will fit the square slots in baby toys, while spheres will only fit into the circular slots. The relation itself is then understood simply by what space holders it has.²⁰⁹ The relation of maternity, for example, is just understood in terms of having the slots “mother of” and “child of,” or the relation of slavery as “master of” and “slave of.” In some ways, the positionalist account comes close to what we are observed in Aristotle's *Categories*.

While the position seems attractive at first glance, further complications made it less tenable. First, one must stipulate the mysterious notion of “fit” that relates objects to their space holders in the relations that they enter into, and second, why some resulting relations are in ordered relations, and other relations are not. Finally, an objection not considered by Fine but critical to the problem of individuation of relations is how are distinct relations in which the objects “fit” into the same “slots” to be distinguished from one another. For example, if Ollie has now developed his own amatory attraction to Anne, then aLo and oLa are both the case. How is this to be distinguished now from Ollie being beside Anne (oBa and aBo) if relations are only known via how objects “drop into” them? With only the primitive notion of fit, it seems we are not able to individuate relations. Particularly troubling are relations that are always concurrent with each other or relations which are nested inside of each other (for example, object x is not touching object y , and, object x is spatially distinct from object y ; b is a relative of c , and, c is the daughter of b). Given the ideological extravagance of this primitive notion of fit fails to allow us to differentiate relations with identical relata, which we assume a theory of relations should be able to do, the sacrifice of ideological economy is too great given it does not serve the ontological duties we hoped that it would.

²⁰⁸ Fine, 10.

²⁰⁹ Fine, 10–11.

THE ANTIPOSITIONALIST VIEW

Fine's solution to the problem of individuation is elaborated on in his antipositionalist account. What makes one *relation* the same as another (such as the *loving* relation in such cases as Ollie loving Anne, and, Meas loving Seyha) is the fact that they resemble one another. Rather than assign relations argument-places as in the positionalist account, the antipositionalist account takes relations to be multivalued operations, and hence the outcome is multiple states by which the relation could be completed by different objects.²¹⁰ What constitutes resemblance is that “one state is the completion of a relation in the same manner as another.”²¹¹ Two relations are the *same* relation if they resemble each other, resemblance being that they are “completed in the same manner.”²¹² Fine provided a formal definition of a relation completed in the same manner as another:

. . . this is a relation that holds between a state s and its \mathbf{m} constituents a_1, a_2, \dots, a_n , on the one side, and a state t and its \mathbf{m} constituents b_1, b_2, \dots, b_n on the other, just in case s is formed from a given relation R and the relata a_1, a_2, \dots, a_n in the same way in which t is formed from R and the relata b_1, b_2, \dots, b_n . Thus, each of a_1, a_2, \dots, a_n will, from an intuitive point of view, occupy the same positions in s as b_1, b_2, \dots, b_n occupy in t , the constituents on each side will similarly "configured" in their respective states.²¹³

Hence, if Deepa is the left of Wong (dLf), and Hafthor is to the left of Beth (hLb), we can identify the relation as the same since Deepa and Hafthor will both occupy the relational position of “left” and Wong and Beth will occupy the relational position of “right.” This “antipositionalism” will also apply to relations which have a converse relation but in which the converse relation may not hold, as well as relations that do not have a converse relation. That is, we understand “2 is less than 3” and “3 is greater than 2” as different relations because in the first, 3 cannot occupy the position of “less than” when 2

²¹⁰ Fine, 19.

²¹¹ Fine, 20.

²¹² Fine, 20.

²¹³ Fine, 20.

occupies the “greater than” position.

However, this idea of “completed in the same manner,” which I will refer to simply as “similarity” or “resemblance” in what follows, is itself a relation that holds between relations. Hence, in order to individuate relations, we must first have a working theory of relations! Then, through the similarity relations between relations, we can sort them out into different relations, from “beside,” “loves,” to “less than.” The idea of relations holding between relations has, however, a sketchy position in the history of philosophy because of the lurking specter of a regress. This concern will be addressed in the following section. This potential problem will be set aside for the moment.

To know such relations (for individuating relations is as surely an epistemic as well as an ontological issue), Fine performs a thoroughly Platonic slight of hand. Just as we saw in Chapter One with Plato suggesting we need a paradigm to understand paradigms (and therefore assuming paradigmatic reasoning), Fine suggests that we can understand and individuate relations through paradigmatic (hence analogical and relational) reasoning. Fine writes:

Suppose, for example, that we wish to say that the amatory relation holds of Anthony and Cleopatra in the manner characteristic of *loving* rather than *being loved*. Then using t_0 above as an exemplar, we may say instead that there is an (actual) state s that is a completion by Anthony and Cleopatra in the same manner in which t_0 is a completion of Abelard and Eloise.²¹⁴

There is much that we could bring out here—that our ability to individuate relations under this view depends on our ability to recognize when a relation holds and therefore to recognize other places or times at which it holds through recognizing co-mannered relations. Most critically, perhaps, is the use of analogical reasoning—the use of an exemplar of a relation to recognize the same relation holding at other times and places. This recognition further depends on our

²¹⁴ Fine, 21.

ability to recognize a second relation (besides “loving” or “being loved”) which is similarity. Some of these issues will be addressed at length in what follows, and again, must be set aside from the moment.

Fine considers three objections to his antipositionalist account, but only the third need to concern us here. That is the objection that the notion of co-mannered completion is taken for granted when it should be explained on other terms, in part because co-mannered completion seems just as mysterious as argument-places or the brute nature of relations under the standard view.²¹⁵ It also might fall prey to the objection that it is relational itself, and therefore fails to provide an account of relations since it assumed relations. Fine attempts to address this objection through the notion of substitution (henceforth, Substitution will be used to refer to Fine's theoretical concept, and substitution to refer to substitution in general).²¹⁶

SUBSTITUTION

Fine assumes that we have a general, non-domain-specific understanding of substitution and as such the antipositionalist account can call upon substitution as a more primitive notion to explain relationality and the individuation of relations through similarity. Therefore, we can understand co-mannered relations simply in terms of substitution instances.

For to say that s is a completion of a relation R by a_1, a_2, \dots, a_n , in the same manner that t is a completion of R by b_1, b_2, \dots, b_n is simply to say that s is a completion of R a_1, a_2, \dots, a_n that results from simultaneously substituting a_1, a_2, \dots, a_n for b_1, b_2, \dots, b_n in t (and vice versa).²¹⁷

Even though substitution is a general concept, there comes the objection that even though it is general, *there are always domain-specific structures that explain the result of any substitution instance.* For

²¹⁵ Fine, 25.

²¹⁶ Fine, 25–28.

²¹⁷ Fine, 25–26.

example, if I were changing the lights at a stop light, I would substitute one red light for another, and there is a structure that explains why substituting a green light for the red and yellow lights would be an improper substitution. The convention of traffic rules and signs forms a domain-specific structure that determines what can be substitutions for what. In what follows and in the next chapter, it will be argued that such substitution instances are determined by similarity in the relevant respects. The objection, here, however, is that even though substitution is a general notion, there are still structural considerations for any specific application of substitution.

There are at least two possible responses that Fine considers. The first is simply to take substitution as a primitive notion.²¹⁸ The second is to consider substitution not as primitive but in terms of a structural operation. The problem with the latter account is, however, that it seems structural operations can also be given in terms of substitution, just as substitution can be given in terms of structural operations.²¹⁹ As Fine writes, “the mere fact that there cannot be substitution without structure does not mean that it is by reference to the structure that the possibility of substitution should be explained.”²²⁰ Fine simply denies that this is an actual problem.²²¹ Therefore, substitution provides us with a model of representing and understanding relations that can make sense of both biased or asymmetric relations as well as symmetrical relations without a commitment to an ontology of argument-places or placeholders nor assigns relations any mysterious directionality. It can provide an account of positions by referring to co-positions: for example, b_2 can be substituted for a_2 and therefore can be considered co-positional, and abstracting this idea of co-positional we can do all the work of argument places that the positionalist account can do.²²²

²¹⁸ Fine, 27.

²¹⁹ Fine, 27.

²²⁰ Fine, 28.

²²¹ I am unsure of just how to interpret Fine's terse statement here. If he is talking about the mere possibility of substitution, as a concept or operation, without reference to structure, then likely there is no reason to object. However, in any actual substitution, it does seem arguable, at least, that in fact ontological or meaning structures provide the very possibility of any specific substitution as counting as successful (e.g., replacing a red traffic light with a green traffic light fails to count as a successful substitution).

²²² Fine, “Neutral Relations,” 32.

What we get, then, is a picture that depends on recognizing a relation as holding (Ollie loves Anne), and recognizing that because we could substitute Anthony and Cleopatra for Ollie and Anne and still have the same relation, that we, in fact, have a relation, *loves*. Moreover, this is all we need. We do not need, claims Fine, any understanding beyond recognizing what substitution instances preserve the state of the relation holding, recognizing that the relation can be completed in multiple ways by multiple objects. Unfortunately, Fine is too optimistic about the ease of explanation antipositionalism and Substitution seems to offer.

There are several problems lurking in the shadows here as has been noted in the preceding paragraphs. In what follows, these problems that are not addressed by Fine are taken up. While ultimately Fine's explanation of relations is unsatisfactory, because it depends critically on already having an understanding of a particular relation and therefore attempts to allow the theory to lift itself up by its own bootstrings, this is because a theory of relations necessarily must do so. Therefore, first Fine's theory will be defended from accusations that relations among relations, particularly the similarity relation needed to identify co-mannered relations, results in a regress of relations (Bradley-type regresses) or a regress of resemblance (Russell's Regress). Along the way, the objection that unique relations with a single instantiation are impossible to recognize since they would have no other substitution instances will be addressed and overcome. Then we come to the heart of the issue, and that is the notion of substitution. Fine's antipositionalism fails only because it does not go deep enough, not because it failed to reduce relations to non-relational concepts. It is argued that Substitution (big S) fails to adequately explain relationality because substitution (little s) depends on relationality, specifically on the relation of similarity. Therefore, Fine is guilty of begging the question.

An alternative account of individuating and understanding relations will be given then in terms of similarity. This will not be a reduction of relations, however, as similarity is a relation. However, *similarity is a more fundamental concept than substitution*, and an algebraic proof will be given that

substitution can be accounted for in terms of similarity but similarity cannot be accounted for in terms of substitution. This will be accomplished by demonstrating that identity and similarity can be given in terms of one another, but substitution can be given in terms of identity but identity cannot be given in terms of substitution. At that point, we will have the spade we need to hit bedrock. We will have the foundation upon which to build our house.

CHAPTER FOUR: THE METAPHYSICAL BASIS OF ANALOGY III: THEORIES OF RELATIONS CONTINUED

In the previous chapter, we considered three approaches to relations; from our brief consideration, we saw that both Aristotle and early Nyāya-Vaiśeṣika thinkers thought of relations as fundamentally irreducible types of ontological entities although we did not dive into the details of their respective theories. We also considered the fairly contemporary and very influential theory of Kit Fine, who proposed that relations are best understood as substitution instances individuated by their similarity with other substitution instances.²²³ Fine does not propose his work necessarily as a reduction of relations, and in fact the word “reduction” never appears, but he believes it offers a general theory of relations²²⁴ However, it is difficult to understand why he then proposed that substitution is a more primitive notion than relating or how like-mannered relations are available to us as a tool for understanding relationality and individuating relations. The answer dawns upon us when we realize Fine takes for granted that we have a clear understanding of just what relations and relating are; the puzzle is only why some relations have what Russell called “directionality” seemingly build into them and why some do not.

This chapter, through the vehicle of both a defense and critique of Fine's work on relations, develops a working theory of relations that can serve to gird a theory of analogical reasoning, the principle reason for this long foray into relations. As will be recalled from the last chapter, in his antipositionalist account, Fine takes substitution to be a more basic and ready-at-hand concept than relations, and therefore analyzes relations as substitution instances. What makes a relation the same despite different particulars entering into the relation is that such complexes are similar—they are “co-mannered relations.”

²²³ Fine, “Neutral Relations.”

²²⁴ Fine.

Theoreticians working on relations have long been suspect of relations holding between relations, or similarity as a tool of individuation. These are most powerfully expressed in two regress arguments, one associated with Francis Herbert Bradley and the second with Bertrand Russell. In defending the antipositionalist account from these two regress arguments, by showing either they fail to apply or are in fact virtuous rather than vicious, we gain a deeper understanding of antipositionalism than is available from Fine's account alone. In doing so, the insights gained from the previous two chapters must be marshaled, and the problems associated with taking relations as universals or tropes must be avoided as well as blundering into nominalist mousetraps. With a more robust and charitable reading of Fine, we are also in a better position to observe how much work the primitive notion of substitution and “co-mannered relations” are doing. This position allows us, in turn, to develop a more sophisticated critique of the antipositionalist account by demonstrating that it is, in fact, a resemblance nominalist theory of relations and as such is subject to many of the same critiques that can be leveled at resemblance nominalist theories of properties.

By examining the analogous relation of set-building (analogous to relation completing), we can see that in fact bare substitution fails to individuate relations and therefore preserve identity. By examining the algebraic operations of substitution, we can further demonstrate that substitution is a reducible concept, and a more primitive notion is available to us and in fact should be employed:²²⁵ identity. Although more primitive than substitution, in that all accounts of substitution may be given in terms of identity but not *vice versa*, identity itself is a complex notion and demonstrably inseparable from two other notions: equality and similarity. Here is truly bedrock. What this finding entails is that we must take similarity for granted (if we are to grant such seeming truisms like $1=1$ or $2=1+1$); once having similarity as a given concept we can construct substitution instances and understand “co-mannered relations” in such a way that preserves both uniqueness and identity. The metaphysics of

²²⁵ Although no attempt is taken to demonstrate it here, these claims from algebraic operations should also apply to first-order logic.

relations will be completed as a workable theory, but the epistemological problems—of knowing relations—and the normative consequences of such knowledge—will still await us in the subsequent chapters where attacks on both relations as irreducible and analogy as means of knowing will be explored in detail.

INDIVIDUATION BY SIMILARITY AND BRADLEY'S AND RUSSELL'S REGRESSES

The use of similarity (co-mannered relations) immediately introduces a number of possible problems that must be overcome. First, does the introduction of a relation of resemblance to individuate relations risk a regress *a la* Bradley's Regress as “co-mannered” is a relation of resemblance holding between relational complexes? This is particularly important given the ordered relations that antipositionalism proposed to *individuate* relations. Second, does Russell's Regress of Resemblance, elaborated as a critique of resemblance nominalist theories, apply to a similar theory not of properties but of relations and the use of resemblance between entities as a way to individuate them without reifying types? And finally, does a theory of individuation of relations in terms of similarity (to other relations) fail to account for the individuation of relations with a single completion instance, that is, relations with a single instantiation? For if to individuate a relation is to recognize that relation's similarity with another relation, does that not mean in principle relations with single exemplifications cannot be recognized?

The first problem should already be familiar to us from the previous chapters. Bradley asked the question of what makes *a* related to *b* in aRb ? For it is not enough that there is an object *a*, an object *b*, and a relation *R* for all of these could exist independently of one another. Bradley suggested that there must be some third relation, an instantiation relation, *I*, that relates *R* to *a* and *b*. But, so the regress goes, must there not be some other instantiation relation *O* to relate *I* to the relation *R* to relate it? Bradley writes,

There is a relation C, in which A and B stand; it appears with both of them. But here again we have made no progress. The relation C has been admitted different from A and B and is no longer predicated of them. Something, however, seems to be said of this relation C, and said, again, of A and B. And this something is not to be the ascription of one to the other. If so, it would appear to be another relation, D, in which C, on one side, and on the other side, A and B, stand. But such a makeshift leads at one to the infinite process. A new relation, D, must be predicated . . . and hence we must have recourse to a fresh relation, E, which comes between D and whatever had come before.²²⁶

And Phillip Keller has helpfully described the regress as follows:

If exemplification were a relation between, say, a particular *a* and a property F, and hence a universal, a further relation would be needed to connect *a*, F and the exemplification relation An ontologically and [explanatory] vicious regress would follow.²²⁷

A similar sort of regress can be posed to the account of individuation of relations through similarity where individuation stands in the same problematic relation as instantiation in Bradley's work and which we spent some much time ruminating over in Chapter Two. The regress introduces an order of relations problem given that there are second-order relations that are used to identify first-order relations. The question is, then, is not a third-order relation needed to identify the second-order relation, and then a fourth-ordered relation to identify the third-order relation, and so on *ad infinitum*.

²²⁶ Francis Herbert Bradley, *Appearance and Reality: A Metaphysical Essay* (Macmillan, 1899), 17–18.

²²⁷ Philipp Keller, "Why Bradley's Regress Is Harmless," 2008, 1. Stewart Candlish and Pierfrancesco Basile have suggested that there are some exegetical problems with this sort of formulation of the regress, and that it is better understood as a regress that begins with the relational nature of the terms themselves and suggest that the regress runs in the opposite direction--an infinite regress in which each term is broken up into two related terms, which are then subsequently broken up in two related terms, and so on. While they are absolutely correct in identifying this regress of term-relationality, in giving his analysis Bradley does seem to propose the regress most associated with him and the one that concerns the text quoted above. See: "Francis Herbert Bradley (Stanford Encyclopedia of Philosophy)," accessed September 10, 2014, <http://plato.stanford.edu/entries/bradley/>.

Here is an illustration of the problem. For us to individuate relation L (say, as the loving relation) we need to recognize the relation holding in other instances, say instances t_0 and t_1 . That is, we recognize relations as being co-mannered and hence of the same relation. I recognize another relation, P, by the same means (let us say, “of equal weight to”) through complexes c_0 and c_1 . I can differentiate and therefore individuate relation L from relation P by recognizing P is not co-mannered with L—what I can substitute into relational complexes t_0 and t_1 that allow me to individuate L cannot be substituted into P, so P is not co-mannered and hence is a different relation since not everyone who loves one another happens to weigh the same as one another.

It is the recognition of a relation above and beyond the complexes t_0 and t_1 that allow me to recognize it as co-mannered—that t_0 and t_1 are similar to one another in the proper respect (of being co-mannered) just as c_0 and c_1 are co-mannered. What makes the individual complexes co-mannered is the similarity of the relations that hold between them “internally,”²²⁸ but it is the relations between these groups of complexes that allow us to recognize them as “co-mannered” but through different internal relations. Now, for me to recognize a relation above and beyond the relation holding between the complexes t_0 and t_1 , that relation must also be individuated. So I must recognize the relation that holds between t_0 and t_1 which allows me to recognize relation L is also the relation that holds between c_0 and c_1 that allows me to recognize relation P (the relation of being co-mannered). Let us call this relation S^1 , the similarity in relevant respects necessary to identify co-mannered relations.

For me to recognize the relation S^1 that holds between relations L and P, I must be able to individuate it. Therefore, I must be able to understand the complexes now composed of relations L and P are similar to the complexes of relations Q and R in that they are co-mannered in the way L and P are respectively. Therefore, in order to recognize the relation that holds between the relations I must be able to recognize this relation as holding between relations, and so it seems I must introduce a relation

²²⁸ For example, between t_0 and t_1 and not c_0 and c_1 .

of S^2 , the similarity relation in relevant respects necessary to identify the co-mannered relations between co-mannered relations. And so on

One answer, and one we do not have the right to make yet, would be to take similarity as primitive. This move immediately curtails the application of the regress to the order of relations problem in antipositionalism. This answer would assume, though, too much at this point and violate the principles of ideological economy as set out in the previous chapter.s We are not required to make that move, however, as substitution and co-mannered relations have the resources to show in fact the regress is toothless.

We can hold that similarity relations are similar, and that those second-order similarity relations are similar, and so on, but this regress is not vicious as no higher-order account is needed to explain the similarity relation or individuate it, nor is any additional information added at any point of the regress and hence it is vacuous. A similarity relation between two sets of complexes can be identified as a similarity relation because the two relations are similar. That this relation among relations is also a similarity relation can be individuated by reference to another relation holding between two similarity relations, but this may be unnecessary. First, the similarity relations are not confined to always hold between relations in a single order lower than themselves. The similarity relation holding between sets of relations are similar to one another and individuated; however, each individual similarity relation is similar to any other similarity relation no matter the order of the relation and in precisely the same way (see Figure 1); hence, a third order similarity has the same similarity relation with a first order similarity or any n^{th} ordered similarity relation. They are not, in fact, different *types* of relations, but instead simply another example of the multivalued operation of antipositionalist completion which results in a plurality of states of completion. Multiple objects may complete a relation, and it just so turns out that those object may be other relations. Relations may be of types, and individual relations

may be tokens of those types.²²⁹

This is not identical to the concept we considered in Chapter Two, *samavāya*, which was described as a self-linking relation, a *svarūpa-sambandha*, although similarity is self-linking. That is, all similarity relations will bear their self-same relation to all other similarity relations, and as we will see, given that identity and equivalence can be given in terms of similarity, it would seem every object bears a reflexive similarity relation to itself, including, if relations can serve as *relata*, similarity relations themselves. Unlike the relation of *samavāya*, similarity relations seem manifold. If they were not, and there was simply *one* similarity relation, it seems then everything would be similar to everything else in the same respects.²³⁰ Moreover, the utility of co-mannered relations is the ability to sort relations and individuate relations. Unlike substances and universals, which particulars and properties can be used to sort out blue pots from red balls, relations are individuated by completions, and identical completions may exemplify more than one relation (for example, Meas and Seyha might exemplify the loving relation and the adjacent relation simultaneously). This results from, seemingly, the ability to identify multiple similarity relations holding between single complexes (and hence multiple other types of relations). So while similarity relations seem to be of a single type, it would be too hasty to conclude that like *samavāya* the similarity relation is a single token as well.

We may even sort different similarity relations into different types of similarity relations depending on the respects which they are similar. It is in ways they are dissimilar that also provides this sorting criteria. Because it is not only the complexes that complete relations, but substitution instances as well, the differences between *how* complexes were formed (what we might think of as the operation of a relation) will determine what the relations are. That relation's similarity in terms of substitution instances that preserve the relation is what allows us to recognize it as a type of relation.

²²⁹ It is worth pointing out that this claim need not endorse or reify types. The procedure given above should set well with many realists, trope theorists, as with resemblance or set nominalists. It is also worth emphasizing the procedural nature of the explanation. This is how we determine whether or not two sets of items are related to one another in the same way—not what sort of entity that relation is (although this begs the question—the type of entity is a *relation*).

²³⁰ This will be explored within the South Asian philosophical debates in the next chapter.

This “sorting” of relations can occur at any order of operation, but the similarity by which a relation is a similarity relation will exist between similarity relations no matter what order of operation. That is to say, things may be similar in different ways, but the relation we use to determine X is a similarity relation and Y is a similarity relation will be a similarity relation *simpliciter*.

So individuation through recognizing co-mannered relations or similarity does not confront us with the same problems of instantiation that Bradley drew our attention to. While we can provide a regress in terms of similarity relations holding between higher and higher orders of properties, it is no more damaging than the truth-regress that Keller and others have drawn our attention to that moves from “p” to “it is true that p” and then to “it is true that it is true that p” and so on ad infinitum.²³¹ Just as truth is truth no matter what order of truth in the truth-regress, similarity is similarity not matter what the order of the relation.

A further reason, and one explored in what follows, is that similarity relations are *reflexive*: they are, to use the language of Nyāyikas, *svarūpa*. That is, the similarity relation is similar to itself. The implications for a Bradley-type regress should be clear: a single similarity relation can generate a second relation to which it will be similar in being a similarity relation itself. Given, now, we have two similarity relations that are similar to one another, we have enough to individuate the relationship of similarity. It is any other relation that shares a similarity relation with any other similarity relation. More will be said on this topic in the discussion of identity, equality, and substitution as it relates to similarity relations.

²³¹ Keller, “Why Bradley’s Regress Is Harmless,” 1.

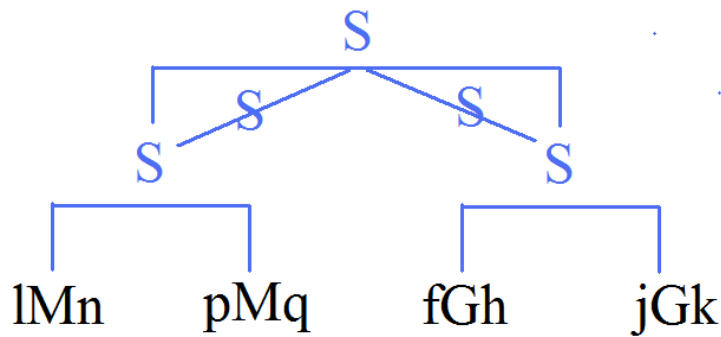


Figure One: The similarity relation holding between sets of relations are similar to one another and individuated with similarity relations being indicated by blue lines; however, each individual similarity relation is similar to any other similarity relation no matter the order of the relation.

A second possible regress is that formulated by Russell in an attempt to demonstrate that resemblance nominalist theories of properties were untenable because they all must propose a universal of resemblance to avoid a regress. Before providing Russell's statement of the regress, it is important to note that it is a critique of property nominalism and not of individuation of relations. It clearly has applicability to a theory that attempts to do the same sort of work for relations through resemblance as resemblance nominalism wishes to do for properties. Therefore, it is worth considering the regress, its applicability to the theory of individuation under consideration, and possible responses to it.²³² The problem confronting the antipositionalist is not the same as that confronting the resemblance nominalists at least at first blush. As we have already seen in the past chapter, however, the relational quality of resemblance is a very good reason to think it is *not* a universal, and hence to think that all other relations are not universals. But this conclusion does not work for the antipositionalist account.

²³² To restate Russell, "If we wish to avoid the universals whiteness and triangularity, we shall choose some particular patch of white or some particular triangle, and say that anything is white or a triangle if it has the right sort of resemblance to our chosen particular. But then the resemblance required will have to be a universal. Since there are many white things, the resemblance must hold between many pairs of particular white things; and this is the characteristic of a universal. It will be useless to say that there is a different resemblance for each pair, for then we shall have to say that these resemblances resemble each other, and thus at last we shall be forced to admit resemblance as a universal. The relation of resemblance, therefore, must be a true universal. And having being forced to admit this universal, we find that it is no longer worth while to invent difficult and implausible theories to avoid the admission of such universals as whiteness and triangularity." Russell, "The World of Universals," 48.

Rodriguez-Pereyra considered Russell's Regress as he develops a nominalistic theory of properties *contra* universals.²³³ He sees the regress as critically concerned with the following questions: given three white objects, is the resemblance relations holding between those objects the same relation, or is it a particular relation? If it is a particular relation, then do we say it is “the same” relation (of all being white) because the relations of similarity holding between those objects are similar to one another? And if it is a particular relation, does not that relation of similarity then require an additional relation of similarity for it to be the same in that it is a relation of similarity?²³⁴ As stated by Rodriguez-Pereyra, Russell's Regress then has clear implications on our theory of individuation by similarity relations. However, our answer to the Bradley-type regress will apply here as well.

The regress depends on a number of assumptions. The first, which Rodriguez-Pereyra draws our attention to, is the notion that the resemblance relation is a “thing” so there is either some particular, “the resemblance between *a* and *b*” aside from just *a* and *b*, or that there is just a resemblance between *a* and *b*, not some entity, universal or otherwise.²³⁵ If there is the first, then some account for the resemblance between particular similarities is needed to explain why the set of particular similarities between the three white objects are all considered as the same *type* of similarity—similar in that they are white. If there are merely resemblances between objects, then there is no regress; that is to say, the three objects are similar, *simpliciter*. To ask if these resemblances resemble one another is to beg the question and reify the resemblance.

It is unclear that this response is not one readily available to the antipositionalists, however, as clearly the antipositionalist must hold that resemblance relations between relations are possible. Relations must be “things” because they can form complexes—if not, the antipositionalist account will, it will be shown, collapse in upon itself.²³⁶ But since all relations are understood in terms of their

²³³ Gonzalo Rodriguez-Pereyra, “Resemblance Nominalism and Russell’s Regress,” *Australasian Journal of Philosophy* 79, no. 3 (2001): 395–408.

²³⁴ Rodriguez-Pereyra, 399.

²³⁵ Fine's theory attempts to avoid this very claim by only invoking complexes and substitution instances

²³⁶ The answer to the Bradley-type regress should make it clear; individuation of relations requires relations between

resemblance to one another, the antipositionalist is giving a fairly similar account as the resemblance nominalist.

For the antipositionalist, it is true that relations are individuated in terms of their resemblance. However, this resemblance is not constructed in terms of relations-as-such since relations are ultimately to be reduced to their relata and then are to be understood in terms of “co-mannered relations.” Like the resemblance nominalist, the antipositionalist is committed to ultimately reducing relations to just their relata, to the objects or terms of the relations. This denial of relations' ontological independence sounds like double-talk at present, and although this will be explained in what follows, a brief answer is warranted. Working with complexes, we are able to generate relations. As argued in the first chapter, given any two objects occupying the universe, there will be some relations between them, including similarity relations (even if they are absolutely unique and share no intrinsic properties, given extrinsic properties, they will have properties in common). Hence, we are now warranted, just with objects, to speak of relations. Whether we take relations to have an *independent* existence apart from their complexes is the crux of the issue, and the antipositionalist simply denies that is the case in the same way the resemblance nominalist, although entitled to talk about properties, denies that properties have any independent existence aside from the objects to which, through similarity relations, we are able to assign properties. Relations may enter relations with other relations, but without the complexes of individual objects, there simply will not be any relations in the first place. Therefore, the assumption that there is some entity that is the “similarity relation” by Russell is inappropriate in this context. This may seem disingenuous since at this point the similarity between relations has been key to individuating them. Now to simply say there are actually no such things as relations seems a slight of hand at best and simply metaphysical cheating at worst. There are a number of resorts available, however: using the analogy from resemblance nominalism, once we have generated a category, such as

relations.

properties, even though we deny their existence as independently existing furniture of the universe, we can still sort them into “color-properties” and “smell-properties,” for example. Just because we can do this sorting does not mean we are conferring any independent ontological status to what is being sorted. A second resort would be to introduce talk of relations as supervening on objects—relations as different from and dependent on objects. The denial of relations as ontological entities is not the only option available to the antipositionalist, however, in response to Russell's Regress of Resemblance, and one can respond to the criticism an hold relations have some ontological being.

The same response given to the Bradley-type regress is appropriate here. The regress is possible, but it is vacuous and not vicious. The similarity relation holding between sets of relations are similar to one another and individuated; however, each individual similarity relation is similar to any other similarity relation no matter the order of the relation. We do not need to resort to ever-higher orders of similarity to give an account of similarity. Hence, we can make similarity claims between relata as well as between relations as way of individuating properties (*a la* resemblance nominalism) or relations (*a la* antipositionalism) without encountering this regress as vicious. The reason is the very similar nature between the similarity relation and inherence—whatever the similarity relation is similar to (another similarity relation), it is the same type of relation. We may not encounter different types of similarity relations, but everywhere the similarity relation is of the same genus. It allows us, however, to sort out other relations (“both being white”) on the basis of the relational complexes. To repeat, things may be similar in different ways, but the relation we use to determine X is a similarity relation and Y is a similarity relation will be a similarity relation *simpliciter*.

We might be able to generate a taxonomy of similarity relations into different genera (similarities of color, similarities of smell, and so on), but the similarity between these types of relations—that makes them all of the same kingdom of “similarity relations”—will be the similarity relation *simpliciter*. Yet at the same time, such a sorting of similarity relations seems unnecessary and

unwanted. For the resemblance nominalist, it is similarity *simpliciter* that allows us to recognize similarity, and this recognition of similarity provides us with the tools for recognizing the respects by which objects are similar (“similar in respect to red,” “similar in respect to smelling loamy”). To “build in” properties into the similarity relations themselves can lead to, it will be shown, incorrect inferences when making analogical arguments. Given that this metaphysical assumption leads to logical contradictions, it must be rejected. The only way around is an incredibly abundant universe of finely-grained similarity relations; an acceptable but perhaps bitter pill to swallow for the more frugal metaphysician.

A remaining problem for this antipositionalist account is relations which have only a single exemplification. If similarity to another relation is how one accounts for the differentiation of one relation from another, then relations with single exemplifications then are seemingly undetectable given we have no way of individuating or differentiating them. This problem is similar to the one introduced by Armstrong as an objection to resemblance nominalism; that is, it cannot give an account of properties with one exemplification since it reduces properties to resemblance relations.²³⁷ With nothing to resemble there can be no resemblance relation and hence either the resemblance nominalist must admit of properties and abandon his position or provide some alternative account. Rodriguez-Pereyra has proposed that possible worlds theory provides just the solution needed.²³⁸ Hence, in resemblance nominalism with possible worlds, to be a property is reduced to resemble some object in a certain respect either actually or *possibly*. So in a universe in which there is a single grue-colored object its property of being grue-colored is reduced to resembling some other grue-colored object in some possible world, a realist possible world or an ersatz possible world.²³⁹ Hence the problem of a single exemplification need not render a property unexplainable, irreducible or undetectable. This

²³⁷ Armstrong, D. *Universals and Scientific Realism. I: Nominalism and Realism*. Cambridge: Cambridge UP, 1978. 51.

²³⁸ Rodriguez-Pereyra, Gonzalo, *Resemblance Nominalism: A Solution to the Problem of Universals*, Oxford: Oxford UP, 2006. 99.

²³⁹ It does not seem that anything rides on us being a realist about possible worlds or not, although the question about relations existing between actual and merely possible objects are relations is a fascinating one.

approach provides the solution that Fine seems at a loss to discover. A completely unique relation, then, can still be individuated in terms of its similarity with another possible complex that serves as the completion of the same type of relation albeit in a possible world rather than an actual world. Given TSB also depends on such possible worlds, and has been admitted albeit with some reservations (it cannot be the complete theory of truthmaking), there seems no good reason to balk at appealing to possible worlds here.

One might still feel a bit of discomfort given the seemingly mysterious nature of similarity relations. On one hand, it serves a unique purpose among relations, individuating relations including itself. On the other hand, we could deny that similarity is any sort of special relation; it is reducible to substitution as all relations are but it simply plays a special *role* of individuating other relations as well as itself but is not a special *type*. Just as the relation “beside of” allows us to distinguish things that are beside one another, “similar (or the same) to” allows us to distinguish “loves” from “is beside of.” The fact that the relation that holds between the relations oLa, aLo, mLs and sLm and between the relations aBo, oBa, mBs and sBm is the same relation—the relation of similarity—is given just because the relation holding between those two relations is similar. This does require a second-order relation (“these two similarity relations are similar”) but it need not be a vicious regress if we hold that beyond second-order similarity relations any higher-order similarity relation will simply be vacuous. Only a second-order similarity relation is needed to individuate similarity as a relation, and in this context, that of “completed in the same manner,” individuating similarity as a relation is all the work the relation needs to do. Just what “completed in the same manner” means is the topic we will explore in the following section.

While similarity plays a unique role among relations, as the relation which we can use to individuate relations and recognize identical relations, it functions no differently from any other relation even when used to individuate itself. However, this resemblance relation itself must be hashed

out in such a way that makes sense given the ontological nature of relations.

THE ANALOGY OF RELATIONS AND SET-BUILDING

Fine suggests that the process of “completed in the same manner” is similar to set-building; certain sets may be constructed in different ways and yet contain the some or all of same members but, given we understand how we constructed the sets, we may distinguish them. The relation between “relation construction” and set-building is an analogous one, but it is very helpful in addressing two of the key demands that Fine suggests any adequate theory of relations must address: identity, which holds that any completion of a relation is identical to the completion of its converse, and second, uniqueness, that holds that no complex is the completion of two distinct relations. Set-building provides a demonstration that uniqueness is false in that two identical sets may be the result of non-identical functions. Analogously, a single complex may be the completion of two non-identical relations. The ability to distinguish sets on the basis of their construction and identify differing relations on the basis of a single complex requires a similar process of individuation.

Bijjective functions provide an illustration of differentiating sets on the basis of their construction although these such functions are not the only such illustration. A simple function like $f(x) = x^2$ can have the domain of just the positive natural numbers $\{1,2,3,\dots\}$, and the range will therefore be the set $\{1,4,9,\dots\}$. This means that all the members in the range set will also be members of the set of positive natural numbers. In this case, the sets themselves may be distinguished from one another, given the set, in that they do not have the same set membership, and even without understanding how the sets were constructed, given their dissimilarity, they can be distinguished. But this is not the case in sets formed by bijjective functions. A function f (from set A to B) is bijjective if, for every y in B , there is exactly one x in A such that $f(x) = y$.²⁴⁰ The two sets then could be identical in terms of set

²⁴⁰ For example, the function $f: \mathbb{R} \rightarrow \mathbb{R}, f(x) = 2x + 1$ is bijjective, since for each y there is a unique $x = (y - 1)/2$ such that $f(x) = y$. Therefore the function is bijection since the function from a set A to a set B is both injective and surjective. Therefore a bijjective function is both one-to-one and every value in the set A is mapped onto the same value in the coset

membership. The first set was given (by a previous function, as an assumption, et cetera) while the second set, the coset, was formed by the bijective function. Set membership could be identical, and therefore the only way to individuate the sets from one another is to understand how the set was formed. Identity is an ideal bijective function.²⁴¹ However, identical sets can be formed by more than bijective functions. The set of all even numbers should be identical to the set that begins with two and adds two *ad infinitum* to all subsequent sums, yet if we know how each set was formed, we can differentiate them not by set membership but by how they were formed.

Such individuation of identical sets may seem trivial, but it can be shown otherwise. Consider two theoretical data sets. Assume that each process for building the data sets is carried out perfectly. One data set is pulled from a national government computer database and is the passport number of every individual passport issued and active from that nation. Simultaneously an international census of every individual person from that nation is carried out to collect from active passport holders' passports numbers from their physical passports. Ideally, these two data sets should match. It is not trivial, however, that they should match or how each set was formed. If they do not match, it indicates the possibility of such problems as forged passports from that nation, passports that have gone missing, or errors in the national government database. Understanding which set of data was collected from the computer data and which was collected from the international census group would remain essential even if the data sets were perfectly identical in terms of numerical members. Such examples illustrate that while the members of the sets will or may be identical, we can distinguish the sets by how they were constructed and such individuation of one set from another is non-trivial.

The analogy with relations is this: co-mannered relations are relations “formed” or represented, as it were, in a similar manner just as sets. An identical function fed identical inputs will have an identical output and therefore will be the same. In just the same way, an identical representation of

B.

²⁴¹ Formally, if S is a set, the identity function f on S is defined as that function with domain and codomain S which satisfies $f(x) = x$ for all elements x in S .

identical completions will be just the same. Different completions “formed” by the same representations will represent the same relations analogously to how sets formed by the same function are similar. And just as, when given just the set, the function which was used to construct the set is not apparent, just so, given just a single complex, the relation of which the complex is the completion is also not readily apparent. Even given an identical state of affairs, this state of affairs may be the completion of one or more relations depending on how we understand the representation of that state of affairs. However, we need not posit that the “manner of construction” or the representation of the relation is an entity in itself just like we do not need to reify functions. But the similarity between such ways of representing allows us to individuate such ways of representing just as the similarity between functions allows us to recognize the same function.

We must be careful here to emphasize this “construction” of relations, for otherwise, we encounter the aporia faced by resemblance set nominalism in the case of coextensive properties. In naïve resemblance set nominalism, a universal is simply to be identified with all the objects that exemplify that quality, the set of those objects that are similar in that way.²⁴² Hence, in the case of relations, it would simply be the set of all completions of that relation; the universal (or relation) is simply reduced simply to the set of objects (or completions) that exemplify it. While there are several intractable problems with naïve resemblance set nominalism, this naïve notion of quality set-identity is the most problematic as it entails qualities (and relations) with coextensive sets (or completions) are identical. The classic example then becomes “having a heart” and “having a liver” become identical qualities under this description since the sets of objects with hearts and objects with livers—creatures with cardiopulmonary systems—are identical, while intuitively we believe that even though coextensive, “having a heart” and “having a liver” are not the same quality. Analogously, we also think relations with identical sets of exemplifications are not necessarily the same relation. This raises one of

²⁴² For an excellent overview of nominalistic set theory, see the eloquent essay by David Lewis, “Nominalistic Set Theory,” *Noûs* 4, no. 3 (1970): 225–40.

the critical questions of our exploration here: is there something else, in addition to the completion, that is the relation—some third thing?

Of course, antipositionalism denies that there is some third thing, and we should resist the urge to consider “a manner of completion” as a separate ontological object just as we should resist the urge to assign to functions existence as separate ontological entities. It is worth again emphasizing the procedural nature of this determination. However, clearly we can individuate identical sets from one another in meaningful ways based upon how they were constructed, and likewise, we can distinguish different and meaningful relations holding between a single complex. These conclusions should be strong arguments against the claim of naïve resemblance set nominalism that relations or properties just are the sets of their exemplifications. Furthermore, it introduces an element of consideration we do not often encounter in metaphysics: historicity. We must not just consider what is, but also how it came to be.

PROBLEMS WITH SUBSTITUTION

The remaining problem for Fine's antipositionalist account, where substitution plays a key role, is how to account for biased relations where the order of the relation seems important (such as in the case that Anne loves Ollie but Ollie does not love Anne), the very problem to which it was the proposed solution. Fine appeals to the idea that substitution provides an adequate account for the seeming order of relations. Taking substitution as primitive, Fine argues that one need not impute biases to relations but only to consider whether one object can be substituted into the relation for another. This substitution is also Fine's explication of “same manner of completion.” In Fine's defense, he admits that he offers no argument for taking of substitution as the primitive but rather does so because of an intuition. Hence Meas loves Seyha and Anne loves Ollie just in case in the relation xLy Meas can be substituted for x and Seyha can be substituted for y and Anne can be substituted for x and Ollie can be

substituted for y and the relation is seemingly preserved through the substitution instances (which we understand in terms of the first complex being similar to the second). This approach is seen as an alternative to “structural resemblances” that would seemingly impute biases to many relations such as those just mentioned. In what follows, it is demonstrated that any account we provide of substitution will either be dependent on similarity, or it will fail to preserve our theory of individuation that depends on the analogical notion of set-building. Hence, antipositionalism is dependent on similarity, and therefore substitution cannot be used to give an account of similarity relations.

We encounter the first major set of problems with substitution when we ask simply what is being substituted and how. In the “loves” relation, as in most relations, the substitution must be of the entire complex (both objects in the relation), or, similarity determines what object is suitable for substitution into this complex. Under the first account, the substitution must be of the entire complex as otherwise substitution will, in many cases, render the assertion of the relationship false. Hence it is true that Seyha loves Meas (sLm) but it is not true that Seyha loves Annie (sLa). Hence the relation that Seyha has to Meas does not resemble the relation that Seyha has to Annie even though in stating the relation both Meas and Annie occupy the “second position” of the beloved. The risk here becomes making the relation sLm itself a unique relation, so that “loves” is a different relation in every exemplification (for otherwise, anything occupying the “beloved” position should be able to be substituted for the “beloved” position in any other complex and remain truth-preserving—this is the problem raised above in considering different types of similarity relations). This accusation in part motivated Russell's Regress.

We may be perfectly willing to accept, however, that every *exemplification* of a relation is unique but deny the relation itself is unique in that they are tokens of a type. Such a conclusion is perfectly compatible with the nominalistic spirit of antipositionalism's endeavor. All relations, it could be claimed, are unique (as tokens), but the types of relations are to be identified on the basis of

similarity relations holding between unique relations while the relations themselves are merely representations of the complex. But substitutions are then irrelevant. No work is being done by substitution at all, but only by the similarity. “Seyha loves Meas” is no substitution for “Seyha loves Anne” nor for “Ollie loves Anne” but rather is just the similarity that holds between the complexes of Seyha and Meas and Ollie and Ann but does not hold between Seyha and Anne that allows us to recognize the relation of love in two complexes but not the third. If complex substitution is the substitution in play, substitution offers no more basic an account of relations than what was already reached in the above section.

Under the second account of substitution, a single object can be substituted into the relation but similarity determines whether the substitution is truth-preserving. For example, Seyha loves Meas but Seyha also loves Bopha. The relation “loves” is individuated in terms of the similarity of the relation that holds between both Meas and Bopha to Seyha. Alternatively, a “what-it-would-be-likeness” could also provide a criteria for substitution. Right now, the coaster is on top of the table. The relationship “on top of” is what remains similar to when the coaster is on top of the counter, but what does not remain similar if I use the coaster under one of the legs of the table in order to balance it. In the second relation, the complex has remained the same but not the relation that was once exemplified by the coaster being atop the table and atop the counter (now in fact the table is on top of the coaster, so the relation is actually still exemplified but now in a different order). As long as the “what-it-would-be-likeness” of the relation is truth-preserving throughout different substitutions, then the same relation holds between the new complex (the new complex is a new completion of the same relation). This reading is, this author believes, the most charitable and faithful reading of antipositionalism's substitution. This account, however, also fails to make substitution more basic than similarity as it is in terms of the similarity that holds between the substitution within the complex that determines whether or not the relation-claims about the complex are truth-preserving. Without appealing to an established

understanding of similarity, it does not seem clear how to determine whether or not any substitution is or would be relation-preserving.

Part of the appeal of substitution, according to Fine, is that it is a generally understood and specific application, and while it requires a structure, structural operations can be given in terms of it.²⁴³ There are, however, various models and contexts for substitution that make the claim that it is a generally understood and specific application more problematic. Semantic, syntactic, algebraic, and type and token substitutions all raise specific questions as to what is meant by substitution. There are three central problems, however, with the second account above of substitution. First, substitution is unable to preserve the insight that set-building is analogical to relating, and cannot preserve the insight that similarity in a respect can individuate relations. Second, similarity is still used to assess whether or not the substitution is relation-preserving or the new relational claim is true. The third problem relates to a possible response to the second. One response to the second problem is that similarity relations can be understood themselves in terms of substitution, as substitution is merely an application of the properties of equality. However, these properties of equality can be given in terms of similarity, and from them substitution can be derived. That is, substitution can be reduced to similarity.

The first problem with the substitution account is related to the problem of co-extensive sets in naïve resemblance set nominalist. Consider a set A and its coset B that was formed by a bijective function. These sets will have identical substitution applications. If the function is ignored and the sets are given purely in account of their substitution applications, with co-mannerings in terms of substitution applications providing the criteria for similarity relations and similarity relations providing the criteria for individuation, these sets will be exemplifications of the same function (as they are in terms of set membership). While it is true that an identical set could have been constructed by the same function, the case remains that they were not constructed by the same function and hence could be

²⁴³ Fine, "Neutral Relations," 28.

individuated on that basis. Any identical sets, regardless of how they were formed, would suffer from having identical substitution instances unless our notion of substitution is extended to include construction: remember our passport census. However, substitution was resorted to in order to explain construction, and analogously, co-mannered relations. In the case of relations, substitution erases any notion of the relation just like it ignores the function in set construction. Even given the application of similarity, assuming a faithful account of similarity relations can be given in terms of substitution alone, all relations that have coextensive completions would have identical substitution instances. While such a substitution application would retain the ordering of all relations, it encounters the same problem of coextensive sets. It provides an account of biased or ordered relations but at the cost of accepting uniqueness and being unable to give an account individuation. Substitution alone (particularly if our account of similarity must also be given in terms of substitution) will collapse all coextensive relations.

The second problem comes from evaluating substitution applications. It seems *prima facie* that similarity is used to determine whether a substitution instance is successful or a failure. A substitution instance that is successful is one that preserves the truth of a relation-claim. A substitution instance that fails is one that does not preserve the truth of the relation-claim. As already argued, such substitution claims can be modal as long as they preserve the “what-it-is-likeness.” But this “what-it-is-likeness” is clearly no more than a similarity claim. We assess a substitution instances by whether or not they are sufficiently similar to what they are a substitution for. Hence an account of the similarity relation itself could not make use of any such notion. Brute substitution will collapse relations with co-extensive completions. That is to say we have no idea of what is an appropriate substitution without the criteria of similarity. There is a response to this, however: that substitution is just an application of the properties of equality.

I can only give a sketch of the possible response that substitution is just an application of a

property of equality, and this response would be different enough to distinguish it from the general notion substitution as so far considered so we may label it “Strict Substitution.” The idea is this: substitution applications are merely the result of a property of equality. Therefore it is in terms of equality, not similarity, that substitution instances are to be evaluated. Given this restriction on just what we mean by substitution, we evade the challenges of the first two problems in two ways. First, substitution under this construct perfectly preserves set and completion integrity by allowing no other functions or methods of substitution aside from those stemming from applications of equality properties. Second, similarity is removed from consideration as only equality (and identity) are considerations in accessing the veracity of a substitution instance. All that is needed, then, are the postulates of the (in this case algebraic) properties of equality: the Reflexive Property ($a = a$), the Symmetric Property (if $a = b$, then $b = a$), and the Transitive Property (if $a = b$ and $b = c$, then $a = c$). Given these postulates we can construct a proof for the Substitution Property of Equality (if $a = b$, then a can be substituted for b in any equation or inequality) as long as we stipulate the set is reflexive and closed to addition. Given that we must be able to construct a proof for any such substitution application in terms of these postulates, we have sufficiently restricted substitution to ensure perfect fidelity to the relata being replaced.

Strict Substitution does not rid us of the problem for many relations, however, unless we think about the relata quite quixotically. In the relation in which Seyha loves Meas what would be an appropriate strict substitution for Meas or Seyha? Clearly the proof we can construct for the Substitution Property of Equality in which Meas is a relata means finding another relata equal to Meas. What operation can be carried out to demonstrate we have substituted the equivalent of Meas? The only criteria I can think of is that of truth-preservation. But in this case the evaluation of truth-preservation requires that we already understand what is the equivalent of Meas and hence begs the question. Part of this problem is because relations may be formed on the basis of extrinsic properties,

not merely intrinsic properties (for example, “beloved of”). In such cases, to understand what substitution is truth-preserving we could know all the intrinsic properties of an object and still not be able to determine whether or not it is a successful substitution. Instead, we must rely on our understanding of extrinsic properties that themselves can depend on the relation, as in the case of “beloved of.” But given we resorted to Strict Substitution to determine just what substantiation instances would be successful, it begs the question since it requires us to already know what substitution instances would be successful. A substitution could “fit,” but without the relevant respects given by similarity we would have no criteria to identify such a possible substitution aside from, again, question-begging truth preservation. While we may be able to give arithmetical and algebraic accounts of substitution in the strict sense (and perhaps in the physical sciences, also), they are of no help in analyzing non-mathematical relations.

Strict Substitution does at least seem to offer promise to provide an account of relationality where there is some procedure for establishing equivalence. But that procedure is always executed given the normativity of equivalence, a notion best understood in terms of relevant similarities, demonstrated above, and is itself always relational as is demonstrated below. General substitution does not work without an implicit working notion of similarity, and therefore fails to be an adequate explanation of relations given that similarity is relational. In fact, it can be demonstrated that Strict Substitution is itself relational. One only need to consider the properties of equality to see that the Substitution Property of Equality is a relation (equality) that holds between two relata, and the proof of which is constructed from postulates that are also explicitly relational, the Transitive Property and Symmetric Property. Furthermore, the Transitive Property of Equality is a relation that only holds between a complex if they share something that objects in the world such as Meas and Ollie only hold in relation to themselves: complete similarity in all respects. This is the Reflexive Property, and it is not a proper identity property or identity relation. But it does stipulate that for equality to hold, a and a

must be exactly alike. The claim that the Reflexive Property of Equality is dependent on a notion of similarity is defensible given that similarity is likewise a reflexive property. Building on the work of Douven and Decock,²⁴⁴ we can provide a paraphrase of all the Properties of Equality in terms of similarity. However, these paraphrases depend on the reflexive property which is a relational property, albeit one that requires merely one relata. It is in this sense that similarity is relational. Douvan and Decock propose the following formal definition of identity in terms of similarity in the relevant respects:

$$\text{Id}_C(\mathbf{a}, \mathbf{b}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{a}, \mathbf{b}) \leq t'_C{}^{245}$$

a and **b** are identical if, for any given context C, for all relevant respects *r* where *r* is an element of the similarity space S in context C such that where the distance function *d* for that respect *r* for **a** and **b** where *d_r* is the distance between **a** and **b** is equal to or less than the tolerance limit for *r* in context C *t'_r* and given $0 \leq t'_C$.

Part of the strength of the definition is the fact that it is contextual. Depending on how the distance function and the relational space are defined, the definition should operate within any context. An example of identity obtaining and identity not obtaining from within a mathematical context can help illustrate an application of the definition. So, for example, (2) and (1+1) are identical if within the context of the positive whole numerals number line in the similarity space with distance from zero as a respect (position on the number line), such that distance being defined by the function $(|(f(\mathbf{a}) = 2-x) - ((f(\mathbf{b}) = 2-y)|)$ where the function yields an absolute value and where the tolerance limit in this context given this respect is equal to or less than 0. The distance function determines if there is any distance between **a** and **b** on the number line. With a tolerance limit of zero, any distance greater than zero will mean that in respect to position on the number line, given the distance function, **a** and **b** are not identical.

²⁴⁴ Igor Douven and Lieven Decock, "Identity and Similarity," *Philosophical Studies* 151, no. 1 (2010): 59–78.

²⁴⁵ *Ibid.*, 68.

$$\text{Id}_C((2), (1+1)) \leftrightarrow \forall r \in S_C : (|(f(\mathbf{a}) = 2-(2)) - (f(\mathbf{b}) = 2-(1+1))|) \leq 0.$$

$$\text{Id}_C((2), (1+1)) \leftrightarrow \forall r \in S_C : (|(0) - (0)|) \leq 0.$$

$$\text{Id}_C((2), (1+1)) \leftrightarrow \forall r \in S_C : |0| \leq 0.$$

$$\therefore (2)=(1+1)$$

$$\text{Id}_C(2, 4) \leftrightarrow \forall r \in S_C : (|(f(\mathbf{a}) = 2-(2)) - (f(\mathbf{b}) = 2-(4))|) \leq 0.$$

$$\text{Id}_C(2, 4) \leftrightarrow \forall r \in S_C : (|(0) - (-2)|) \leq 0.$$

$$\text{Id}_C(2, 4) \leftrightarrow \forall r \in S_C : |2| \leq 0.$$

$$\therefore 2 \neq 4$$

These examples are merely illustrations of the possible power of identity defined in terms of similarity in relevant respects. Furthermore, armed with this definition, we can produce a paraphrase of all of the Properties of Equivalence, and using those paraphrases, construct a proof of general substitution and Strict Substitution built out of the “Properties of Similarity Postulates” that extends beyond mathematical equivalences and into non-formal spaces.²⁴⁶ It is worth considering that the algorithm by which Pixy, the image-recognizing robot-camera we met in the first chapter, operates in almost precisely along such lines, with the distance function as providing the degree of tolerance for similarity to account for such things as changes in size (one context) due to distance or changes in hue (another context) due to a shadow falling over an object. Contextualization of relevant respects means that unlike Strict Substitution there can be a clear criteria for equivalence outside mathematical applications. This criteria, understood as relevant similarities, then allows us a procedure by which to make truth-preserving substitutions into relations and therefore a way of understanding “co-mannered

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Reflexive Paraphrase: $\text{Id}_C(\mathbf{a}, \mathbf{a}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{a}, \mathbf{a}) \leq t'_C$

Symmetric Paraphrase: $\text{Id}_C(\mathbf{a}, \mathbf{b}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{a}, \mathbf{b}) \leq t'_C \equiv \text{Id}_C(\mathbf{b}, \mathbf{a}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{b}, \mathbf{a}) \leq t'_C$

Transitive Paraphrase: $\text{Id}_C(\mathbf{a}, \mathbf{b}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{a}, \mathbf{b}) \leq t'_C$ & $\text{Id}_C(\mathbf{b}, \mathbf{c}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{b}, \mathbf{c}) \leq t'_C \supset \text{Id}_C(\mathbf{a}, \mathbf{c}) \leftrightarrow \forall r \in S_C : d_r(\mathbf{a}, \mathbf{c}) \leq t'_C$

relations” in terms of similarities of relations. Both individuation and substitution can therefore be explained in terms of similarity.

However promising this approach there are still a number of underlying difficulties that depend on subsequent research to answer. In terms of mathematical identity in the context we have defined it is clearly necessary for it to have a tolerance limit as without a tolerance limit there would be no process to verify if, given the output of the distance function, if two objects were identical. In the examples above, which analyze similarity in terms of distance from zero on the number line, the tolerance limit is clearly essential. Note, however, that the tolerance limit imports the notion of equality into the definition of identity. Our paraphrases give us postulates of similarity, but they depend on the reflexive nature of similarity (the fact that a will be similar to itself) and through that reflexivity some brute notion of equivalence. This “Similarity Model” (as opposed to the “Substitution Model”) must hold that this equivalence can be understood only through similarity relations: bare equivalence cannot provide the criteria for substitution aside from Strict Substitution, and even in Strict Substitution there may be a case that equivalence can only be understood in terms of relevant similarity.

There is a highly intimate and problematic relationship between identity, equivalence and similarity. Two twenty dollar bills are identical in value and therefore equal in value. This “identical in value” means similar in all relevant respects in the contextual space of monetary value. The two bills are not identical in that they are two different physical objects. They are not similar in terms of the extrinsic spatial relations with other objects although they likely are in terms of their chemical composition. We may broaden the respects and context to completely universalize the definition, but that still does not remove its dependence, in many situations at least, on the equivalence relation that relates the value of the distance relation to the tolerance limit. At the risk of flogging a dead horse, given the reflexive relation of similarity, this dependence on the equivalence relation should not come

as a surprise and should not be thought of as a fatal flaw. The reflexive nature of similarity is of a metaphysical, not a formal nature: it is given by what similarity is *qua* similarity. As such it may offer the most promising metaphysical basis for an account of both equivalence and identity. What remains to be seen is that given similarity is also a relation, can it fare any better in giving an account of relations? To see this, we must backtrack a bit while keeping in mind that why general substitution nor Strict Substitution are adequate accounts of relations.

THE SIMILARITY MODEL

Fine suggests that his antipositionalist view has transferred the complexity of relations from the relata to “a network of connections.”²⁴⁷ Even with the aforementioned difficulties of using substitution as the concept to unpack these complexities, we can still preserve this notion and remain true to what this author takes to be the economical, theoretical, and ontological motivations of our cheap metaphysician as all good metaphysicians are cheap, forever seeking two-for-one deals. To do this work of relations cheaply, rather than taking *substitution* as primitive and using it to explain the similarity of relations, *similarity* should be taken as primitive and used to explicate relations with substitution being one among many. Paired with the theoretical tools of modal logic, both the complex versus relata substitution problem and coextensive problems of substitution disappear since the problem was, after all, “sneaking in” notions of similarity into substitution applications. However, the question remains: what help can similarity, itself a relation, be to providing a theory of relations? We saw in the earlier section its value of individuating relations. But can similarity provide any analysis of relating given it is itself a relation?

Similarity is able to provide a further analysis of relations. Not only does similarity provide a way of individuating relations through their similarity to one another, but it also provides criteria for

²⁴⁷ Fine, “Neutral Relations,” 32.

substitution instances. It can provide an account of ordered or biased relations. Only through the notion of similarity can the notion of correct substitution instances be made sense of in part but not only because equality is simply the strongest similarity relation meaning similar in all respects. Given the notion of similar in all respects, the properties of such similarity can be made explicit in terms of the Properties of Equality postulates from which a proof of the Substitution Property of Equality can be constructed. Given that similarity provides both a criteria for individuating relations as well as the criteria for assessing whether a relata's substitution instance into a relation is truth-preserving, it accomplishes everything that general substitution and Strict Substitution set out to do while providing a more fundamental account of substitution. However, similarity remains a relation.

Our cheap metaphysician set out to offer an a reductive account of relations and one that did not encounter the “plus one” problem of any relation being composed of three things—two relata and something else, a relation, that related them. What will be termed the “Similarity Model,” in taking similarity relations as a justified primitive, can give a solution to the “plus one” problem as it does not posit any independent ontological entity that is the similarity relation. Rather, similarity is a relation that can be abstracted either from sets of relata (in terms of qualities) or sets of complexes (in terms of relations). It need not posit any third thing aside from these sets of complexes or the state of affairs constituted by and only by those complexes and can be agnostic towards the question of whether or not relations represent independent ontological category. It does seem, however, unsympathetic to the idea that relations exist in any way independently of relational complexes yet the relata of those complexes seem to be very rich, including non-actual objects. The resemblances need not be found in the relation²⁴⁸ itself, as something floating around “out there” and “for real” but rather can be explained in how it is represented among a “network of connections,” an explanation that can also serve to explain how it is differentiated and how complexes are assigned different relational properties based on those

²⁴⁸ Or quality for that matter

representations. Furthermore, there is no difficulty in explaining both how converse relations are exemplified by the same complex of objects and no difficulties in accounting for symmetrical relations. There is nothing so far in our analysis to prevent us from introducing ontological talk of relations above and beyond these ways of representing (at least not without further argument) but likewise there is nothing to compel us to do so.

The fact remains, however, that similarity is fundamentally a relation and for it to serve as a reduction of relationality we must give a non-relational account of similarity. Substitution offered that hope, but we saw by analysis that it failed. There is the possibility that *identity* could offer a non-similarity dependent analysis of equality, given which, substitution could be resuscitated in some form. Recently, Douven and Decock, as we have seen, have pointed out that instances of identity claims can be analyzed in terms of similarities in relevant contexts, work that does not pull from but echoes W. V. O. Quine's early and influential critique of analyticity. Their work is in part motivated by the fact that what we take for identity conditions vary in contexts. If identity is a relation, it of course fails to provide a reduction of relationality, and if it is dependent on similarity then it fares no better than equality.

But is there hope given we need not posit any “third thing?” Is not the coaster on top the table (along with the glass on top the counter) or the lovers Meas and Seyha (along with the lovers Ollie and Anne) all that is needed to provide an account of “on top” or “loves” given the relevant similarities these sets of complexes have to one another? Is this not a successful reduction of relations to complexes? Herein lies the difficulty. Yes, we need nothing but those pair of complexes but we cannot even begin to analyze the relation without introducing the relationality of similarity. Unlike material reductions, where all relevant talk of a supervening property can be given in terms of its supervenience base, we have no way of even beginning to explain the relation shared by the complexes without first introducing similarity talk which simultaneously introduces relations talk. Without similarity talk, our

explanation of what constitutes any relation is inadequate. And without similarity talk, we have no way of evaluating whether substitution applications will be truth-preserving aside from mathematical equivalence (theoretically—there is always some consciousness or artifact of consciousness bearing “in mind” that 1 and 1 are the same thing). The Similarity Model, while it cannot provide a reduction of relationality, does allow us to discuss what is fundamentally required to begin talk of relations and in a way that accords with our own cognition, experience of the world, logical and formal properties observed and discovered, and deep metaphysical intuitions while at the same time not adding to the furniture of the universe by reifying relations or mistaking them for universals. The Similarity Model allows us to substitute an individual object rather than a complex and so prevents all relations from collapsing into unique relations, each the one type with no other tokens; this also frees us from the restriction of only substituting complexes so we can explain how object substitutions that actually preserve relations are possible. Similarity also allows us more elbow room in explaining just how relations are similar by allowing us to use such structural features as “how the relation was construed” that seemingly disappear in an account given using only substitution and certainly are not available under Strict Substitution. While we did not get our two-for-one deal from similarity, we did get all other relations along with it, a worthy bargain for our thrifty metaphysician. We find ourselves at the same point as Fine: able to give an account of the very essence of our idea of a relation, but in a way that preserves more of our intuitions about that idea than Fine is able to do merely with “co-mannered relations” and substitution as the account of such co-mannered.

TRUTHMAKERS AND COMPLETIONS

One of the principles which we rejected was the principle of uniqueness, the principle that no complex is the completion of two distinct relations. Taking similarity as primitive allowed us to explicate the notion of co-mannered relations to explain different relations (above, below) as well as to

explain how the same complex could be the completion of more than one relation as well as how relations with identical completion complexes could be individuated. The motivation was, as we saw, an explication of relations that remained ontologically sparse, and in effect at the end of the last section we could feel confident that given similarity as a primitive relation all other relations could be explicated in terms of it at least in so far as their individuation (which implies their identity). This introduces a much more complex problem (as if an explication of relations is a simple matter!) that emerges in light of a contemporary concern with truthmakers as we observed in the second chapter of this work.

I have a set of two blocks before me. There is a white block which is setting atop of a black block. I have a single complex before me then, the state of affairs consisting of the two blocks. This single complex forms the completion of several relations, that of the the white top being above the black block (wTb), the black block being below the white block (bBw), and perhaps many others. You, the reader, of course are not in sight of my blocks. But I tell you the truth when I say the white one is atop of the black one and the black one is below the white one. What is it that you now know? What does your knowledge of this relation consist in? And what is the truth-maker—what is it that makes true—these two relational statements?

It may seem like a quite naïve question to ask. What makes them true is the state of affairs of the white block being atop the black one. But in our presentation of understanding relations we have already seen that any relation must invoke other higher order relations. That is, any relation is understood in terms of other relations, actual or possible, through like-manner completions: similarity. We freed relations from any necessary ontological standing of their own, or so we thought, by suggesting that similarity alone can do the heavy lifting needed—only similarity and then the sundry objects of the world were needed. But in asking what is known, and what makes true, in relation-claims, the consequences of this picture of relations come to the foreground. What makes true that

wTb cannot merely consist of w and b because I must have other actual or possible objects that could stand in a similar relation. Very well, says the Occamist defender. We need merely to say to understand wTb is necessary to understand what the state of affairs would be if they were bTw, and in understanding the similarity of the two completions we have all we need to understand the “above” relation as well as why it is biased (ordered). That is a fine answer, we may say, but then b and w are not the truth-maker for the relational claim as they are also the truth-maker for the opposite claim. Hence, we are back right where we started—a conundrum in explaining ordered relations.

Did not we already solve this? Was not understanding co-mannered completions, possible and actual, through similarity relations the solution to this problem? It was, but it was a solution that we saw invoked other relations, actual or merely possible, and as such invoked other objects, actual or possible. Given that the relationship is to be understood in this manner is it possible that the completion itself represents the truth-maker for the relational claim, or must it be the complex “plus one” represents the relational claim—the elimination of that “plus one” being in part our very motivation for tackling this problem?

What is this “plus one?” Perhaps the best answer is also the seemingly most unsophisticated. It is simply to say that the blocks do not exist in isolation but rather occupy places in a much broader ontological complex with many different objects. In a universe consisting of two absolutely atomic blocks most of the relations we could apply to them in our own universe of *concordia discors* would simply be unavailable to us. The notions of “above” and “below” only make sense in a conceptual scheme that has many other relationships inherent in it like “attracted to” or “heavier than” if we are to take it that talk about “above” and “below” are to be reduced to talk of gravitational forces and observers' orientations in light of those forces. Without such observers with such orientations, the question of above and below loses its sense. Such an answer seems so unsophisticated because it does not embody the sparse aesthetic of those clean lines of Occam's Razor. But still, we can ask how much

is needed. Surely a theory of truth-making for relations that invokes the entire universe is not the most attractive, even if it turns out to be the correct one. It is the questions about the epistemology of relations, and similarity in particular, then, that will occupy us in the subsequent chapter.

CHAPTER FIVE: THE EPISTEMOLOGY OF RELATIONS AND SIMILARITY: KNOWING RELATIONS, KNOWING ANALOGIES

Relations, and similarity relations, make up part of the furniture of universe. We need not assert that they exist independently of the complexes which instantiate them,²⁴⁹ but, hopefully at this point a compelling case has been put forward that the work of relations cannot be done by property-talk alone, and relations represent a type of ontological entity, even if supervening on other types of objects, and that we can talk about and individuate relations on the basis of similarity. Likeness is itself a relation that we have good reasons for believing is an irreducible primitive. It may be, though, that relations represent something non-reducible none the less. As the concluding remarks of the last chapter made clear, however, there remains a lacuna in our consideration of relations and similarities: which ones (relations and similarities) actually *are*.

Given similarity is how we individuate relations, and individuation is the way we come to know an entity, to know relations (as well as, the resemblance nominalist will claim, to know properties) we must know similarities. Therefore, it is the epistemology of similarity claims—analogy as defined in the first chapter—that must be considered now. We have a good sense of what must ontologically be the case in general, but whether or not the relations, which we have used to illustrate our various points, actually exist—“before,” “taller than,” “master of,” “under,” “beloved of”—remains unanswered. The question remains: “What relations, and particularly what similarity relations, are actual?” What has occurred so far has largely been groundwork for tackling this specific problem.

It is a problem, though, deeply explored in two great non-Western traditions: that of the Sanskrit tradition(s) and its progeny, and of Islamic philosophy. We have considered some of the Sanskrit debates about relations in past chapters, but it is in the debates about the epistemic standing of

²⁴⁹ As observed earlier, that relations may exist between actual and possible objects, or that relations may exist between merely possible entities, is itself a fascinating and not toothless problem for a theory of relations. We will in fact see some objections from Dharmakīrti to relations on the very basis that relationality entails such relations, which, because they are among non-actual, non-existent particulars, are impossible, ergo, relations are unreal.

analogy that many of the most subtle points are made. In considering these debates about the role analogy, metaphysics is not abandoned as, perhaps particularly demonstrated in the Sanskritic traditions, epistemological arguments are taken as evidence for ontology, and ontological arguments are taken as evidence for epistemology. Hence, in considering these debates, more nuance can be added to the metaphysical picture the past three chapters have painted as well as considerations one must account for in the epistemological discussions.

Exploring these traditions is not just a scholastic exercise, however, because these traditions raised questions, issues, and posited answers not considered in the venerable history of Greco-Roman philosophy and its descendants. It is not fanciful interest in “quaint, quixotic traditions” that motivates bringing them into this study, but rather a recognition of the rigor with which they approached and analyzed the issue of analogical knowledge and the unique contributions that they have to make to this debate that have yet been largely unconsidered outside of the traditions themselves. It is their value, not their geographic origin, that warrants their inclusion and consideration here.

To set the stage, first, the denial of relations outlined in Dharmakīrti's (seventh century—see Dunnes for problems with dating Dharmakīrti) text, the *Sambandhaparīkṣā* with commentary by Prabhācandra (eleventh century), will be considered.²⁵⁰ In fact, the debate about the nature of relations within the South Asian tradition has been called by R. K. Tripathi the “central question of Indian metaphysics.”²⁵¹ The general outline of the positive theory, put forth by the Naiyāyika, will be recalled from the second and third chapters. Beginning with the Buddhist denial of relations, however, allows

²⁵⁰ John D. Dunne, *Foundations of Dharmakīrti's Philosophy*, 1st ed, Studies in Indian and Tibetan Buddhism (Boston: Wisdom Publications, 2004), 1.

Many cite Frauwallner's argument on this subject, for example, Tom Tillemans, “Dharmakīrti,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Spring 2017 (Metaphysics Research Lab, Stanford University, 2017), <https://plato.stanford.edu/archives/spr2017/entries/dharmakiirti/>.

Dharmakīrti, “Dharmakīrti: Sambandhaparīkṣa, 1-25,” accessed June 12, 2015, http://gretel.sub.uni-goettingen.de/gretel/1_sanskr/6_sastra/3_phil/buddh/dhksparu.htm.

Dharmakīrti and Prabhācandra, “Dharmakīrti: Sambandhaparīkṣa, with Prabhācandra's Commentary,” accessed June 19, 2015, http://gretel.sub.uni-goettingen.de/gretel/1_sanskr/6_sastra/3_phil/buddh/bsa063_u.htm.

²⁵¹ R. K. Tripathi, “The Central Problem of Indian Metaphysics,” *Philosophy East and West* 19, no. 1 (1969): 39–43, <https://doi.org/10.2307/1398095>.

us to better understand their denial of analogy as a means of knowing. Once setting out the broad contours of the denial of relations, we will plunge into the debates about the metaphysical status of *sādṛśya*, “similarity,” and *upamāna*, “analogy,” that occur among the Nyāya-Vaiśeṣika, Bhaṭṭa Mīmāṃsā, Prābhākara Mīmāṃsā and the Buddhist philosophers. These debates interweave metaphysics and epistemology, considering *upamāna* and explanations of what knowledge from analogy is, whether it is reducible to other forms of knowledge, and the Buddhist denials of *upamāna* as a veridical source of knowledge.

From there, attention will turn to another set of debates, this time in the Islamic legal tradition concerning the status of analogical arguments, *qiyās*.²⁵² The Islamic debate is not about the metaphysics or ontology of similarity, although metaphysical and theological assumptions form the backdrop of the debates, but rather about the epistemology and within the very practical realm of jurisprudence. These Islamic debates are an exploration of analogical reasoning itself and remarkably bear insights very close to the Buddhists in their objections, but it is largely in the defense and support of analogical reasoning that we see epistemological concerns come into focus. The dimensions of this debate will be explored through two schools of Islamic jurisprudence (*madhhab*). The first, the Zāhirī *madhhab*, or Zāhirī school of jurisprudence (or less frequently termed Dāwūdi, after the founder Dāwūd al-Zāhirī (815/817–883/4 CE)), is a now defunct school of thought known primarily through the surviving works of Ibn Ḥazm al-Andalusī (994-1064 CE), the only of the Zāhirīs' work known to have survived, and in particular his *Al-Nubdha Al-Kāfiya Fī Uṣūl Aḥkām Al-Dīn*, “*The Sufficient Tract on the Rules [Derived from] the Sources of Religion*.”²⁵³ The second is the Shāfi‘ī

²⁵² Hallaq, in a very interesting article, cautions us that *qiyās* is not only an analogical argument, and directs our attention to a number of arguments considered “*qiyās*” but which are non-analogical. Despite this caution, herein the term will apply only to those arguments which are analogical unless explicitly stated otherwise, and will apply the term “*qiyās*” to them. [sentence?] Wael B. Hallaq, “Non-Analogical Arguments in Sunni Juridical Qiyās,” *Arabica* 36, no. 3 (1989): 286–306.

²⁵³ Ignác Goldziher, *The Zāhirīs: Their Doctrine and Their History: A Contribution to the History of Islamic Theology*, ed. and trans. Wolfgang Behn, Brill Classics in Islam, v. 3 (Leiden ; Boston: Brill, 2008), xxii, 27. Abū Muḥammad ‘Alī ibn Aḥmad ibn Sa‘īd ibn Ḥazm, “Al-Nubdha Al-Kāfiya Fī Uṣūl Aḥkām Al-Dīn,” in *Ibn Ḥazm of Cordoba: The Life and Works of a Controversial Thinker*, ed. Camilla Adang, Ma Isabel Fierro, and Sabine Schmidtke, trans. Adam Sabra, Handbook of Oriental Studies. Section 1, the Near and Middle East, volume 103 (Leiden ; Boston: Brill, 2013), 111–60. Note that sometimes this book is referred to by an alternative title, *al-Nubadh[!] fī uṣūl al-fiqh al-*

madhhab as represented by al-Shāfi‘ī’s (767–820 CE) *Risāla*.²⁵⁴ While the former *madhhab* rejected *qiyās* as a legitimate form of legal reasoning, the Shāfi‘ī *madhhab* constructed a cautious defense of its admissibility. These debates are fascinating in the extreme, for not only do they in part prefigure the debates and contributions of much later thinkers such as the Andalusian Mālikī legal philosopher, al-Shātibī (1320–1388 CE), but also contemporary debates in which Ibn Ḥazm has become an intellectual hero of the contemporary conservative “literalist” Salafī movement represented by groups such as the Muslim Brotherhood and Jamaat-e-Islami in the Middle East and North Africa, southern India's Base Movement, the Indonesian group Wahdah Islamiyah, and others across the Islamic world.

A BUDDHIST BACKGROUND

We have already made some cursory remarks in chapters one and two as to how analogy, similarity, and relations were considered in the remarkable debates that occurred in the Indian subcontinent and Buddhist Southeast Asia. It is necessary here to now present these debates in more detail to bring to the forefront the close relation of the metaphysical and epistemological problem of first relations, then the specific relation of similarity, and then finally that of analogy.²⁵⁵ It is helpful here, perhaps, to start with the Buddhist denial of relations as it provides the necessarily tools for us to then move on and understand their objections to analogical knowledge.

Sometime during or immediately after the Vesāli Council, or Second Buddhist Council (approximately 334 BCE), the first divisions in the Buddhist community appeared as the Sangha

Zāhirī.

For biographical information on Ibn Ḥazm see José Miguel Puerta Vilchez, “Abū Muḥammad ‘Alī Ibn Ḥazm: A Biographical Sketch,” in *Ibn Ḥazm of Cordoba: The Life and Works of a Controversial Thinker*, ed. Camilla Adang, Ma Isabel Fierro, and Sabine Schmidtke, Handbook of Oriental Studies. Section 1, the Near and Middle East, volume 103 (Leiden ; Boston: Brill, 2013), 3–24. Also see Amr Osman, *The Zāhirī Madhhab (3rd/9th-10th/16th Century): A Textualist Theory of Islamic Law*, Studies in Islamic Law and Society, volume 38 (Leiden ; Boston: Brill, 2014), 77–83.

²⁵⁴ Muḥammad ibn Idrīs Shāfi‘ī and Joseph E. Lowry, *The Epistle on Legal Theory* (New York: New York University Press, 2015).

Bernard G Weiss, *Search for God’s Law Islamic Jurisprudence in the Writings of Sayf Al-Din Al-Amidi*. (Salt Lake City: University of Utah Press, 2010).

²⁵⁵ We will see, however, that the Prābhākara Mīmāṃsā suggest similarity is constitutive of a distinct ontological category, a most novel suggestion!

divided into the two sects, the Sthaviras and Mahāsāṃghikas, the former being the ancestral school of the Theravāda though the intermediary school, the Vibhajyavādins.²⁵⁶ The earliest divisions likely occurred due to debates about the proper code of conduct for monks and nuns, the *vinaya*; however, the latter division was on a point of doctrine, a split with the Sarvāstivādins' regarding the characterization of *dhammas* as existing in the past, present and future.²⁵⁷ It is believed that the present Pali canonical Abhidhamma literature represents the views of this tradition and their continuation and elaboration, particularly the *Kathāvatthu* of Moggaliputtatissa (approximately 327 BCE-247 BCE), traditionally said to have been composed at the Third Buddhist Council. Some significant differences did develop, primarily in the Theravāda claim that only *dhammas* in the present instance exist.²⁵⁸ Scholars believe that the first compilations of the Abhidhamma texts, both by the Vibhajyavādins/Theravādins and rival schools such as the Sarvāstivādin, began around 250 BCE; it was also around this time that the Kashmiri Sautrāntikas broke from the Sarvāstivādin (the Vaibhāṣika-Sarvāstivādins, one school of the Sarvāstivāda) with their rejection of the Abhidhamma literature (or perhaps the metaphysical speculations it represented) of the Vaibhāṣika.²⁵⁹ By about the first century BC, the Mahāyāna schools began to appear; however, Williams and Conze note the appearance of the *Prajñāpāramitā* texts perhaps in the century before, and so some proto-Mahayana schools or at least tendencies likely existed.²⁶⁰

²⁵⁶ Akira Hirakawa, *A History of Indian Buddhism: From Śākyamuni to Early Mahāyāna*, trans. Paul Groner, Asian Studies at Hawaii, no. 36 (Honolulu: University of Hawaii Press, 1990), 86–87.

Ronkin, *Early Buddhist Metaphysics*, 23.

²⁵⁷ Nalinaksha Dutt, *Early History of the Spread of Buddhism and the Buddhist Schools* (New Delhi: Dev Publishers, 2005), 124–26.

Hirakawa, *A History of Indian Buddhism*, 80–82.

Ronkin, *Early Buddhist Metaphysics*, 22–23.

²⁵⁸ Ronkin, *Early Buddhist Metaphysics*, 23.

Dutt, *Early History of the Spread of Buddhism and the Buddhist Schools*, 138.

²⁵⁹ Hirakawa, *A History of Indian Buddhism*, 128.

Amar Singh, *The Heart of Buddhist Philosophy: Dinnaga and Dharmakīrti* (New Delhi: Munshiram Manoharlal, 2004), 18. Singh also provides a useful overview of some of the epistemological differences between the Vaibhāṣikas and Sautrāntikas. See Singh, 20–21.

²⁶⁰ Richard F. Gombrich, *Theravāda Buddhism: A Social History from Ancient Benares to Modern Colombo*, Second edition, The Library of Religious Beliefs and Practices (New York: Routledge Taylor & Francis Group, 2006), 131.

Hirakawa, *A History of Indian Buddhism*, 249.

Paul Williams, *Mahāyāna Buddhism: The Doctrinal Foundations*, 2nd ed, The Library of Religious Beliefs and

The emergence of Abhidhamma literature, or the “Higher Teachings” as it is sometimes rendered in English, represents what might be called the metaphysical turn in Buddhism. It is intensively concerned with the *dhammas* (or *svalakṣaṇas*), the psycho-physical events that constitute experience and the interactions of mind and the world. It developed in the Theravādin tradition as an intensively nominalistic atomicism, only superficially resembling some of the Western Atomists such as Democritus (460 – c. 370 BCE), whose work is known to us only in fragments, or Titus Lucretius Carus (99 BCE-33 BCE). For the Theravādins, and one supposes for their precursors in the Vibhajyavādins, these *dhammas* were real and constitutive of reality. These were not at all the eternal atoms of Democritus, who supposed that the atoms were infinite and indivisible with only different configurations giving rise to different materials or phenomena, but rather *dhammas* came into existence and went out of existence.²⁶¹ Just how long these *dhammas* persisted became a matter of contention among the tradition. Perhaps it was only a matter of time before the reality of these *dhammas* was called into question, and indeed they were, notably by Yogācāra Buddhists as evidenced in the work of Vasubandhu (fourth to fifth century CE).²⁶² Dutt, although in an older work (published 1984), provides a helpful overview the scholarly controversy about just who Vasubandhu was, whether there were perhaps two scholars named Vasubandhu, and arguments about his (or their) exact orientations among the Buddhist philosophical schools of the time, important in part because his orientations are seem as important to placing the two intellectual heirs that followed.²⁶³ These debates are unresolved. One of Vasubandhu's intellectual heirs was the Buddhist logician and epistemologist, Dignāga (c. 480–c. 540 CE), another philosopher's who exact node in the scheme of competing Buddhist schools is again debated. However, his possible student but certainly further intellectual heir, Dharmakīrti, continued

Practices (London ; New York: Routledge, 2009), 48.

E. Conze, *The Prajñāpāramitā Literature* (Reiyukai, 1978), 1–2.

²⁶¹ C. C. W. Taylor, Leucippus, and Democritus, *The Atomists, Leucippus and Democritus: Fragments: A Text and Translation with a Commentary*, The Phoenix Presocratics, v. 5 = Les Présocratiques Phoenix; t. 5 (Toronto ; Buffalo: University of Toronto Press, 1999), 64–76.

²⁶² Matthew Kapstein, *Reason's Traces: Identity and Interpretation in Indian and Tibetan Buddhist Thought* (Boston: Wisdom Publications, 2001), 181–204.

²⁶³ Dutt, *Early History of the Spread of Buddhism and the Buddhist Schools*, 24–46.

and developed the line of thought seemingly first put forward by Dignāga and influenced by Vasubandhu.²⁶⁴ According to the Tibetan tradition, Dharmakīrti was born in South India and moved to live at the Buddhist university of Nālandā, and it is to him to which we will shortly return.²⁶⁵

The Theravāda tradition continued, too, to develop the philosophy of the *dharmas*, notably in the work of the fifth century commentator Buddhaghōṣa's work, but philosophical and speculative texts continue to be produced within the Theravāda tradition both in Pali as well as in the vernacular languages of Southeast Asia such as Mon, Burmese, Thai and Khmer up to the present day.²⁶⁶ By the time of Buddhaghōṣa, however, the Theravāda tradition was largely confined to southern India, Sri Lanka, the Mon states of the Tenasserim coast and perhaps even Dvāravatī in the Khorat Plateau in of present day Thailand (if the *Cāmadevivāṃsa* is to be trusted as accurately reporting the religion of Hariphunchai, one of the northern Dvāravatī states, although it is not our only source of information in this regards).²⁶⁷ As such, it seems that it was no longer very engaged in the philosophical dialogues and

²⁶⁴ Again, Dutt helpfully overviews the controversies surrounding Dharmakīrti's assignment and place among various Buddhist schools. See Dutt, 97–116.

²⁶⁵ There is also a popular tradition, primarily in Indonesia, that Dharmakīrti originated from Sumatra, studied at the Buddhist center of Śrīvijaya, and then traveled to India. This stems from a confusion between the earlier seventh century Dharmakīrti and the later scholar tenth century scholar, Dharmakīrtiśrī; the later is known primarily through his disciple, Atiśa Dīpaṃkara Śrījñāna (982 - 1054 CE). See Robert E. Buswell and Donald S. Lopez, eds., *The Princeton Dictionary of Buddhism* (Princeton: Princeton University Press, 2014), 214. Hubert Decler, “Atiśa’s Journey to Sumatra,” in *Buddhism in Practice*, ed. Donald S. Lopez, Abridged ed, Princeton Readings in Religions (Princeton, NJ: Princeton Univ. Press, 2007), 532–40. For sources on Atiśa's biography, see Helmut Eimer, “The Development of the Biographical Tradition Concerning Atiśa (Dīpaṃkarasrijñāna),” *Journal of the Tibet Society* 2 (1982): 41–51.

²⁶⁶ For example, the École française d'Extrême-Orient and other partners have begun to digitize many of these works, and the present author can attest that the collection of Khmer manuscripts, from the seventeenth to late nineteenth-century composed in Pali and Middle Khmer, contain many texts on Abhidhamma (អភិធម្ម, /ʔaʔpʰiʔ tʰoammeaʔ) and its philosophical elaboration.

“Khmer Manuscript,” accessed September 20, 2013, <http://khmermanuscripts.efeo.fr/en/home.html>.

“Lannamanuscripts.Net,” accessed June 20, 2017, <http://lannamanuscripts.net/en>.

²⁶⁷ See the following for additional information: Bodhirañsī, Donald K. Swearer, and Sommai Premchit, *The Legend of Queen Cāma: Bodhirañsi's Cāmadevivāṃsa, Translation and Commentary*, SUNY Series in Buddhist Studies (Albany, N.Y.: State University of New York Press, 1998). Today this area houses a number of important monastic libraries. George Coedès, Walter F. Vella, and Sue Brown Cowing, *The Indianized States of Southeast Asia*, 3rd ed. (Honolulu: University of Hawaii Press, 1996), 77.

Additionally, Rohanadeera summarized (up to 1988) the justifications scholars have used to identify Dvāravatī as Theravāda. See M. Rohanadeera, “New Evidence on Cultural Relations Between Sri Lanka and the Dvaravati Kingdom in Thailand,” *Vidyodaya Journal of Social Science* 2, no. 1 (1988): 47–63.

For more on the early religious history of the Khorat Plateau, see Nai Pan Hla, *The Significant Role of the Mon Language and Culture in Southeast Asia* (Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa (ILCAA), 1992); David J. Welch, “Archaeology of Northeast Thailand in Relation to the Pre-Khmer and Khmer Historical Records,” *International Journal of Historical Archaeology* 2, no. 3 (1998): 205–33; Sarah Talbot and Janthed

debates that continued to rage throughout South Asia and were written primarily in Sanskrit.

Moggaliputtatissa's work is a clear engagement with other schools of Buddhist thought by the nascent Theravādins, with its direct refutations of Vibhajjavāda, Mahāsāṃghika, Sarvāstivāda and other schools' doctrines, and one of the last such engagements that formed part of the canon as opposed to commentary. Commentaries continued to produce polemics against Mahāyāna and Tantric practices and even European Christian missionaries.²⁶⁸ In many ways, though, the doctrines the Theravādins developed and refined, expressed perhaps most fully in the *Paṭṭhāna* and later works by philosophers such as Anuruddhācariya (10th or 11th century CE), author of the *Abhidhammattha Sangaha*, is compatible with much of Dharmakīrti's thought in general if not in the details. It is to Dharmakīrti's thought that this work now turns.

SAMBANDHO NĀSTI TATTVATAḤ: DHARMAKĪRTI'S ARGUMENTS AGAINST RELATIONS

Dharmakīrti's thought is expansive, and deeply rooted in the debates concerning the sources of knowledge and processes of knowing reality, and hence is bound up in not only epistemological debates but metaphysics, logic, and philosophy of language. Each of these subjects is in fact of interest to an investigation into similarity and analogical reasoning, and indeed similarity (or its rejection) plays a part in each piece of Dharmakīrti's philosophy as it is, like the earlier Abhidhammikas, intensively nominalistic. As we know from the contemporary debates about nominalism and realism, such as those touched upon in chapters two and four, various answers can be demanded from the nominalists, particularly how to account for similarity and practices that seem to rely upon similarity recognition, such as predication and recognition of types of things. Particularly relevant is the *apoha* theory of

Chutima, "Northeast Thailand before Angkor: Evidence from an Archaeological Excavation at the Prasat Hin Phimai," *Asian Perspectives* 40, no. 2 (2001): 179–94; Phairot Phetsanghan, Songkoon Chantachon, and Boonsom Yodmalee, "Sema Hin Isan, the Origin of the Temple Boundary Stones in Northeast Thailand," *The Social Sciences* 4, no. 2 (2009): 186–90.

²⁶⁸ Shwe Aung and Caroline Augusta Foley Davids, eds., *Points Of Controversy or Subjects of Discourse: Being a Translation of the Kathāvatthu*, Translation Series / Pali Text Society 5 (London: Pali Text Soc, 2001), I.6-9, V.5, VI.6, II.1-4.

meaning, but given the space required to do justice to this theory of meaning, with its metaphysical and epistemological implications, it must largely be set aside as so much has already been.²⁶⁹ Instead, the rejection of relations found within the text the *Sambandhaparīkṣā* will be carefully examined to lay the foundation for our explorations of similarity and analogy in the South Asian debates. First, and as briefly as possible, some of Dharmakīrti's presumptions must be laid out in just enough detail as to understand what assumptions are being made behind the terse arguments that he provides.

Like the Theravāda Abhidhammikas, Dharmakīrti is both a nominalist and atomist in the sense that some normally “imperceptibly” small particulars are what give rise to our perceptions of everyday objects.²⁷⁰ It is the natures, or *svabhāvas*, of these particular *svalakṣaṇas* that account for their specific causal effects, including causing perceptions and judgments (“That is a pot”) within us. However, given that only these *svalakṣaṇas* exist, even though they may cause the *judgment of a perception* to be, “That is a pot,” there is a clear denial that such things as pots or people really exist. This denial is because Dharmakīrti rejects the existence of any distributed entities.²⁷¹ This means spatially distributed entities, temporally distributed entities, and recurrent entities are unreal, and hence universals are unreal as well as everyday objects, including people.

This rejection comes in part from a rejection of mereological sums much like his

²⁶⁹ For many interesting treatments and objections to *apoha* theory, and not only that of Dharmakīrti, see Mark Siderits, Tom J. F. Tillemans, and Arindam Chakrabarti, eds., *Apoha: Buddhist Nominalism and Human Cognition* (New York: Columbia University Press, 2011).

²⁷⁰ To say they are imperceptible is somewhat misleading, as Dharmakīrti is very explicit about this in the *Pramāṇavārttikam*: “*Sattvam upalabdhir eva.*” Dharmakīrti, *The Pramāṇavārttikam of Dharmakīrti: The First Chapter with the Autocommentary. Text and Critical Notes*, ed. Raniero Gnoli, Serie Orientale Roma 23 (Rome: Istituto Italiano Per il Medio ed Estremo Oriente, 1960), k.3.

²⁷¹ See, for example, the explicit rejection of distributed entities which would, according to Dharmakīrti, lack causal efficacy because distributed:
“*Sa pāramārthiko bhāvo ya eva arthakriyā-kṣamaḥ / idam eva hi vastv-avastunor lakṣaṇam yad arthakriyā-yogyatā ayogyatā / ca iti vakṣyāmaḥ / sa ca / arthakriyā-yogyo arthaḥ na anveti yo anveti na tasmāt kārya-sambhavaḥ tasmāt sarvaṃ sāmānyam anarthakriyā-yogyatvād avastu / vastu tu viśeṣa eva tata eva tan-niṣpatteḥ.*” Dharmakīrti, k.166-167.

Dharmakīrti (below) further emphasizes that in fact it is the particulars, *svalakṣaṇas*, that actually cause perception, have causal efficacy (by which they can cause perceptions at the least), and that other objects are merely “exclusions” (here, “*vyāvṛtti*”), which, being a negative, cannot actually have cause efficacy.

“*ato viśeṣa eva / sa eva arthas tasya vyāvṛttayo apare / tat-kāryam kāraṇam ca uktam tat svalakṣaṇam iṣyate / tat-tyāga-āpti-phalāḥ sarvāḥ puruṣāṇām pravṛttayaḥ / yad arthakriyākāri tad eva vastv ity uktam / sa ca viśeṣa eva.*” Dharmakīrti, k.171-172.

Abhidhammika cousins: what can be analyzed into constituents is ultimately unreal, and only those ultimately unanalyzable constituents will constitute ultimate reality. The Abhidhammika explanation as to why these particulars cannot form sums is that to do so would mean that they have extrinsic properties, but that would mean that analytically they are divisible (so their properties could be abstracted from them). These particulars, however, are absolutely indivisible, both logically and spatially. For the Abhidhammikas, these particulars have only intrinsic properties, and they are identical to those properties. Therefore, it would be wrong to predicate of them, “Particular x has property y” because particular x is nondifferent from property y—it just is property y. Therefore, there is no division between particulars and their properties, and therefore no substance ontology as with the Nyāya, Plato, or Aristotle and most realist philosophies. The same seems to hold true for Dharmakīrti.²⁷² *Svalakṣaṇas* cannot be spatially extended, because then, at least analytically they would be divisible (top part, bottom part, and so on) and likewise they cannot be temporally extended (earlier part, later part).²⁷³ Moreover, and perhaps stated even more forcefully by Dharmakīrti than the Abhidhammikas, these particulars are utterly unique and non-repeatable.²⁷⁴ Hence, each *svalakṣaṇa* is unique, sharing nothing, it would seem, with any other *svalakṣaṇa*.

One can already see how such a metaphysics would entail the rejection of similarity. Were there to be such things as relations, they would fly in the face of two of the central commitments of Dharmakīrti: that there are no real extended beings, since it appears relations would be extended to two

²⁷² “*Tatra apy anyāpohe na vyāvṛttir anyā anya eva vyāvṛttas tad-vyāvṛtter nivartamānasya tad-bhāva-prasaṅgāt / tathā ca vyāvṛtterabhāvaḥ / tasmād yā eva vyāvṛtīḥ sa eva vyāvṛtaḥ / śabda-pratipatti-bhedas tu saṃketa-bhedāt / na vācya-bhedo asti / nanu ca vācya-viśeṣa-abhāvāt saṃketa-bhedo apy ayukto dvayor eka-abhidhānāt / tathā ca vyatirekiṇyā vibhakter ayogas tasyā bheda-āśrayatvāt / dvayor eka-abhidhāne api vibhaktir vyatirekiṇī / bhinnam artham iva anveti vācye leśa-viśeṣataḥ.*” Dharmakīrti, *Pramāṇavārttikam*, k.59-60.

²⁷³ It is worth nothing that here the Abhidhammika make a concession and state that their particulars last only a moment, and are not actually temporally extended, but analytically all existing things have three temporal “parts”—a rising to be, a being, and a passing away. These are logically necessary for any existent thing, claim the Abhidhammas, and so it is possible that their *dhammas* have logical “constructed parts” but these do not mean the *dhammas* are reducible or analyzable into these parts.

²⁷⁴ That the Theravāda Abhidhammikas organize their *dhammas* into types seems to suggest some commonality among them, and ultimately it is argued that although utterly unique, they can be put in a typology as conditions or causes, with sameness of effect not implying sameness of properties. There is a tension there, certainly.

relata, and that the particulars would bear relations to one another and hence have separable, dependent properties or extrinsic properties. “But what about these judgments, 'That is a pot,' that do not seem to be in error?” one might ask. That is, given that similarity and repeatability are key parts of our cognitive lives, and that we are able to successfully deploy concepts such as types, Dharmakīrti owes us some account of concept formation. This account is elaborated on in his aforementioned theory of *apoha*, which can only be glossed over here to understand its employment in the *Sambandhaparīkṣā*.

Concepts are not formed, claims Dharmakīrti, by recognition of similarities, say between one pot and another, but instead by excluding all other concept-objects which, if treated like pots, would lead one to error or inappropriate action (such as putting one's hat on the cooking fire or trying to store water in one's cow). This denial of similarity recognition are a veridical cognition occurs by a rather complex causal theory of perception.²⁷⁵ The *svalakṣaṇa* are, as we have noted, causally efficacious. They cause in us perceptions. So for example, one sees the blue of the sky and the blue of the ocean, and one has the judgment, “Here are two blue things.” But what one actually has are two mental images—one of the ocean, and one of the sky. As effects caused by distinct particulars, these two images are particulars in themselves. And as particulars, they are, like all particulars, completely distinct and unique, and hence it is impossible that they actually share any qualities or properties, such as “being blue,” with one another. However, each of these images, which we might then assign secondary causal powers, can elicit only a certain range of judgments. Hence when one, without any defects, looks upon the ocean and the sky, one will not form the judgment, “Here are two orange things.” Some such judgments (concepts) are therefore excluded from being formed given particular causes of perception. The uniformity of judgment (“two blue objects”), however, requires more than just this exclusion (*vyāvṛtti*). It is that the images result in the exclusion of the *same* judgments that accounts for their sameness—they are alike in what they are different from, not because they share the

²⁷⁵ See Dharmakīrti, *Pramāṇavārttikam*, k.68-75.

same intrinsic properties.²⁷⁶ Both exclude judgments such as “This is red,” or “this is orange” while perhaps, given the different images, also differ in their exclusions (for example, “This is wet” might be a judgment made about the ocean and not the sky, and hence would exclude the sky but not drinking water, while “this is salty” would exclude drinking water but not table salt). While we might want to say then that it is their identical extrinsic properties, then, that makes them both “blue,” recall that extrinsic properties have been flatly rejected by the tradition. Instead, these “exclusions” are considered negatives, without existence (which means, without causal efficacy).²⁷⁷ Here, the pragmatic expectations that we have come into play since our expectations and (linguistic) conditioning in turn effect the judgments which we make about perceptions.²⁷⁸ Therefore, the judgments caused by mental images, which are in turn caused by the *svalakṣaṇa*, may be metaphysically in error although pragmatically successful. It is this theory that provides Dharmakīrti many of the tools he will use in his critique of relations, along with some that seem to be very novel for his time yet instantly recognizable to us today.

In the *Sambandhaparīkṣā*, two main sorts of objections are raised based on the assumption that, following the classical definition of a relation, that relations exist between two (or more) relata (*dviṣṭhaḥ sambandhaḥ*).²⁷⁹ The first considers the nature of specific relations, such as dependence, contact, and cause and effect; the second approach focuses on the “combinatorial” nature of relations since they relate two relata and seem therefore to exist “between” the two relata yet not wholly in either of them. This allows what could be characterized as a “locative” line of questions, asking where the relation exists. The strategy is to ask where the relation exists, and then show that either each answer is unsatisfactory because the relation itself “disappears” or the result is a contradiction or absurdity. For example, dependence (*pāratantrya*) might be taken as a paradigm of relationality, in which one thing

²⁷⁶ Dharmakīrti, k.109, 169.

²⁷⁷ Dharmakīrti, k.169.

²⁷⁸ Dharmakīrti, k.61.

²⁷⁹ Dharmakīrti states the definition clearly: “*dviṣṭho hi kaścit sambandho nāto 'nyattasya lakṣaṇam / bhāvābhāvopadhiryogaḥ kāryakāraṇatā yadi.*” Dharmakīrti, “Dharmakīrti: Sambandhaparīkṣa, 1-25,” k.11.

depends upon another—for example, the way a tree may depend on a seed for its existence. And given all the talk by the Buddhists of interdependent co-origination (Pali: *paṭiccasamuppāda*; Sanskrit: *pratītyasamutpāda*), this seems to be a relation that Buddhists would happily accept.

Here, though, Dharmakīrti attempts to show the relation of dependence is nonsensical. First, dependence would result in relations between things that exist and things that do not exist. In the example of a tree, if dependence was a relation, and relations require two relata, then either the non-existent tree depends on the existent seed, or the non-existent seed depends on the existent tree.²⁸⁰ How can the existence of the tree require the seed given the seed is non-existent? What is more, how can there be a relation when admittedly one of the relata is non-existent? The answer for Dharmakīrti is that they cannot. A similar critique is given of cause and effect, and in fact, occupies the bulk of the text. Despite the fact it is quite exciting, it, too, must be for the most part set aside as we examine the selections from the work that can be generalized to all relations.

The more general approach of Dharmakīrti's line of attack seeks to demonstrate his interlocutor cannot locate where the relation is. For example, if the relation is taken to be a union of the two relata (*rūpaśleṣa*), then there is one thing: the union, and not the two relata. Yet relations are taking as relating (at least) two relata, and hence if there is only one thing, then there cannot be any relation between them.²⁸¹ Pursuing this line of questioning, Dharmakīrti considers what if we concede that there is something that is a relation. Dharmakīrti brilliantly suggests then that a Bradley-Type Regress will emerge.^{282, 283}

²⁸⁰ “*para-apekṣā hi sambandhaḥ so asan katham apekṣate saṃś ca sarva-nirāśaṃso bhāvaḥ katham apekṣate*” Dharmakīrti, k.3.

²⁸¹ “*rūpa-śleṣo hi sambandho dvitve sa ca katham bhavet tasmāt prakṛti-bhinnānām sambandho na asti tattvataḥ*” Dharmakīrti, k.2.

²⁸² “*dvayor eka-abhisambandhāt sambandho yadi tad-dvayoḥ/ kaḥ sambandho anavasthā ca na sambandha-matis tathā*” Dharmakīrti, k.4.

²⁸³ Stephen Phillips also brings our attention to this regress by Dharmakīrti, and suggests it was from Dharmakīrti that the twelfth century Advaitin philosopher Śrīharṣa became aware of the regress. Phillips, *Classical Indian Metaphysics: Refutations of Realism and the Emergence of “New Logic,”* 22–23. Also see Phillips translation of the relevant sections of Śrīharṣa: Śrīharṣa, “Śrīharṣa on Distinctiveness and the Relation Regress,” in *Classical Indian Metaphysics: Refutations of Realism and the Emergence of “New Logic,”* trans. Stephen H. Phillips (Motilal Banarsidass Publ., 1997), 221–22.

This regress argument, as explained by Prabhācandra, should be familiar enough to us now.²⁸⁴ If we concede there are relations, we have two options. Either the relation just is the union of the two relata, in which case we have the union, which is one thing, and given a relation requires two relata, then, in fact, we do not have a relations—the earlier argument. The second option is we not only have the two relata, but we also have a third thing, the relation. However, how are the two relata then to be connected to this third thing, the relation? Such a connection would require a relation to connect the original relation to the two relata. However, what then connects this second order relation to the first order relation? Again, it seems a third order relation is required, and so on *ad infinitum*. Hence, as Prabhācandra concludes, “. . . knowledge of a relation between relata is unreal because there is nothing to a relation but the relata.”²⁸⁵

Relations, however, are part of our lived experience; they order the universe around us in ways that properties do not, and therefore they seem veridical, and given the proclamation observed earlier that “*sattvam upalabdhir eva*” it would seem we have some reason—perception—for believing there are in fact relations. As we already observed above, however, although perception is of reality, our judgments of perception do not necessarily concur with reality. This difference between perception and judgments of perception, as discussed in the *Sambandhaparīkṣā*, will foreshadow the rest of this chapter.

Although the relata are in fact distinct, it is the cognitive function of “imagination” (or perhaps “conceptualization” is a better word), “*kalpanā*,”²⁸⁶ that results in their “mixture/joining.”²⁸⁷ The exact

²⁸⁴ Dharmakīrti and Prabhācandra, “Dharmakīrti: Sambandhaparīkṣā, with Prabhācandra’s Commentary,” k.4.

²⁸⁵ “*tanna sambandhinoḥ sambandhabuddhirvāstavi; tavadyatirekeṇānyasya sambandhasyāsambhavāt.*” Dharmakīrti and Prabhācandra, k.4.

²⁸⁶ Tillerman points out the following definition of *kalpanā* given by Dharmakīrti in the *Nyāyabindu* I.5: “*abhilāpasamsargayogyapratibhāsā pratītiḥ kalpanā.*” “Conceptual thought is a cognition in which there is a representation that can be associated with words.” Tillerman’s translation, Tom Tillemans, “Dharmakīrti > Notes,” Stanford Encyclopedia of Philosophy, accessed February 2, 2017, <https://plato.stanford.edu/entries/dharmakīrti/notes.html>.

²⁸⁷ “*tau ca bhāvau tadanyaśca sarve te svātmani sthitāḥ / ityamiśrāḥ svayaṃ bhāvāstān miśrayati kalpanā.*” Dharmakīrti, “Dharmakīrti: Sambandhaparīkṣā, 1-25,” k.5.

Prabhācandra commentary further clarifies this: “So the relata are unmixed in nature; the imagination mixes/joins them.” “*tenāmiśrā vyāvṛttasvarūpāḥ svayaṃ bhāvāḥ, tathāpi tānmiśrayati yojayati kalpanā*” Dharmakīrti and

nature of this imagining or conceptualizing as it relates to relations is brought out more clearly in the critique of cause and effect, and although space does not allow a thorough investigation of the specifics of the argument, some key points from it may be generalized to the critique of relations in general, and specifically how the extreme nominalism of the Buddhists can “explain away” similarity relations. In developing the critique, first, the structure of language itself is pointed out as a source of error in the subject-predicate structure that suggests that there is an agent and an action.²⁸⁸ Prabhācandra, in his commentary, invokes momentariness (*kṣaṇikatva*) as the reason this cannot be so, as the agent cannot seemingly exist at the same time of the action she was the cause of if the cause and effect are both momentary.²⁸⁹ This response echoes *kārikā* two on dependency, and the following *kārikā* (the two are presented back-to-back) seemingly reinforces Prabhācandra's explanation.²⁹⁰ This explanation, when generalized, is a weak one, however, as it depends then on the doctrine of momentariness, a doctrine that one cannot describe as well accepted outside the Buddhist philosophers. While the previous arguments against relations are general, the denial that the chef can be present at the dinner he prepared is unlikely to strike many as obvious, and at worst, obviously false. While arguments like that illustrated with the example of a seed and a tree (how can there be a relation between them since when one exists the other does not) are general, the argument that an actor cannot exist at the time as her action is unlikely to find much traction unless bolstered by the entire argument for momentariness or for an event ontology as developed by Dharmakīrti and the Theravāda Abhidhammikas.²⁹¹

Prabhācandra, “*Dharmakīrti: Sambandhapariksa, with Prabhācandra's Commentary*,” k.5.

²⁸⁸ “*tāmeva cānurundhānaiḥ kriyākāravācīnaḥ / bhāvabhedaḥpratītyartham saṃyojyante 'bhidhāyakāḥ.*” Dharmakīrti and Prabhācandra, “*Dharmakīrti: Sambandhapariksa, with Prabhācandra's Commentary*,” k.6.

²⁸⁹ “*na khalu kārakāṇāṃ kriyayā sambandho 'sti; kṣaṇikatvena kriyākāle kārakāṇāmasambhavāt.*” Dharmakīrti and Prabhācandra, k.6.

²⁹⁰ “*kāryakāraṇabhāvopi tayorasahbhāvataḥ / prasiddhyati katham dviṣṭho 'dviṣṭhe sambandhatā katham.*” Dharmakīrti and Prabhācandra, k.7.

²⁹¹ The Theravāda Abhidhammikas' argument for momentariness is actually quite simple, however.

1. All entities have all their properties necessarily and all properties are strictly intrinsic.
2. Necessarily, for any and all x and any and all y, x is identical to y iff for any property x has, y has, and for any property y has, x has (the Identity of Indiscernibles).
3. For any and all x, if x at t₁ and x at t₂ differ in their properties, then x at t₁ and x at t₂ are different entities.
4. For any all effects y of any and all causes x, y must differ from x in at least one of its properties; otherwise, no effect has been caused as x has remained unchanged.

Had the argument against causation have ended here, much of what followed in the *Sambandhaparīkṣā* could possibly be chalked up to philosophical dogmatism. But Dharmakīrti is in no dogmatic slumber, and takes his form of empiricism to that logical conclusion Hume reached centuries later. The arguments against causation do not end with the invocation of momentariness. Instead, imagination/conceptualization (here, *vikalpā*) is invoked again in the explanation of causation, and not as the product of the subject-predicate divide, but instead as responsible for the (faulty, for Dharmakīrti) inference of causation from constant conjunction.²⁹² This is the culmination of a discussion as to how one comes to discern a cause and effect relationship. One learns that something is an effect of a cause by observing when the cause is present, it leads to the effect, but when the cause is absent, the effect is absent.²⁹³ However, this knowledge is just that—the presence or absence of the “cause” and the presence or absence of the “effect.”²⁹⁴ There is not something in addition to that; there is not knowledge of some third thing, the relation between the “cause” and the “effect” and hence knowledge of the relation of “cause and effect” is in fact imagined and therefore false.^{295, 296}

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5. For any time, and for any and all x, x at t₁ causes x at t₂.
 6. For whatever time, whatever changes from t₁ to t₂ is momentary.
 7. Therefore, all entities are momentary.

Rospatt, in his study of the Buddhist doctrine of momentariness, provides a cursory discussion of the doctrine among Theravādins and suggests that the doctrine was possibly introduced by Buddhaghōṣa. The sole evidence he provides for this is a single passage in the *Kathāvatthu*, which states that the the Uttarapathakas held a doctrine of momentariness, and the Uttarapathakas were “a people from North India, from which Buddhaghōṣa also hailed.” Alexander von Rospatt, *The Buddhist Doctrine of Momentariness: A Survey of the Origins and Early Phase of This Doctrine up to Vasubandhu*, *Alt- Und Neu-Indische Studien* 47 (Stuttgart: F. Steiner Verlag, 1995), 34. This is hardly incontrovertible evidence, particularly given that elements of what would become the fully-developed doctrine of a *khaṇika* (Sanskrit: *kṣaṇika*) are present in the *Yamaka*, usually dated by scholars to around the first century CE—four hundred years before Buddhaghōṣa.

Wan Doo Kim's research has instead shown the the doctrine of momentariness is present in Old Sinhalese commentaries, drawing on elements of the canon. See Wan Doo Kim, *The Theravadin Doctrine of Momentariness: A Survey of Its Origins and Development* (University of Oxford (United Kingdom), 1999), <http://search.proquest.com.eres.library.manoa.hawaii.edu/docview/900288379>.

²⁹² “*etāvanmātratattvārthāḥ kāryakāranagocarāḥ / vikalpā darśayantyarthān mithyārthā ghaṭitāniva.*” Dharmakīrti and Prabhacandra, “Dharmakīrti: Sambandhaparīkṣa, with Prabhacandra’s Commentary,” k.17.

²⁹³ Dharmakīrti and Prabhacandra, k.8.

²⁹⁴ Dharmakīrti and Prabhacandra, k.16.

²⁹⁵ Dharmakīrti and Prabhacandra, k.17.

²⁹⁶ One could accuse Dharmakīrti of begging the question, since one could very reasonably hold that “presence” and “absence” are themselves relations, that is the relation between an object and a spacial location, and just such an analysis has been given by Indian philosophers. For an interesting discussion of absences, see Arindam Chakrabarti, “The Unavoidable Void: Nonexistence, Absence, and Emptiness,” in *Nothingness in Asian Philosophy*, ed. J. L. Liu and D. Berger (New York, N.Y.: Taylor & Francis, 2014), 3–24.

We can compare this argument with the familiar one from Hume. Hume claimed that, based on experiences (as the presumption cannot come from the pure relation of ideas) that “we always presume, when we see like sensible qualities, that they have like secret powers, and expect that effects, similar to those we have experienced, will follow from them.”²⁹⁷ Yet, our observations of causation are “This this, then that.” Yet Hume, like Dharmakīrti, notes that there must be some link, some third thing, from the first proposition to the second given that there is no logical (“analytic” or *a priori*) connection between the first element and the second.²⁹⁸ Hence, if one eats meat, and then feels ill, there is no logical connection between “eating meat” and “feeling ill” that allows one to determine eating meat causes one to feel ill, and no contradiction is implied when one considers the possibility that eating meat did not cause the ill feeling. Rather, it is custom and habit, principles of association, that lead us to the general form of reasoning that, given constant conjunction, there must be causation, and creates the expectation that “for the future, a similar train of events with those which have appeared in the past.”²⁹⁹ Hence that “third thing” is actually imagined by us and reified as the causal relation. Hence, according to Hume and Dharmakīrti, analogical reasoning gives rise to the notion of causation!

To summarize the general attack on relations, then: through imagination/conceptualization through conventions of language and association (*kalpanā*) or the related act of imagination/conceptualization (*vikalpā*), when presented with two objects, relations are constructed. Relations, then, are a product of conceptualization, and concepts fail to align with the ontological realities of the world. Hence, talk about relations is ultimately false. The knowledge expressed in relations is reducible to talk about the relata, in that it can be shown that, if the relata are two and distinct, it is impossible some third thing, a relation, “link” them; or that in fact there is only one thing, not two, and logically therefore there cannot be a relation given the definition as requiring (at least) two

²⁹⁷ David Hume, *An Essay Concerning Human Understanding* (Oxford : New York: Oxford University Press, 1979), 4.2.16/33.

²⁹⁸ Hume, 4.2.16/34.

²⁹⁹ Hume, 5.1.5/43, 5.1.6/44.

relata; or, in one way or another, that what is taken as relational knowledge is reducible to other information as in the case of causation reducing to knowledge of presence and absence rather than some third thing, a relation. The claim that relations are merely the results of *vikalpā*, and that the relation of similarity can be explained by exclusion (*apoha* or *vyāvṛtti*), will largely shape the Indian debates on the nature and knowability of similarity. However, as we will see, the Prābhākara Mīmāṃsā offer a positive theory of similarity as radical as the Buddhists' negative theory.

SĀDRŚYA AND UPAMĀNA: SIMILARITY AND ANALOGY

In what follows, similarity (*sādrśya*) and analogy or comparison (*upamāna*) are explored together as the two concepts, one ontological and the other epistemological, are inseparable in the context of the South Asian debates. The very fact that we did so much to unpack the metaphysics in previous chapters, only to realize we could not say what relations in fact exist, perhaps is an illustration of the value of this approach. The views of three different philosophical alignments will be explored.

First, we will then return to the Buddhists to examine their arguments against *sādrśya* and *upamāna*. Here, works from Ratnakīrti's (eleventh century CE), the *Sarvajñasiddhiḥ* and *Pramāṇāntarbhāvaprakaraṇam*, will be useful for the Buddhist arguments against *upamāna*, having already explored their rejection of relations in general.³⁰⁰, ³⁰¹ Although chronologically later than some of the other texts that will be shortly considered, beginning with the rejection is useful as it allows us to

³⁰⁰ There is a certain objection to be made for “mixing philosophies” here as Ratnakīrti lived nearly 400 years after Dharmakīrti. The present author does not mean to put Dharmakīrti's words into Ratnakīrti's mouth, but does not think that the arguments presented in the *Sambandhaparīkṣā* are unlikely to have encountered any strong disagreement from Ratnakīrti, and that the spirit of Dharmakīrti's earlier arguments accord with those of Ratnakīrti on *upamāna* and *sādrśya*.

³⁰¹ “Ratnakīrti: Nibandhavalī,” accessed March 9, 2014, http://gretel.sub.uni-goettingen.de/gretel/1_sansk/6_sastra/3_phil/buddh/bsa075_u.htm.

“Ratnakīrti: Nibandhavalī,” accessed March 9, 2014, http://gretel.sub.uni-goettingen.de/gretel/1_sansk/6_sastra/3_phil/buddh/bsa075_u.htm.

Ratnakīrti, “Sarvajñasiddhiḥ,” SARIT - Search and Retrieval of Indic Texts, accessed March 22, 2017, <http://sarit.indology.info/exist/apps/sarit/works/Sarvaj%C3%B1asiddhi%E1%B8%A5.html>.

Ratnakīrti, “Pramāṇāntarbhāvaprakaraṇam,” SARIT - Search and Retrieval of Indic Texts, accessed March 22, 2017, <http://sarit.indology.info/exist/apps/sarit/works/Pram%C4%81%E1%B9%87%C4%81ntarbh%C4%81vaprakara%E1%B9%87am.html>.

reconstruct how each view might respond to the objections which the Buddhists have laid out. The Buddhist view of veridical cognition and conceptualization will be just as key as they were in the rejection of relations in general, and as such coincide with the challenge stated at the end of the previous chapter.

Next, we will consider the Nyāya-Vaiśeṣika views up to Udayanācārya (tenth century CE) as expressed in the *Nyāya Sūtras* of Gautama (perhaps as early as second century BCE or late as second century common era; for dating of Gautama, see Popper³⁰²), the *Nyāyalīlāvātī* of the Vaiśeṣika philosopher Vallabha (1479–1531 CE), and other sources such as Vātsyāyana's commentary (c.450–500 CE), the *Nyāyavārttika* of Uddyotakāra (c. sixth–seventh century), and Vācaspati Miśra's (ninth century) *Tātparyatīkā*.³⁰³ Some consideration will be given to the “New Nyāya,” or Navyanyāya school, primarily as expressed in the *Nyāysiddhāntamuktāvalī* of Viśwanātha Pañcānana (1600 – 1699 CE) and its commentary by Dinakarī (eighteenth century CE).³⁰⁴ We will have occasion to refer to the *Upamānacintāmaṇi* of Gaṅgeśa (late twelfth century CE) as we consider the views of the Prābhākara Mīmāṃsā, but Gaṅgeśa's views will not be presented themselves. This short exposition of the Nyāya perspective(s) forms what we might think of as a common sense realist view of relations yet, as we have already seen, not one that makes the mistakes of Russell and others who have tried to treat relations as of the same *type* as universals.

Following a brief exposition of the views of Kumārila Bhaṭṭa (seventh CE) to better set the

³⁰² *The Encyclopedia of Indian Philosophies, Volume 2: Indian Metaphysics and Epistemology: The Tradition of Nyaya-Vaiśeṣika up to Gaṅgeśa* (Princeton: Princeton University Press, 2015), 220–21.

³⁰³ Akṣapāda Gautama, *Nyaya Sūtras of Gautama*, n.d.

Gautama, “Gautama: Nyayasutra, with Bhasya.”

Vallabha, *Nyāyalīlāvātī*.

Uddyotakāra, *Nyayabhasyavartikka of Bharadvaja Uddyotakara*, ed. Anantalal Thakur, First edition (New Delhi: Indian Council of Philosophical Research, 1997).

Vācaspati Miśra, *Nyāyavārttikatātparyatīkā*, ed. Anantalal Thakur (New Delhi: Indian Council of Philosophical Research, 1996).

Vācaspati Miśra, “Gautama: Nyayasutra with Vacaspatimisra’s Nyayavarttikatātparyatika,” accessed July 16, 2017, http://gretel.sub.uni-goettingen.de/gretel/1_sanskr/6_sastra/3_phil/nyaya/nystik_u.htm.

³⁰⁴ Phillips, Stephen H. *Epistemology in Classical India: The Knowledge Sources of the Nyaya School*. New York, N.Y.: Routledge, 2013.

Vattanky, *Nyaya Philosophy of Language: Translation and Interpretation of Kārikāvalī, Mukṭāvalī, and Dinakarī*.

stage, the Prābhākara Mīmāṃsā view will be considered primarily through the *Prakaraṇapañcika* of Śālikanāthamiśra (tenth century CE) but also in the *Upamānacintāmaṇi* of Gaṅgeśa.³⁰⁵ It is of interest because, as we shall see, not only do they, like the Nyāya, hold that *upamāna* is a *pramāṇa* but further argue the extraordinary view that, given knowledge from *upamāna*, *sādrśya* is itself a unique ontological entity, irreducible to other entities such as properties or relata, attacking the Nyāya and Buddhist views along the way. These debates will deepen our understanding that there are both ontological and epistemological dimensions to this question, “What is knowing by analogy?” From there, we will be prepared then to move on and explore this question within the logical and jurisprudential traditions of Islamic in the subsequent sections of the chapter.

THE BUDDHIST REJECTION OF SĀDRŚYA AND UPAMĀNA

Ratnakīrti's rejection for *upamāna* as a veridical means of knowing is based upon an ontological rejection of the possibility of similarity, which is based itself on an epistemological argument! He argues that since epistemologically there is nothing to be experienced as *sādrśya*, and *sādrśya* must be the metaphysical basis of *upamāna*; therefore *upamāna* cannot be a veridical means of knowing!³⁰⁶ Both examining the view of Kumārila Mīmāṃsika and echoing the *Nyāya Sūtras* of Gautama (“*prasiddhasādharṃyāt sādhyasādhanamupamānam iti*”) that the knowledge of similarity results when one sees an object and recognizes in it a property known to inhere in some other object, and hence one comes to have knowledge, “This is similar to that,” with “similarity” being the object of

³⁰⁵ Śālikanāthamiśra and Krishnacharya Tamanacharya Pandurangi, *Prakaraṇapañcikā of Śālikānātha: With an Exposition in English* (New Delhi: Indian Council of Philosophical Research, 2004).

³⁰⁶ It is worth noting that this also depends on the Buddhists not making a distinction between an act of knowing and what is known.

“Indian thinkers generally adopt a causal approach to knowledge. Knowledge is taken to be an outcome of a particular causal complex in which the most efficient instrumental cause (*kaṛaṇa*) is technically known as *pramāṇa*. In the Buddhist tradition, the word *pramāṇa* refers to both the process of knowing and the knowledge acquired on that basis. Buddhists do not entertain the distinction between the process of knowing (*pramāṇa*) and its outcome (*pramāṇaphala=pramā*).” S. R. Bhatt and A. Mehrotra, *Buddhist Epistemology*, Contributions in Philosophy 75 (Westport, CT: Greenwood Press, 2000), 13.

knowledge, Ratnakīrti provides his working definition of *upamāna*.³⁰⁷ It is the view of Kumārila, however, that the *upamāmiti* or resulting knowledge of *upamāna* is *sādrśya*, upon which Ratnakīrti sets his philosophical sights.

Ratnakīrti seems to accept that picture to a large extent, but he simply denies that there is any third thing, *sādrśya*. That is, there are just the two relata (the two *svalakṣaṇas*, or the two likewise unique yet misleading conceptualized perceptions, recalling that there is no difference in the relata and their properties).³⁰⁸ There is an experience of this, and there is an experience of that. There is no experience of some third thing, similarity.³⁰⁹ We here hear the echoes of Dharmakīrti on relations in general.³¹⁰ Therefore, the conclusion that this is like that is the result of a mental construction and not something that is experienced when experiencing this or experiencing that, in part because it is nowhere to be experienced (not being in this, and not being in that). Hence, he concludes: “*ato nopamānaṃ pramāṇamiti*.”³¹¹

Dharmakīrti's earlier attack on universals (and the establishment of the *apoha* theory of meaning) likewise denies that similarities exist. Because of habituation of conceptualization, one comes to erroneously believe that “this is like that” and hence forming notions of similarities (shared

³⁰⁷ Ratnakīrti, “Ratnakīrti: Nibandhavalī,” Nibandh 97.

³⁰⁸ Ratnakīrti, Nibandh 101.

³⁰⁹ Ratnakīrti, Nibandh 102.

³¹⁰ Dharmakīrti delivers a different attack of sorts on this question. Since all veridical knowledge is of either a *svalakṣaṇas* or a *sāmānya svalakṣaṇas*, and *svalakṣaṇas* and *sāmānya svalakṣaṇas* can only be known by perception or inference, then if *upamāna* results in veridical knowledge, *upamāna* must be either a perception or an inference because only these *pramāṇas* result in veridical knowledge. *Upamāna* is not perception or an inference, and therefore *upamāna* is not a *pramāṇa*. Hence, if I am doing justice to Dharmakīrti here, his critique of *upamāna* is based primarily in his theory of epistemology rather than an attack on the ontology of *sādrśya* (which is treated separately in his attack on universals). Although this presentation makes the argument look a bit like one from dogma, it critically rests on Dharmakīrti's larger epistemological theory in which something that does not result in definitive and determinative knowledge (*bhāvābhāvānīyāta svabhāva*) cannot be a *pramāṇa*, such as testimony. For a more detailed discussion on this matter, see Dunne pages 71-91 and 113-116. Dunne, *Foundations of Dharmakīrti's Philosophy*. Two other useful works are Lata S. Bapat, *Buddhist Logic: A Fresh Study of Dharmakīrti's Philosophy* (Delhi, India: Bharatiya Vidya Prakashan, 1989), 95–222; Bhatt and Mehrotra, *Buddhist Epistemology*. This argument is, however, certainly similar to the argument given by Śāntarakṣita in his *Tattvasaṅgraha* that, since there are only two *pramāṇas*, perception and inference, anything else proposed is either not a *pramāṇa* or is one of the former two. He states, “In fact, there cannot be any form of cognition except the two (already discussed); because all the others that have been postulated either do not possess the character of the “right form of cognition” or are included in these two.” Śāntarakṣita and Kamalaśīla, *The Tattvasaṅgraha of Śāntarakṣita: With the Commentary of Kamalaśīla*. Vol. 2: [...], trans. Ganganatha Jhā, Repr. [of the ed.]: Baroda, 1939, vol. 2 (Delhi: Motilal Banarsidass, 1986), k.1488.

³¹¹ Ratnakīrti, “Ratnakīrti: Nibandhavalī,” Nibandh 101.

universals or shared identities) through conceptualizing things as similar. Hence, this mistaken conceptualization is itself applied to the unique particulars, and they are thought of as similar when in actuality, they are not.³¹² Similarities, then, for both Dharmakīrti and his predecessor, Ratnakīrti, are illusory and both offer arguments, albeit different ones then, on why analogy cannot be a means of knowing.

NYĀYA-VAIŚEŚIKA AND NAVYA-NYĀYA VIEWS OF SĀDRŚYA AND UPAMĀNA

As we have already observed, as early as the *Nyāya Sūtras* of Gautama was *upamāna* accepted as a *pramāṇa*: “*prasiddhasādharṃyāt sādhyasādhanam upamānam*” or “analogy (*upamānam*) is the knowledge (of the *sādhyā*) from known (*prasiddha*) similarity, or “Comparison is the knowledge a thing through its similarity to another thing previously well known.”³¹³ Just what this passage means, however, is not entirely clear as it takes for granted an understanding of just what constitutes known similarity, and it is unclear whether what is being defined is knowledge that results from similarity (*upamiti*) or the cause of such knowledge. The commentaries of Vātsyāyana, Uddyotakāra and the extensive comments of Vācaspati Miśra clarify that *upamānam* is here meant to signify *upamiti*, and therefore Gautama is defining what is knowledge from analogy rather than the process or cause of such knowledge.³¹⁴ This clarification does not resolve the remaining problem—what is meant by “known similarity” or *prasiddhasādharṃya*? What is analogical knowledge?

Vātsyāyana explains that it is knowledge of the relation of word to its object through known similarity—that is, the knowledge of the meaning relation.³¹⁵ Hence, a sentence “The bison is like the

³¹² “*ekapratyavamarśasya hetuvād dhīr abhedinī/ ekadhīhetubhāvena vyaktīnām apy abinnatā.*” Dharmakīrti, *Pramāṇavārttikam*, k.109.

³¹³ Gautama, *Nyaya Sutras of Gautama*, 1.1.6. Vidyabhushan's translation.

³¹⁴ For example, see Vātsyāyana's commentary: “*prajñātena sāmānyāt prajñāpanīyasya prajñāpanam upamānam iti/ yathā gaur evaṃ gavaya iti*”. Gautama, “Gautama: Nyayasutra, with Bhasya,” 1.1.6.

³¹⁵ “*kiṃ punar atropamānena kriyate? yadā khalv ayaṃ gavā samānadharmam pratipadyate tadā pratyakṣatas tam artham pratipadyata iti, samākhyāsambandhapratipattir upamānārtha ity āha/ yathā gaur evaṃ gavaya ity upamāne prayukte gavā samānadharmam artham indriyārthasannikarṣād upalabhamāno 'sya gavayaśabdaḥ samjñēti samjñāsamjñīsambandham pratipadyata iti*” Gautama, 1.1.6.

cow” then is an analogy, and the understanding of the meaning relations of word and object (taking meaning to be correspondence) is the resulting knowledge, or *upamiti*. The problem here, however, is that in this case, it seems that knowledge from analogy is purely linguistic; this undermines the claim that *upamāna* is a distinctive means of knowing, since it is possible it could be reduced to knowledge through words, or *śabda* (often translated as “testimony”), and indeed some the opponents of the Nyāya will attempt just such a critique of their theory.³¹⁶ This still fails, however, to explain what is the known similarity that girds this linguistic understanding as sure surely similarity, upon which this knowledge rests, is not purely linguistic.³¹⁷ To answer this question, we must turn our attention for the moment to the Nyāya-Vaiśeṣika theory of *sādrśya*.

The classical definition of similarity that we find in the *Nyāyalīlāvātī* of the Vaiśeṣika philosopher Vallabha has already been referred to multiple times, and it is this that forms the definition taken up and expanded upon by the Nyāya-Vaiśeṣika philosophers: *taddhi sāmānyāderanekavṛttitvam . . . sādrśyam*, that is: similarity is the presence of the same property (or properties) (*sāmānya*) in multiple substrates.³¹⁸ As we have already observed, the Nyāya-Vaiśeṣika philosophers saw that this definition also distinguished similarity from universals (*sāmānya*) in that

³¹⁶ The recognized four means of knowing or *pramānas* of the Nyāya: perception (*pratyakṣa*), inference (*anumāna*), analogy (*upamāna*), and word or testimony (*śabda*). Kumāri Mīmāṃsika argues that *upamiti* is not reducible to linguistic knowledge. The objections of Kumāri, who argues that if *upamāna* is to be understood as the relation of word-meaning, it can be reduced to *śabda* and is therefore would not a separate *pramāṇa*, but in fact this is not the case, cannot be rehearsed here. For a useful discussion drawing primarily on Śabara, see Uma Chattopadhyay, “Mīmāṃsā Theory of Upamāna,” in *Dishonoured by Philosophers: Upamāna in Indian Epistemology* (New Delhi: D. K. Printworld, 2009), 29–36.

³¹⁷ Recall the earlier observations by Monima Chadha that we recognize the same types of things even if bereft of knowledge of their names; note, however, this “similarity recognition” is analyzed as *pratyabhijñā*, recognition, an element of perception (*pratyakṣa*), and it not thought to constitute *upamāna*. See Chadha, “On Knowing Universals.” In fact, Vācaspati Mīśra observes that the definition of Gautama alone would open up the possibility that recognition is *upamāna*, and therefore seeks in his commentary to restrict it. See Vācaspati Mīśra, *Nyāyavārttikatātparyāṭikā*, 1.1.6. However, as it was suggested in chapter one and will be argued near the conclusion of this chapter, a distinction between recognizing X *again* as X and recognizing Y as like X seems to be illegitimate as both seem to result from the same perceptive and cognitive processes, the only difference being matters of degree or content rather than the ways of knowing themselves. For example, one can mistake a blue pot that one sees before oneself as a blue pot one saw earlier; clearly, this is a case of false recognition because of misidentification, but clearly a case of correct perception of the similarity between the two pots; the only mistake is thinking that the present pot is absolutely similar to the previous pot, when in fact, it is not. What else, though, could recognition be, however, than the perception of very high degrees of similarity (not always absolute because, for example, we may recognize a former teacher despite him or her having gray hair now, and so on. This is the issue of recognition of a respect to a degree of tolerance.)?

³¹⁸ Vallabha, *Nyāyalīlāvātī*, 1:70.

while a universal could be said to inhere in one substrate, and hence could be predicated of it (“The sky is blue”), the same was not true with similarity as similarity could not be predicated of a single substrate (“The sky is similar”).³¹⁹ Furthermore, there cannot be a universal of “having a property in common” because such a universal would be imperceptible unless one were to perceive that other which had such a common property, but as universals do not require counter-correlates, such a universal as “having a property in common” is disallowed as being a true universal.³²⁰ Therefore, while properties (we should include logical constructions, or *upadhi*, among these and not only those properties recognized as what we might term “natural kinds” or *sāmānya*) can be predicated of individual substances, similarity cannot be, and therefore similarity and properties must be ontologically different.³²¹ This also accounts for the justification of why we may say that “horseness” and “redness” are similar in they are both universals without implying that they share the universal of “universalness.” On this analysis then, it would seem that similarity is just a logical construction, much like “universalness,” and just like universalness, then, it would ultimately be unreal. This could, it seems, make it the result of *vikalpā* and put the Nyāya-Vaiśeṣika philosophers in bed with the Buddhists. It is not something else, *sādṛśya*, that is the object of knowledge (*prameya*) of *upamāna* but rather the meaning relation of word and object. Vattanky, in his introduction to the

Nyāysiddhāntamuktāvalī of Viśwanātha Pañcānana, has usefully summarized the “modern Nyāya

³¹⁹ This is the jist of Vardhamāna's commentary on the verse in the footnote immediately below. Vallabha, 1:76.

³²⁰ “*taccaikavyaktigraha.nasamayē 'ag.rhītamapi pratiyogigrahe 'vagamyata iti siddhim.*” Vallabha, 1:76.

³²¹ The Nyāya philosophers distinguish between true universals, *sāmānya* or *jāti*, perhaps best understood as natural kinds, and logical concepts, or *upadhi*, in order to avoid a number of problems associated with a theory of universals particularly when paired with their understanding that only universals can only inhere in substances. A simple problem illustrated the utility of this distinction: consider redness, blueness, and whiteness. All of these are universals of color, so they form a type of universals. This type-class could be explained by saying that the universal “colorness” (or maybe even “colorlessness”) inheres in the universals. Not so, say the Nyāya, as since universals are not substances, they cannot serve as the substrate for other universals (hence, there can be no “nested” universals). As such, this “type of universals” is to be explained as a merely constructed or merely logical type, an *upadhi*, and not a natural type or explained by predicating universals of universals. However, to say to a colorblind person, “Red is like green [in that it is a color],” the colorblind person who can see red (via redness) gains knowledge of green (greenness) though *upamāna* although not through the same *sāmānya* inhering in both redness and greenness. In the context of the discussions of similarity, *sāmānya* encompasses both *jāti* and *upadhi*. This is still very contemporary and hotly debated issue in Western philosophy, and the present author has been at several heated discussions on the issue at national philosophy conferences over the past several years in which the idea of “the properties of properties” seems almost to bizarre to even contemplate.

view.”

A forest-dweller informs a villager that the denotative function of the word *gavaya* is in that which is similar to a cow. Then going to the forest the villager sees an animal similar to a cow. Such a knowledge of similarity (*gosādṛśyajñānam*) is the instrumental cause from the knowledge arising from Comparison [*upamāna*]. The recollection of the sentence conveying the meaning of similarity (*atideśavākyārthasmarāṇam*) which was uttered by the forest dweller is the operation of the instrumental cause. The resulting knowledge of the denotative function of words like *gavaya* etc. is *upamiti*, knowledge arising from comparison.³²²

Although this is not the only Nyāya view discussed in the *Nyāysiddhāntamuktāvalī*, it is the only one accepted by its author. But this view, it seems, is just as vulnerable to the earlier critiques of Kumārila Mīmāṃsika as the earlier Nyāya-Vaiśeṣika view. That is, this view collapses into verbal knowledge or knowledge from testimony rather than being a distinct *pramāṇa*. Not so, comes the reply by the Naiyāyika, because the knowledge arises not when the villager is told “the denotative function of the word *gavaya* is in that which is similar to a cow” but rather when he sees the *gavaya* and recollects this earlier testimony. Were the knowledge purely linguistic, then the villager would have gained *upamiti* just upon hearing, “A *gavaya* is like a cow.” Nor is the knowledge purely perceptual, because through perception alone one does not have knowledge of the form “the denotative function of the word *gavaya* is in that which is similar to a cow” because knowledge of such a form can only come from the recollection of the previous testimony. Hence, while language and perception both play a role in *upamāna*, it is not reducible to one or the other, and hence must be a different *pramāṇa*.

There is a problem with this analysis, however, that have not been, as the present author knows, encountered in the debates. Let us say that the village-dweller has led quite the sheltered life, and in

³²² Vattanky, *Nyaya Philosophy of Language: Translation and Interpretation of Kārikāvalī, Muktāvalī, and Dinakarī*, 5:1–2.

venturing out to the forest for the first time, he encounters a buffalo (Sanskrit: *mahiṣa*). Now, he recalls what he has been told by the forest-dweller, and seeing that the buffalo is similar to the cow, he concludes that it is the buffalo which is the denotative function of the word *gavaya* (which refers to the gaur or gayal, two different animals and not buffaloes). Hence, he errs, and we should deny he has knowledge if knowledge is just that of the object-word relation. When, however, he perceives the buffalo, he comes to understand it is similar to the cow without needing any linguistic knowledge, and therefore can express such knowledge in a sentence using a demonstrative pronoun, such as “That is similar to a cow.” Such knowledge and such an expression clearly is a result of knowledge of similarity, it seems, but does not concern understanding the denotative function of any word. This objection will be considered again shortly in a form that was considered in the debates.

A BHATṬA MĪMĀMSIKA INTERLUDE

Before moving on to discuss the particular views of the Prābhākara Mīmāṃsā, a consideration of some of the Bhaṭṭa Mīmāṃsā philosophers' general objections against the Nyāya is helpful to lay the groundwork. Most importantly is that the Mīmāṃsāka view avoids the objection immediately above. In the *Śābarabhāṣyam*, a commentary on the *Mīmāṃsā Sūtra* of Jaimini by Śābara (second to fifth century CE³²³), *upamāna* is defined without further discussion as follows: “‘Upamāna,’ ‘Analogy’ — i.e. similitude — also brings about the cognition of things not in contact with the senses. For instance, the sight of the Gavaya (which is similar to the cow) brings about the remembrance of the cow (as being similar to the Gavaya).”³²⁴ Kumārila Bhaṭṭa (c. 700 CE), in his *Ślokavāritika*, restates the view by which the forester saying, “The *gavaya* is like the cow” is *upamāna* (not adding the additional

³²³ O. Gächter, *Hermeneutics and Language in Purva Mimamsa: A Study in Sabara Bhasya*, 2nd ed. (Delhi: Motilal Banarsidass, 1990), 9. There is some debate about Śābara's date, but Gächter accepts this as a reasonable range based on the work of other scholars.

³²⁴ Śābara, *Shabara Bhāṣya*, trans. Ganganatha Jha, vol. 1, Gaekwad's Oriental Series, LXVI (Calcutta: Oriental Institute Baroda, 1933), 15–16.

details of later seeing the *gavaya* which was important in the Navya-Nyāya explanation above).³²⁵

Kumārila notes that Śābara has already pointed out that were this view the actual case, then *upamāna* would be no more than verbal knowledge, and hence not a separate *pramāna*.³²⁶ Therefore, he rejects this view.

If, Kumārila proceeds to ask, *upamāna* is “just recognition of an object by means of (the perception of) another object similar to it—such recognition being exactly similar to remembrances brought about by constant pondering etc.” then how can it have any validity as something different from these remembrances?³²⁷ The suggestion is twofold: first, that just the invocation of a memory by something else has only the status of a recollection triggered by other means (such as wondering, “What color was her car?” and then recollecting that it was blue), and second, that recollection (*pratyabhijñā*) is specified by spatio-temporal markers (“The cow in the market,” “The man who as here”), while cognition of similarity is not “time-stamped” so to speak.

This argument seems deeply unsatisfactory, however. When I recognize my wife, that is not accompanied by a cognition of, “This is my wife from before” or “This is my wife from that place.” Likewise, when I recognize my home, or recognize the word “home” written on this page, my recognition is not marked by an accompanying cognition of “This is the word “home” which I learned before,” or “This is my house from yesterday.” There seems to be a failure on both Kumārila's part as well as the Naiyāyikas on how closely related, if not identical, perception of similarities and recognition are, even though ultimately Kumārila does not accept the argument of recognition. However, Kumārila continues this line of attack. If, for example, the villager sees the *gavaya*, having been told it is like the cow, and has a cognition “tinged with the idea similarity to a cow,” then is not this *upamāna*? In this case, too, though, Kumārila suggests, we just have a perception of the *gavaya*

³²⁵ Kumārila Bhaṭṭa, Pārthasārathimīśra, and Sucarita Mīśra, *Slokavartika*, trans. Ganganatha Jha, Second, Sri Garib Das Oriental Series 8 (Delhi: Sri Satguru Publications, Delhi, 1983), 222–23, <http://archive.org/details/slokavartika015341mbp>.

³²⁶ Kumārila Bhaṭṭa, Pārthasārathimīśra, and Sucarita Mīśra, 223.

³²⁷ Kumārila Bhaṭṭa, Pārthasārathimīśra, and Sucarita Mīśra, 223.

and we have a remembrance of what were were told—if nothing new is added (besides the perception of the *gavaya* and the remembrance of the forester's words) there is is nothing else besides perception and remembrance (and recognition being “no more than remembrance” and being described as just a “repetition of a former cognition”), and therefore not some additional and unique *pramāna*.^{328, 329} And even though the recollection of the testimony of the forester seems to preclude the knowledge being merely from perception, Kumāriḷa wisely notes that if one who knows of cows sees a *gavaya* in the forest, without having been told “a *gavaya* is like a cow,” one will still be able to recognize its similarity with the cow. Remembrance of the foresters words seem to add nothing, and he flatly rejected that it is the knowledge or the relationship between word and object that then is *upamiti*. Because, again, the similarity can be cognized even in the absence of a word to attach meaning to, the word-object analysis of *upamāna* is thrown out. This approach also overcomes the objection raised before about the misapplication of names, since the village-dweller will recognize the similarity with the cow when seeing a buffalo or a gaur, but if the knowledge is not linguistic, he will not err in his cognition, “That is like a cow.” Here, though, Kumāriḷa seems to imply that since this is the case, then *upamāna* is just perception.

In fact, it is this view that perception is involved that comes to shape his understanding. For he claims, if there is perception, there must be something perceived, and it seems clear that we perceive similarity just as we perceive other ontological entities such as universals.³³⁰ Hence, similarity must be a positive entity. It is worth here quoting at some length from Kumāriḷa:

³²⁸ Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, 223.

³²⁹ Here there seems to be a failure to differentiate remembrance and recognition. We may remember things such as our twelfth birthday party, something that is in principle impossible to recognize since it is an event that (assuming it was undocumented) is inaccessible except through remembering. If one supposes it was documented, and one sees a photograph taken of it, one may recognize that photograph as of that event. That may in turn lead one to remember details about the event, but recognizing the photograph as of the event is not the same as remembering the event. In fact, we often have the experience of recognition without any accompanying memories. For example, the present author has often seen a face that he recognizes but cannot recall from where. We are unlikely to remember how we came about our present vocabulary, but we do not fail to recognize words. Moreover, we know that just in terms of the neurology of memory and recognition that different neural structures seem to be involved in recognizing faces and snake-like objects apart from those areas involved in long-term memory (see the first chapter).

³³⁰ Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, *Slokavartika*, 225.

And Similarity differs from the (classes) in that it rests upon a conglomeration of classes; whereas the classes appear also severally among the objects of sense perception. In such cases too as where we recognize the similarity of parts, we have the Similarity resting upon the fact of the homogeneity between the parts of each of these parts In cases where we have the recognition of a single class as belonging to the principle objects themselves (and not to their parts), there we have the notion (of identity) such as "this is that very thing"; and where there is difference, we have the notion of Similarity only.³³¹

This passage requires some unpacking. First, there is a concern to differentiate similarity from classes (*jāti*) or universals. Universals are seen in different objects, but similarity requires groups of objects.³³² Hence, the perception of similarity is not identical to the perception of classes or *jāti*. That is not to deny that there is similarity, and indeed there is similarity between individuals (*vyaktīsādrśya*), and there is similarity within a class (*jātisādrśya*). Furthermore, similarity can be perceived between parts of objects, even though other parts (of the objects) differ. Hence, a water buffalo is similar to a (brahma) bull in that they both possess a dewlap, but only the bull has a hump. Therefore, the similarity between parts is not due to the buffalo and bull being of the same class (not due to *jātisādrśya*) but rather to the existence of the same "part-universal" in each of them (*avayavasāmānya*), thus it could be argued that "dewlapness" inheres in a part of each of them.³³³ However, this recognition of the same universal ("dewlapness") is not necessary for real similarity to exist. For example, in a painting of a cow, one can recognize the similarity to the actual cow although one would

³³¹ Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, 226.

³³² Kumāriḷa seems to undercut his own argument, as will be seen in what follows, with the claim that similarity can be perceived in a single object, but this is actually not the case. Kumāriḷa claims that in seeing one object, we can perceive its similarity with a previously known object. Recall the example above of the villager who sees the *gavya* and perceives its similarity with the cow, even though the cow is not present.

³³³ There is some debate in the tradition about similarity and its relation to parts and mereology; for example, could not we specify the properties of a cow that inhere in its parts ("hornness," "hoofness," "dewlapness") in such an exhaustive way as to preclude all other animals that may share many of these same properties. While interesting and worthwhile pursuing, they introduce another layer of complexity that is best dealt with outside of the present discussion.

not say that the quality of “dewlapness” inheres in the painting; hence, the similarity is actual, is related to a correspondence between the cow and the painted image of the cow, but does not come from the cow and the image actually sharing all these part-universals.³³⁴ If we accept this argument, then the classical definition given by Vallabha must also be in error since similarity can exist even when the same universal does not inhere in two different substrates. Kumāriila claims that while it may be true that the painting does not have a dewlap, there can still be shared universals, such as color, between the representation and the object represented, and it is brought out further by commentators who note that the two may have “structural resemblances.”³³⁵ In fact, as we will shortly see, Kumāriila argues in fact similarity can exist in a single object.

Finally, there is the idea that similarity is different from identity (a relationship we extensively explored in the last chapter). Here, identify is understood as identity *qua* some class of thing. Hence, “cowness” inheres in the entire cow, and any cow will have “cowness” inhering throughout it. That “this is a cow” is a statement of identity *qua* class. However, that “this cow is like this cow” is a statement of similarity via *jātisādṛśya*.³³⁶ We might distinguish both from an identity statement such as, “This is Meas,” which is a statement of identity *qua* particular.³³⁷

We have already noted that for Kumāriila, similarity is known through perception. However, it is a uniquely qualified perception, so unique in fact it is, for Kumāriila, a separate *pramāna*. This idea can be illustrated by considering the rather queer suggestion that similarity does not require two objects but that in fact similarity can exist in a single object. The illustration Kumāriila provides is straightforward: we do not need to see both objects at the same time to recognize similarity. Hence, the

³³⁴ Kumāriila Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, *Slokavartika*, 226.

³³⁵ Kumāriila Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, 226; Nandita Bandyopadhyay, “The Concept of Similarity in Indian Philosophy,” *Journal of Indian Philosophy* 10, no. 3 (1982): 250.

³³⁶ Kumāriila Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, *Slokavartika*, 226.

³³⁷ Based on the previous chapter, one can provide an analysis of this in terms of similarity in a certain respect. Identity *qua* particular is absolute similarity, while identity *qua* class is similarity in respect to a specified property, such as “cowness,” or it can be analyzed as two objects which share a similarity relation in respect to cowness (as the resemblance nominalist will do).

gavaya's similarity with the cow exists within the *gavaya* alone.³³⁸ If it did not exist within the *gavaya* alone then, when perceiving the *gavaya* in the absence of the cow, one would not be able to perceive its similarity with the cow. Now this perception is different enough from other sorts of perceptions, like the perception of universals, that it is a unique form of perception, and hence *upamāna* is a separate *pramāna* (from “regular” perception).

Here we can provide a critique of Kumāriḷa's argument built in part with the previous chapter's analysis of similarity while at the same time preserving his intuition. Consider, for example, that there exists a single, actual Pegasus that sprang from the blood of a slain gorgon or perhaps was created in some genetics laboratory—whichever the reader prefers to imagine. Now, further imagine that a child who had never seen a horse before sees this single, unique creature that is the Pegasus. Now, the child ventures out into the world. Unbeknownst to her, though, in the meantime the Pegasus is destroyed and no longer exists. Sometime after that, she encounters her first horse and has the cognition, “This creature is similar to the Pegasus.” Now, the Pegasus does not exist. Therefore, either (1) the similarity with the Pegasus is solely within the horse, (2) similarity relations can exist between existent and non-existent entities, or (3) similarity relations can exist between the actual world and possible worlds, either simply ersatz possible worlds or concrete possible worlds. If the Pegasus never existed (nor, we may wish to add to strengthen the point, was never even imagined and never existed in any possible world, even in the most ontologically maximal possible world), then it is very hard to see how “The horse is similar to the Pegasus” could be true.³³⁹ It seems this is precisely the sort of statement that should have a truthmaker, but in this improbable scenario in which the Pegasus is an *impossible* being, it just does not seem like there is anything that can play the role of the truthmaker, and perhaps

³³⁸ Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, *Slokavartika*, 227.

³³⁹ Of course there is a simple objection to this point: if the Pegasus is both impossible and unimagined, this claim could never be made, and therefore this scenario begs the question. Thus, we can weaken it, and perhaps say that even through the Pegasus is an impossible animal, it can be imagined. And, as it can be imagined, it can be structurally similar in the way that it is represented in the imagination to the actual horse. The present author sees nothing amiss about suggesting similarity relations can hold between imagined and actual objects, and for those skeptical of even ersatz possible worlds (and even if there are in fact no such skeptics, we can imagine a possible world in which they are!) perhaps this relation between representations and actual objects is more amenable and less “spooky.”

the statement is simple nonsense (see the previous footnote). However, if (2) or (3) is correct, and relations of similarity can span between existence and non-existence (which seems a bit more problematic than (3)), or relations can span between actual and possible worlds, then the relation of similarity can provide the truthmaker for the statement, “The horse is like the Pegasus” even if, in fact, there is no actual Pegasus in existence but either there was once, or we can imagine a Pegasus in some possible world.³⁴⁰ It is this same appeal to possible worlds that provides a resemblance nominalist explanation for properties with a single exemplification as well as the argument, encountered briefly in the first chapter of this work, that similarity is a necessary relation in any possible world, even one composed of only a single unique particular. There is of course another option, and that is that the perception of the horse was qualified by the memory of the previously perceived Pegasus. This would entail too, however, that the similarity is not wholly within the horse, but rather is the result of a relation with the Pegasus-memory and the presently perceived horse. Such an approach risks internalism but that is no reason to think it might not be true.

In both this argument and in Kumāriḷa's argument, the presupposition is that for one to recognize similarity, one still requires some previous experience of the second relata, even if it is not present, and Kumāriḷa grants his Nyāya opponents this.³⁴¹ That is, either two objects together are perceived as similar, or one perceives something similar to an object previously perceived. But this perception is unique, Kumāriḷa argues, because it is a perception not just of a cow, and not just of “dewlapness” in its dewlap, but instead a perception of “cow as qualified by similarity.”³⁴² If one is perceiving a cow for the first time, and have never perceived representations of cows, cow-like creatures, or representations of cow-like creatures, then one will not have this uniquely qualified

³⁴⁰ Of course, the other possibility is simply that there is a relation between one's memory of Pegasus and the perceived horse, or between the memory and the cognition of perception of the horse, but this may turn out to also hinge upon our philosophy of mind and theory of memory and perception. For example, if we are first-order representationalists in our theory of mind, we might very well hold that these relations of similarity exist between the representations rather than necessarily between external objects. Again, sadly, this is another fascinating philosophical road that will have to be traversed elsewhere.

³⁴¹ Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, *Slokaṽartika*, 227.

³⁴² Kumāriḷa Bhaṭṭa, Pārthasārathimiśra, and Sucarita Miśra, 227.

perception. Hence again, *upamāna* is a separate *pramāna* albeit conceived quite differently than the Nyāya and independently of language.

Yet again, what is the nature of this similarity that is uniquely perceived? It is the having of the same properties (widely conceived) by two individuals that constitutes the nature of similarity.³⁴³ The definition of similarity, in the end, is strikingly close to that given by Vallabha; the primary difference is that what can constitute similarity is taken to be wider given it is conceivable that structural resemblance alone with no actual shared universals could constitute true similarity. Yet, there is an awareness that this means similarity is relational. Indeed, in his commentary, Pārthasārathimīśra states that similarity is a relation and that the relation is inherent given the properties an object has.³⁴⁴ That similarity just is the relation of similarity, then, entails it is knowledge of this relation that is *upamiti*.

What is most unique, then, is the way similarities are perceived and the nature of *upamiti*, or analogical knowledge (that is, the epistemology of similarity), rather than the nature of similarity (the ontology of similarity). This view leads to the rejection of the Nyāya account of what knowledge of similarity consists of, or how analogical reasoning works, but the acceptance of an ontology of similarity likely to be very amenable to the Nyāya philosophers. As we shall see in what follows, Prābhākara Mīmāṃsāka's account of knowing similarity is quite similar to Kumārila's, but they draw a much more radical ontological conclusion about similarity.

THE PRĀBHĀKARA MĪMĀMSĀKA'S VIEWS OF SĀDRŚYA AND UPAMĀNA

Prābhākara, in his commentary on the *Śābarabhāṣya*, threw down a gauntlet regarding the nature of similarity, breaking with previous schools by declaring that although some schools of thought accepted that similarity was simply the universal itself in more than one substrate, that could not be the case.³⁴⁵ Universals are unchanging, and are cognized as “that X” while similarity is cognized as “that

³⁴³ Kumārila Bhaṭṭa, Pārthasārathimīśra, and Sucarita Mīśra, 225.

³⁴⁴ Kumārila Bhaṭṭa, Pārthasārathimīśra, and Sucarita Mīśra, 235.

³⁴⁵ Prābhākara, *Vṛhatī of Prābhākara*, ed. Pandit Madhava Sastri Bhandari, vol. 1 (Madras: Madras University, 1934), 109.

X-like.” Given this difference, and given that this difference between cognizing a universal and cognizing a similarity are clearly marked by different qualities and hence are different types of perceptions, therefore what is perceived must likewise be different as the cause of such knowledge (*upamiti*), functioning as a distinct, knowable category (*prameya*).³⁴⁶ Thus, given that similarity is knowable as something distinct from universals, there must be something which is known that is likewise distinct, and hence similarity is a distinct ontological category.

The *Prakaraṇapañcika* of Śālikanāthamiśra provides an exposition of the the Prābhākara Mīmāṃsāka account of *upamāna* and *sādrśya*.³⁴⁷ Śālikanātha considers, in a series of epistemological and ontological arguments, both how similarity is a positive entity and in fact its own ontological category as well as why *upamāna* is a separate *pramāna*. The first argument is simply that similarity is attested to by knowledge and experience. We experience similarity, and we know things are similar. This attests to the existence of similarity.³⁴⁸ The second argument is developed through a process of elimination, by which it is shown that *sādrśya* cannot be any of the other accepted ontological categories.³⁴⁹ It cannot be considered as substance (*dravya*) since something can be similar in quality (*guṇa*) as well as action (*karma*), and likewise, it therefore cannot be quality or action. It cannot be considered a universal (*sāmānya*) because “it is not the ground for the notion of continuity.”³⁵⁰

To better understand this last objection, one must have some grasp of the way that a universal is conceived by the Prābhākara Mīmāṃsākas. The Prābhākara Mīmāṃsāka believe, as do the Nyāya, that universals are directly perceptible, yet also hold that they may not be cognized *qua* universal until one has at least another experience of that universal in another substrate.³⁵¹ This is because the nature

³⁴⁶ Prābhākara, 1:109.

³⁴⁷ Śālikanāthamiśra and Pandurangī, *Prakaraṇapañcika of Śālikānātha*.

³⁴⁸ Śālikanāthamiśra and Pandurangī, 235.

³⁴⁹ Śālikanāthamiśra and Pandurangī, 235–36.

³⁵⁰ Śālikanāthamiśra and Pandurangī, 236.

³⁵¹ Śālikanāthamiśra and Pandurangī, 70–71. Here we should also recall Armstrong's objection to resemblance nominalism, discussed in Chapter Two, in that properties with only a single exemplification are inexplicable by the nominalist's theory.

of the universal is continuity.³⁵² This seems a bit odd, for it seems to claim if we perceived a wholly distinct object, with qualities completely foreign to us, we would not cognize any of its qualities as universals. Rather, it is only with the experience of the repeatability of a quality can it be cognized *qua* universal. This is the “continuity” which Prābhākara and Śālikanātha are speaking of—a continuity “through” individuals. This continuity is denied as a feature of similarity, yet it seems this is a weak argument for ruling out similarity as a universal for, it seems, that similarity between individuals will exist throughout any such continuity given the presence of the same universal in multiple individuals, and likewise, similarity will not be cognized as similarity the first time a quality has been encountered, only after that quality has been re-encountered. However, when a universal is first cognized (even if not *qua* universal) that cognition is still distinct from the cognition of similarity, and when it is cognized subsequently, it is not necessarily marked with a “that X-like” quality while any cognition of similarity must be marked with that quality. Furthermore, the statement *A* that two objects share property *x* is not equivalent to the statement *B* that two objects are similar: one may deduce *B* from *A*, but one cannot deduce *A* from *B*. Therefore, conceptually similarity is distinguishable from sharing universals or properties. Given the supposition that differences in types of cognitions (based on the qualities of said cognitions) are proof for different types of objects as the cause of such cognitions, and that different types of objects as the cause of different cognitions is proof for these different types being different ontological categories, similarity and universals are of different ontological categories.³⁵³ We may remain skeptical, however, that our first perception of a property fails to recognize it as a property.

It is denied, too, that *is* falls under *vīśeṣa*, or “particularity” (used in part as a theoretical construct (but taken as an ontological reality) to distinguish and individualize atoms which are without qualities and therefore otherwise indiscernible).³⁵⁴ This is unsurprising since the Mīmāṃsākas reject

³⁵² Śālikanāthamiśra and Pandurangī, 48–49.

³⁵³ So, for example, the cognitions caused by “redness” and “cowness” would be of the same type, hence proof that “redness” and “cowness” are of the same type of object (a universal), and therefore of the same category.

³⁵⁴ Śālikanāthamiśra and Pandurangī, *Prakaraṇapañcikā of Śālikānātha*, 236.

this category in general. Furthermore, similarity is not an absence (*abhāva*), so it cannot belong to that ontological category, either. What perhaps is surprising is the denial the similarity is a *samavāya* or a relation given that Pārthasārathi clearly identified it as so; this denial is one of the differentiators between the two Mīmāṃsāka schools.³⁵⁵

Clearly, similarity is not being treated here explicitly as a relation in much of the tradition. Ratnakīrti's argument, that there “is no third thing” besides the two objects that is “similarity” certainly parallels the argument of Dharmakīrti against relations in the *Sambandhaparīkṣā*, but even Ratnakīrti's argument does not explicitly invoke similarity as a relation. The Nyāya accounts we have examined thus far also do not make the relational nature of similarity as explicit. Now, given what we saw in Kumāriḷa's account, we might think here that perhaps Śālikanātha has in mind the idea that similarity can exist in a single object; however, we saw even under that account that there had to be some previous experience of some other similar object for an object to be perceived “that-X like” (the previous object being X, of course). Such a supposition would not be the whole story, however, for what Śālikanātha has in mind is the relation between the two similar objects. The *gavaya* in the forest has no relation with the cow in the village.³⁵⁶ The similarity between the *gavaya* and the cow does not emerge from them having some relation to one another. This is a common sense objection. The American bison is also similar to the *gavaya*, but surely a bison wondering around in the wilds of Alaska is not in a relationship with a *gavaya* roaming in India. Luckily, this is not the strongest argument the Prābhākaras have.

Prābhākaras may grant that relations, and perhaps particular relations such as sharing substances, properties, or even actions, determine similarities. However, they are not the similarities themselves. Bandyopadhyaya, citing Bhavanātha, a Prābhākara, provides an excellent analogy against the understanding of the relations themselves as *sādrśya*: “Contact between the object and the sense-

³⁵⁵ Śālikanāthamiśra and Pandurangi, 236.

³⁵⁶ Śālikanāthamiśra and Pandurangi, 237.

organ is the causal determinant [*prayojaka*] of perception, but is not part of the perception itself.”³⁵⁷

That is, relations may indeed be the causal determinant for similarity, but they are not similarity itself. One is then left to ask, “What then is the nature of these relations that give rise to the perception of similarity?” The precise nature of these relations and what gives rise to them, along with why they do not constitute similarity but instead similarity is something over and above them, requires explanation.

There is a second argument, too, found in the literature.³⁵⁸ Other relations, such as conjunction, are only perceptible when the two relata are perceptible such as two lovers holding hands. When only one of the lovers is present, the relation of conjunction is not perceived and therefore not said to exist in this instance. To insist that similarity is a relation, then, means that when the relata are not present to perception, similarity cannot be perceived.³⁵⁹ Whether we consider similarity as a relation between the properties of the two similar objects or somehow between the two objects directly, this conclusion would still be entailed. But, this conclusion is false, and therefore similarity must not be a relation.³⁶⁰ The justification for this conclusion is further strengthened from the perception of similarity. When one sees the bison or cow, one perceives its similarity with the known *gavaya*. One need not go through a cognitive process of “matching” the properties of the bison or cow to the *gavaya* (dewlap, four legs, tail, hooves, and so forth), but one directly perceives the similarity, and one does not perceive it as a relation between two relata, for like Kumārila's account, the Prābhākaras accept similarity can exist wholly within one similar object as must be the case from the argument above. Furthermore, it is not only the perception of the common properties, either, as the perception of the properties is argued to be distinct from the perception of similarity as in the Bhaṭṭakas, and, as it is not a relation, it cannot be analyzed as sharing properties or the having of properties in common.

There is a necessary and difficult pill for the Prābhākaras to swallow. Kumārila claimed, it will

³⁵⁷ Bandyopadhyay, “The Concept of Similarity in Indian Philosophy,” 262.

³⁵⁸ Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ,” in *Epistemology in Classical India: The Knowledge Sources of the Nyaya School*, trans. Stephen H. Phillips (New York: Routledge, 2013), 107–8.

³⁵⁹ Gaṅgeśa, 108.

³⁶⁰ Gaṅgeśa, 107–8.

be recalled, that similarity can exist wholly within a single object; however, we saw the justification for this brought in a second object through the back door so to speak since one must be acquainted with the absent similar object to recognize similarity in the present similar object, but that perception is a unique sort of perception and hence a separate *pramāna*; still, similarity was conceived of as a relation of shared properties. The Prābhākaras, because they posit that similarity is not a relation, are stuck with an even more difficult problem: while the cow and *gavaya* are similar, their similarities are different. The argument runs as follows. If similarity is non-relational, then it is not constituted by two relata. Therefore, similarity cannot be symmetric as only relations are symmetric.³⁶¹ It is not the “sharing” of something, for as we observed earlier, sharing is relational and therefore does not offer a reduction of the relation of similarity to something non-relational. Yet, similarity is observable when the villager sees the *gavaya* having known the village cow. Therefore, either the similarity observed in the *gavaya* is not that that is observed in the cow; that is, the *gavaya* is perceived as “cow-like” while the cow is perceived as “*gavaya*-like,” or, the similarities are the same. If they are the same, either the similarity of the cow and the *gavaya* are of the same type as all other similarities, or they are of a different type of similarities.³⁶²

There seems a way out of this conundrum, but one with its own drawbacks. That is to suggest that while similarity is an independent ontological category, it consists of one entity. That is, there is one similarity, and all similar things partake in it. The Prābhākaras do not make this argument, and at first, it is difficult to see how it could do any violence to their metaphysical system. Similarity can remain non-relational. It seems, following Bhavanātha, that there are clear resources from

³⁶¹ For example, if we remark of a painting that it is symmetrical, we are properly speaking of a relation between one side of the painting to another.

³⁶² There are two other problems, the first of which being addressed below. First, if similarity is an independent category, and the similarity of the cow is not the similarity of the *gavaya* by which “The cow is like the *gavaya*” and, “The *gavaya* is like the cow,” then on what properties or features are the two similarities to be distinguished. The second problem, not addressed, is as follows: if the similarity of the *gavaya* and the cow are the same similarity but distinct from other similarities, then they are similar because they share the same similarity, and similarity is understood relationally contra the Prābhākaras. If similarity is a category of only one object, then it is also shared, but in that case the distinctiveness of the similarity of the *gavaya* and cow (as contrasted with that of the red apple and red rose) comes from the grounding of similarity rather than the sharing of similarity which is everywhere the same.

distinguishing similarity from the grounds of similarity. Therefore, while the grounds of similarity can preserve the different grounding for the statement, “The cow is like the *gavaya*” and, “The *gavaya* is like the cow,” it could preserve that what is perceived in each case is similarity (recall that *samavāya*, inherence, is considered like this; although many inferences ground it, there is only one singular self-relating *samavāya*). The similarity of the cow and *gavaya* would be the same, and it would be the same similarity between a triangle and pyramid, or a red apple and a red rose, or the two men who are not my father, but the respects by which two or more things are similar could be preserved as distinct.

For the Prābhākaras, the test would be to examine the perception of similarity and see if the similarity perceived in the *gavaya* is different than the similarity perceived in the apple. If, however, we distinguish the similarity perceived in the *gavaya* from the similarity perceived in the apple, some rationale for distinguishing between one similarity from another must be given (if it is not only the grounds of similarity). This is the problem of individualizing similarities, but in this case, non-relational similarities. The only way the present author can conceive of doing this is by imputing properties to similarity, and therefore similarity must be able to be a substrate for properties and perhaps actions, or suggesting that there is some “particularizer,” that is *vīśeṣa*. However, this clearly would disrupt the Prābhākaras' metaphysical system since they accept that properties can only inhere in *dravya* and reject the category of *vīśeṣa*; part of their argument to the existence of similarity as a distinct ontological category depends on these taxonomic assumptions. Therefore, there seem to be good metaphysical motivations for the Prābhākaras to accept that the category of similarity has only one object, and it is differentiated merely on the grounds by which it is cognized.

Yet, for all its metaphysical appeal, this is not a solution to the Prābhākaras' woes as there is an even more motivating epistemological argument against this solution. Recall the example of the child, who had never seen a horse before, that sees the singular, unique creature that is the Pegasus. If the similarity of the Pegasus (with the horse) is non-relational, wholly within the Pegasus, and distinct

from that of the horse, why is it not perceptible to the child since it is held by the Prābhākaras that similarity is directly perceptible? Why should this perceivable entity, similarity, be invisible to those without prior knowledge of horses when one perceives the Pegasus? The answer must be that only with prior acquaintance of a horse can the similarity that exists wholly within the Pegasus (and which is different from that within the horse) be perceived. But if similarity is everywhere the same, why are these special conditions necessary for its perception? Why would the prior acquaintance with similarity (for example, red roses and red apples) not be enough to perceive similarity in the Pegasus as in the case with universals?

Here, the Prābhākaras can only resort to analogies which tie the conditions of perception to the distinct perception that is *upamāna*. So, just as the redness of a pot cannot be perceived unless the condition of light being cast upon it is met, so too the similarity of the Pegasus cannot be perceived unless the condition of prior knowledge of a horse is met. Yet, while not a direct argument that there must be different similarities, it strongly suggests it. For, if similarity were everywhere the same, then the similarity cognized when one see the red apple and the red rose together would be the same object as that which is cognized when one sees the Pegasus (even without seeing the horse). Therefore, it is not acquaintance with similarity in general that provides the condition of the perception of similarity in a specific object, but rather acquaintance with an object similar to that very object that is the condition of the perception of similarity. This strongly suggests, then, that the similarities of horses and Pegasus is of a different *type* than that between red apples and red flowers. And if that is in fact the case, similarity is not everywhere the same, and again the Prābhākaras have the burden of explaining how we may sort the category of similarity into different sorts (that perceivable in the horse and then the Pegasus, and that in the red apple and the red rose), which again only seems feasible to the detriment of their overarching metaphysical edifice.³⁶³

³⁶³ The answer might be simple enough, though: an appeal to *upadhi*.

The Prābhākaras, too, have their own arguments for not accepting that *sādṛśya* is a single entity, an argument that can be seen in the *Upamānacintāmaṇi* of Gaṅgeśa, the chapter on *upamāna* in the *Tattvacintāmaṇi*.³⁶⁴ The first claim is that similarity must not be a single thing throughout the categories “since the supposition entails the unfortunate consequence that everything would be similar to everything else and *everyday speech about this as a lot or little similar with be impossible (or inappropriate) were it a unity.*”³⁶⁵ This first observation contradicts Greenlee's Similarities of Discernables introduced in the first chapter. In fact, everything *is* similar to everything else, a notion reinforced, as we saw, by Donald Davidson's truth-functional analysis of similes as trivially true (similarity claims of the form, “*x* is like *y*.”), and the first chapter gave an argument that this is in fact a necessary feature of any possible world. A charitable reading, then, takes both aspects of this objection to *sādṛśya* being a single entity not as metaphysical objections, but claims about the function of everyday language. Clearly, given the way we speak, one would think it deserving of further explanation to claim that that “My dissertation committee is like the moons of Jupiter” since there is no obvious similarity between them.³⁶⁶ We also have paradigms of difference (“Black and white,” “up and down,” “wrong and right,” “both are impossible,” *et cetera*). Yet, as we saw, there can always be some similarity drawn between any two objects, even objects that do not exist and perhaps are even impossible objects (both are colors; both are directions; both are moral judgements; *et cetera*)! This charitable reading, though, cannot turn this objection into a metaphysical counterargument, however, because as we have already seen, ordinary language is not the best guide for ontology even if it is able to give us some clues, and the claim that everything is not similar to everything else is, in fact, not only

³⁶⁴ The author will be following S. Phillip's translation. Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ.” For a more exhaustive study on this section of the *Tattvacintāmaṇi*, see the 2015 work, Uma Chattopadhyay, *Faultless to a Fault: Gangesha on Upamana in Indian Epistemology*, 2015 edition (New Delhi: D.K. Printworld, 2015).

³⁶⁵ Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ,” 107. Italics added.

³⁶⁶ The almost irresistible urge to interpret combined with the richness of analogy has no doubt left the very committee members here wondering by what respect they are similar to the moons of Jupiter since perhaps the most obvious respect, number, is ruled out since Jupiter has 53 moons. The example was random, but no doubt the individual members can find some interpretation whereby it is true that “Jarrod's dissertation committee is like the moons of Jupiter.”

false but necessarily false.

That some things are more or less similar is, though, an intuition many share. Just what we mean, however, by more and less similar is a surprisingly and staggeringly complex problem. One is inclined to think that the Pegasus has more in common with a horse than a buffalo. This very way of phrasing (“has more in common”) presupposes a certain sort answer: that the Pegasus and the horse have more qualities in common, and hence to say that the Pegasus is more similar to the horse than the buffalo is to say that the Pegasus and horse share more properties with one another. This is, in fact, the explanation Gaṅgeśa puts into the Bhaṭṭa Mīmāṃsika's mouth as an objection to the Prābhākara interlocutor.³⁶⁷

For the Bhaṭṭa Mīmāṃsikas, the interpretation that similarity is a relation constituted by the *relata* which are shared properties is open. This interpretation allows for what shall be termed the “quantitative measure of similarity.” Under this interpretation, properly speaking things do not resemble each other in greater or lesser *degrees*, but rather in more or less *ways*. That is “more similar” is actually a pre-theoretical way of saying, “has more similarities” and hence is a quantitative claim *about* the number of resemblances (even though we may be unable to provide a number). Properly speaking, objects are not more similar to one another, but rather, they have a greater number of specific similarities. If objects resembled each other *qua* objects then similarity is more likely to be a transitive relation. If, as objects, a (red) rose is like a (red) Corvette and a (red) Corvette is like a (blue) Mack truck then a rose is like a Mack truck. But if a rose is like a Corvette in that they are red (or share the property of redness, or have a resemblance, et cetera) it does not follow that a red rose is like a blue Mack truck because the truck is like a Corvette in that they both have combustion engines. This idea will be revisited towards the end of this chapter.

Yet there is a lurking problem remaining in all this: the picture of similarity we have painted is

³⁶⁷ Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ,” 108–9.

one of abundant similarity of a staggering magnitude since all two objects are similar in that they are not some third object, and we may be comfortable with trans-world relations like those between actual and possible objects. What this means is that it is practically impossible for anyone to quantify the number of similarity relations between any three objects at a glance and determine if two are more similar to each other than the third even when, practically speaking, one can easily make that determination: say between a cow, a buffalo, and a Ming vase. Any theory of quantifying similarity that makes such determinations a practical impossibility must, it seems, be misguided.

There are at least three ways forward here.

One way forward is just to bite the bullet and say that actually we are not any good at determining really how similar objects are. This reply accords with the Buddhist responses to the problem. What we take to be similarities are really just useful fictions, and that we have other inventions based upon these fictions that are likewise erroneous should be no surprise. Consider Frege's attempt at the reduction of arithmetic to logic, the so-called logistic program. Having unwittingly accepted a contradiction at the core of his set theory, he was able to build a beautiful yet misguided edifice upon that error. Just because we can develop something that pragmatically seems to work most of the time does not mean that we have things right, so this line of argument goes.

The second way forward is to take an intermediate position and object to the extravagance of similarities. This position, too, has a distinctly Buddhist flavor. Since the “similarity” that comes from two entities both being different from some third entity should not be understood as a positively existing entity, but instead as a non-existence or absence (*abhāva*). Such absences are not to be counted as existing things, and therefore the similarities of our objects are greatly reduced in magnitude.³⁶⁸ Other sorts of relations might also be rejected. For example, one might hold other

³⁶⁸ This is simply an argument that rejects negative properties or negative universals. There seem to be some very good metaphysical reasons for wanting to reject these as entities. For an “opinionated” discussion of the problem, see David M. Armstrong, *A Theory of Universals: Volume 2: Universals and Scientific Realism*, vol. 2 (CUP Archive, 1980), 23–29.

additional metaphysical tenets, such as the rejection of concrete or ersatz possible worlds, the rejection of mereological sums, presentism or a growing block theory of time, or three-dimensionalism. Such tenets would, particularly if we accept the sorts of arguments Dharmakīrti advanced against causal relations we examined above, lead to rejecting the respective relations holding between objects in the actual and possible worlds; the rejection of relations between parts and wholes; the rejection of relations holding between objects in the present, past or future; or relations between temporal parts. Presumably, these could include similarity relations, although there would certainly be additional complications in the details (for example, if there are no relations between temporal parts and we are presentists, then do I have no relation to the entity I see in the family album that everyone identifies as “me?”). These intermediate positions, although perhaps successful in eliminating many similarities, are not a solution because we can conceive of enumerable others similarities on just as vast a scale—for example, being equidistant from Paris (or any other location), co-existing at this very moment, or similar in being constituted by at least one subatomic particle that was generated from the Andromeda galaxy.³⁶⁹ Therefore, there is still an abundance of similarity relations between any two objects even if one can develop principled reasons for excluding many sorts of such relations.

The third possible way forward here is to accept that indeed there are these manifold similarities between any two objects, however limited by our other metaphysical commitments, but it is not actually the number of resemblances that account for our determination of similarity. Instead, this position insists that to think objects as being “more or less similar” is a matter of quantification is, in fact, entirely misguided. To expand just what this position would be, it will be useful to elaborate further the debate regarding more or less similar objects between the Bhaṭṭa Mīmāṃsikas and Prābhākara Mīmāṃsikas, and it will be demonstrated that in fact neither can be an accurate description

³⁶⁹ This last example seems a bit outlandish, but such facts could, in principle, be known about objects' constitutions. For some discussion, see Daniel Anglés-Alcázar et al., “The Cosmic Baryon Cycle and Galaxy Mass Assembly in the FIRE Simulations,” *Monthly Notices of the Royal Astronomical Society* 470, no. 4 (October 1, 2017): 4698–4719, <https://doi.org/10.1093/mnras/stx1517>.

of what we mean by saying objects are more or less similar to one another.

Gaṅgeśa surveys a number of definitions offered by both the Bhaṭṭa Mīmāṃsikas and Prābhākara Mīmāṃsikas. The Bhaṭṭa Mīmāṃsika argue that “similarity is the abundance of common characteristics in terms of parts, qualities, and actions” given that there are two different objects.³⁷⁰ This definition, and three related formulations of it, are rejected by the Prābhākaras on the grounds that “there is no uniformity about what counts as abundance”³⁷¹ The Prābhākaras here seem to be making a trivial objection: we simply do not know what qualifies as abundance like we do with plural, three or more, and so on.³⁷² The reply is straightforward: abundance is taken to be uniform and therefore there is no quantitative threshold that must be met to say that similarities are abundant.³⁷³ Rather, when we claim two things are similar, we are claiming the commonalities are many while simultaneously the differences are little.³⁷⁴ But the Prābhākaras' objection is actually not so trivial, because again appealing to ordinary language, they note that we talk of similarity in cases in which things may have a few or uncountable differences.

There is a deeper point to drive home here, and it constitutes our third position. That is, degrees of similarity are not based on the quantity of similarities. Rather, that things may be more or less similar depends instead on the weight that we assign particularly resemblances. As I look around the room I am presently sitting in, there is an end table, a cabinet, and a picture frame that all match; they are all the same color of light blue, and painted in such a way as to appear weathered. They are very different objects. The end table is small and square. The cabinet stands chest high, has two doors and ornate bronze handles in the form of a Naga goddess. The picture frame is large and rectangular,

³⁷⁰ Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ,” 108.

³⁷¹ Gaṅgeśa, 109. The other three definitions which are rejected are as follows. (2) Similarity “is abundance of properties existing in one thing with respect to the properties of something else.” (3) Similarity is “the possession of properties that are abundant with respect to those had by [the counter-correlate] given that the things are not identical.” (4) The possession of properties that are abundant with respect to those had by the absentee [counter-correlate] of an absolute absence that rests in the thing itself (the thing *y* perceived to be similar to *x* [the counter-correlate].” Ibid.

³⁷² Gaṅgeśa, 109.

³⁷³ One possible reading, however, is that the Bhaṭṭa Mīmāṃsikas are suggesting that at least three is needed to be taken as abundant, but this does not seem reasonable.

³⁷⁴ Gaṅgeśa, “Gaṅgeśopādhyāya-Viracitas Tattva-Cintā-Manau Upamāna-Khaṇḍaḥ,” 109–10.

containing a photograph from inside one of Kanchipuram's many temples. There are other similarities; they all seem to be constructed of wood, for example. There are also similarities that might not be known to an unformed viewer. For example, I know that they had a common origin, in that I built them all. But when someone else enters the room, they immediately recognize that the furniture “matches.” They pick immediately the similarity in respect to color because that similarity is weighted in some way. That is, when we make determinations of similarity, we are privileging some respects by which objects are similar over other respects. Making determinations of similarity simply does not require that we invoke numeracy. Instead, we give more conceptual weight to some similarities than others.

This position, though, does nothing to rescue the peculiar position of the Prābhākaras. The inference from the distinctiveness of the perception of similarity to similarity as an independent ontological category that is non-relational creates more problems than it solves. Indeed, it fails to stand up under further epistemological inquiry. Instead, the Bhaṭṭa Mīmāṃsika position, subsequently taken over and modified by Gaṅgeśa who abandons the earlier “word-relation” theory of analogy, seems a much stronger position to account for our perceptions of similarity and the ontology of similarity. They preserve a relational understanding of similarity. As argued in the previous two chapters, this similarity relation may be a special relation, but it is a relation none the less. The Prābhākaras' insight that there is something irreducible about similarity, however, and that there is something more than just two objects with a common property, is an insight that our model developed in the previous chapter preserves.

The South Asian traditions' debates are so valuable in part because of the strong link between epistemological principles and ontological commitments. Epistemological claims are tested against ontological grounds, and ontological claims require epistemological justifications. Just as the Quinian mantra of “no entity without identity” ties epistemology to ontology, so does the Indian mantra of


“what is knowable is nameable.”³⁷⁵ The previous chapter developed a theory of relations and individuating relations on the basis of similarity. Such an approach assumed relationality and similarity, and with those two resources developed a robust explanation of what relations are and how individual relations can be individuated. It lacked the resources, however, to determine whether or not relations were “real” and offered a universe of relational extravagance.

But still, while the South Asian debates perhaps clarifies some of the mysteries about similarity, it does not answer all of our questions. For example, if the third position above is correct, and we have good reason to think that it is, it becomes the sister question to the question with which we ended the previous chapter. That is, how do we know what relations or similarities are actual, and now, how do we know what conceptual weight they should be assigned as we make determinations of more or less similar? We will return to this question at the end of the chapter and attempt an answer to these two questions. Before we are ready to do that, however, it behooves us to spend more time thinking about how such questions practically play out in reasoning. The Islamic jurisprudential debates offer a rich way to explore this very issue. It is to the debates concerning analogy and legal and ethical reasoning between the *Zāhirī madhhab* and its proponent, Ibn Ḥazm, and *Shāfi‘ī madhhab* and its proponent, al-Shāfi‘ī, to which we now turn.

A HISTORICAL SKETCH OF ISLAMIC JURISPRUDENCE DEBATES CONCERNING “*QIYĀS*,” OR ANALOGY

While it is beyond the scope of this work to provide a comprehensive history of the debates concerning *qiyās* (analogy), some historical context is necessary to understand why analogical reasoning became a matter of such importance in the *uṣūl al-fiqh*, the science of jurisprudence, within the Islamic context. In part because, as far as this author knows, no similar debate occurred with such

³⁷⁵ W. V. Quine, *Ontological Relativity and Other Essays*, 10th-11. print ed. (New York: Columbia University Press, 1969), 65; Roy W. Perrett, “Is Whatever Exists Knowable and Nameable?,” *Philosophy East and West* 49, no. 4 (1999): 401–14, <https://doi.org/10.2307/1399945>.

rigor or rancor within the debates regarding ecclesiastical law in the European traditions or even Judaic law, some understanding of just why this was the case within the Islamic context is needed.³⁷⁶ The philosophical inquiries in which analogy was discussed and debated after Aristotle, while certainly of interest to the scholar of analogy, never took on the urgency that it did in an Islamic context.³⁷⁷ This difference is perhaps because not only was analogy bound up in religious contexts within the Islamic world as in Europe and the greater Roman world, but given the predominance of religiously derived law, the concern was also deeply practical.

It has been the practice of historians of Islamic law to note a division that emerged sometime late in the second century of Islam (about the eighth century CE) between the *Ahl al-Ḥadīth* and *Ahl al-Ra'y*. These different movements are often presented as exclusive of one another and in opposition to each other, although it seems doubtful that such a clear division existed.³⁷⁸ The *Ahl al-Ḥadīth* were scholars who considered the textual sources of the Islamic faith, the *al-Qur'ān* and the *Ḥadīth* (the reports of the actions, words and behaviors of the Prophet Muhammad) to be the only authority in religious and legal matters. It has been typical of scholars, both Islamic and otherwise, to identify this "movement" as emerging first out of the scholars of *Ḥadīth* who were interested in the collection and authentication of the *Ḥadīth*. The *Ahl al-Ra'y* was primarily identified with a jurisprudential approach that accepted the use of "human reasoning" to reach legal decisions, and has been variously branded the "rationalists" or "common sense" school by Western scholars, with *ra'y* being the practice of giving a

³⁷⁶ Donna Litman, "Jewish Law: Deciphering the Code by Global Process and Analogy Symposium: Law and Religion," *University of Detroit Mercy Law Review*, n.d., 563.

³⁷⁷ See for examples, E. Jennifer Ashworth, "Medieval Theories of Analogy," *Stanford Encyclopedia of Philosophy*, 2009, <https://stanford.library.sydney.edu.au/archives/spr2010/entries/analogy-medieval/>; E.J. Ashworth, "Analogy, Univocation, and Equivocation in Some Early Fourteenth-Century Authors," in *Aristotle in Britain during the Middle Ages*, vol. 5, *Rencontres de Philosophie Médiévale 5* (Brepols Publishers, 1996), 233–47, <https://doi.org/10.1484/M.RPM-EB.4.000087>; James F. Ross, *Portraying Analogy*, Cambridge Studies in Philosophy (Cambridge: Univ. Press, 1981); Roger M. White, *Talking about God: The Concept of Analogy and the Problem of Religious Language* (Ashgate Publishing, Ltd., 2010).

³⁷⁸ See, for example, J. Schacht, *The Origins of Muhammad Jurisprudence* (London: Oxford University Press, 1950), 253–54; Wael B. Hallaq, *The Origins and Evolution of Islamic Law*, Themes in Islamic Law 1 (Cambridge, UK ; New York: Cambridge University Press, 2005), 74–77; Christopher Melchert, *The Formation of The Sunni Schools Of Law, 9th-10th Centuries C.E.*, Studies in Islamic Law and Society, v. 4 (New York: Brill, 1997), 1–10; Goldziher, *The Zāhirīs*, 3–7; Amr Osman, *The Zāhirī Madhhab (3rd/9th-10th/16th Century): A Textualist Theory of Islamic Law*, Studies in Islamic Law and Society, volume 38 (Leiden ; Boston: Brill, 2014), 100–105.

considered opinion. Hallaq argues that *Ahl al-Ra'y* was defined negatively *vis-à-vis* the *Ahl al-Ḥadīth*: “A rationalist is one who does not rely, or tends not to rely, on *Ḥadīth*.”³⁷⁹ However, both early Islamic and Western scholars have acknowledged that the practice of *ra'y* predated the practice of collecting and verifying *Ḥadīth*. This fact was true in theology, as evidenced by the *Mu'tazila*, as well as in jurisprudence.³⁸⁰

Ibn Khaldūn's *Muqaddima* (circa 1377 CE) is helpful for understanding how these traditions were thought of by later Muslim scholars. Particularly useful are its sections on *tafsīr*, or Qur'ānic interpretation. Ibn Khaldūn writes that when the traditions of the Prophet were confined to Arabs, who had a native understanding of the language of the *Qur'ān*, there was little need for interpretative tools.³⁸¹ But as the religion spread outside the Hijaz, and as the customs and language of the Arabs changed, such tools were needed, and therefore early scholarship on the Qur'ān focused on *balāgha* (stylistic form) and *i'rāb* (nominal, adjectival, or verbal suffixes), occupying itself with primarily philological concerns. Two approaches then emerged, one which looked at earlier “traditional” interpretations and relied on those, and others that looked primarily at the texts themselves and applied philological methods.³⁸² While explicitly acknowledging that these two approaches were usually united, Ibn Khaldūn writes the former approach was lacking because many of the earlier traditions were transmitted by converted Jews whose interpretations also made use of their previous knowledge of the *Torah* and therefore conflated their previous faith's teaching with their new one.³⁸³ As Muslim scholars became increasingly aware that the traditions that had been transmitted to them were possibly corrupt interpretations, a new science emerged that was to transform the Muslim world: *'ilm al-Ḥadīth*,

³⁷⁹ *The Origins and Evolution of Islamic Law*, 74.

³⁸⁰ For a helpful overview of the rise of rationalism and rational theology (*'ilm al-Kalām*), see Majid Fakhry, *A History of Islamic Philosophy*, 3rd ed (New York: Columbia University Press, 2004), 43–66. For a useful discussion of the relation of *Ḥadīth* and the *Mu'tazila*, see Usman Ghani, “The Concept of Sunna in *Mu'tazilite* Thought,” in *The Sunna and Its Status in Islamic Law: The Search for a Sound Hadith*, ed. Adis Duderija, Palgrave Series in Islamic Theology, Law, and History (Basingstoke, Hampshire New York: Palgrave Macmillan, 2015), 59–74.

³⁸¹ Ibn Khaldūn, *The Muqaddimah: An Introduction to History; in Three Volumes*, Electronic version, vol. 2 (Princeton University Press, 1969), 566.

³⁸² Ibn Khaldūn, 2:566–67.

³⁸³ Ibn Khaldūn, 2:566.

the science of *Ḥadīth*.

ʿIlm al-Ḥadīth became one of the central concerns of many Muslim intellectuals as they traced the lines of transmission for various sayings or actions attributed to ﷺ, the *Sunna*³⁸⁴ of the Prophet. Ibn Khaldūn describes in brief the processes by which scholars determined the relative strength or weakness of a *Ḥadīth* and its authenticity, classifying them as *ṣaḥīḥ* (sound, authentic), *daʿīf* (weak), or *mawḍūʿ* (fabricated) as well as classifying them regarding the links back to the original sources, considering if a link in the transmission was missing, or if two were missing, or if something was suspicious about the line of transmission, and so on.³⁸⁵, ³⁸⁶ Khaldūn saw it as a noble undertaking.

The purpose of the discipline is a noble one. It is concerned with the knowledge of how to preserve the traditions (*sunan*) transmitted on the authority of the Master of the religious law (Muhammad), until it is definite which are to be accepted and which are to be rejected.³⁸⁷

In Ibn Khaldūn's understanding, *ʿilm al-Ḥadīth* was contemporaneous with the actual establishment of a science of jurisprudence. Before, he writes, scholars had worked with only an oral tradition, and he fantastically writes that all legal reasoning before the advent of the *Ḥadīth* sciences contained “no speculation, no use of opinion, and no intricate reasoning” and hence an implicit denial that *raʿy* was a

³⁸⁴ “Ways of acting” might be an adequate translation of *sunna* (plural, *sunan*). It is discussed by Duderija as first being understood “. . . as a general, unsystematically defined ethico-behavioral practice of the early Muslim community that had been formulated, preserved, and transmitted either orally and/or through the practices of the Prophet’s Companions” and, following Guaraya’s work on the Mālikī school, “recognized Islamic religious norms and accepted standards of conduct derived from the religious and ethical principles introduced by the Prophet.” Adis Duderija, “The Concept of Sunna and Its Status in Islamic Law,” in *The Sunna and Its Status in Islamic Law: The Search for a Sound Hadith*, ed. Adis Duderija, Palgrave Series in Islamic Theology, Law, and History (New York: Palgrave Macmillan, 2015), 2.

³⁸⁵ Ibn Khaldūn, 2:567–68.


³⁸⁶ For an excellent introduction to *ilm al-Ḥadīth*, see John Burton, *An Introduction to the Ḥadīth*, Islamic Surveys (Edinburgh: Edinburgh University Press, 1994). For another introductory approach that connects the science of *Ḥadīth* to contemporary practices (including online resources and collections), see the excellent text by Aisha Y. Musa, *Hadith as Scripture: Discussions on the Authority of Prophetic Traditions in Islam*, 1st ed (New York, N.Y: Palgrave Macmillan, 2008). And while not “scholarly” the following text, likely meant to be used as a textbook in a madrasa with Arabic-language learners, is extremely useful in understanding the practicalities of *Ḥadīth* scholarship: Dr. Abu Ameenah Bilal Philips, *Usool Al Hadeeth The Methodology of Hadith Evaluation*, 2nd edition (Riyadh: Hijaz, 2007). Finally, for a more in-depth treatment of the period under discussion here, see G. H. A Juynboll, *Muslim Tradition: Studies in Chronology, Provenance, and Authorship of Early Hadith* (Cambridge: Cambridge University Press, 2008).

³⁸⁷ Ibn Khaldūn, *The Muqaddimah: An Introduction to History; in Three Volumes*, 2:569.

practice that predated the collection of *ahadith*.

It is difficult to underestimate the importance that the *Ḥadīth* took on in the Muslim world as a second source of religious knowledge beyond the *Qur'ān* and the possibly unreliable oral traditions that communicated the *Sunna*. As Musa describes it,

The *Ḥadīth* are the only vehicle through which, according to the vast majority of Muslims, we can access the Prophetic *Sunna*: that which Muḥammad said and did, and of which he approved or disapproved. As such, these stories have been instrumental in shaping the development of Islam as we know it in its various forms.³⁸⁸

Elsewhere Musa notes that “it is discourses in *fiqh* that have had perhaps the greatest impact in forging the seemingly necessary and inextricable  between *Sunna* and *Ḥadīth* . . . and establishing *Ḥadīth* as an indispensable source of law.”³⁸⁹ These were such important sources of information because Muḥammad himself functioned as the paradigm Muslim; as Hallaq observed, the authenticity of his biography in the form of the *Ḥadīth* is of paramount importance because it “enhanced the value of the Prophetic biography as a superior model [given] the Quranic insistence on this model as a unique, nearly divine, example.”³⁹⁰ To restate, it meant that analogical reasoning formed the core understanding of what it was to be a Muslim in that to be a Muslim was to be like the Prophet; to be a good Muslim is to be *like* Muḥammad. While there are various speculations as to why *‘ilm al-Ḥadīth* did not emerge earlier, by the end of the second century of Islam it would occupy many scholars and see its influence over the understanding of Islam, including Islamic jurisprudence, increase.

Despite Ibn Khaldūn's assertion that early Muslim judges and experts (*qāḍī*, “appointed judges;” *mufī*, “independent jurists;” *faqīh*, a legal expert) in no way engaged in speculation or complex reasoning, this does not seem to be the case, and under the rule of the Umayyad caliph, Sulayman bin

³⁸⁸ *Ḥadīth as Scripture*, 1.

³⁸⁹ “The Sunnification of Ḥadīth and the Hadithification of Sunna,” in *The Sunna and Its Status in Islamic Law: The Search for a Sound Hadith*, ed. Adis Duderija, Palgrave Series in Islamic Theology, Law, and History (New York: Palgrave Macmillan, 2015), 78.

³⁹⁰ Hallaq, *The Origins and Evolution of Islamic Law*, 69.

Abd al-Malik (c. 674 – 22 September 717) judges were being centrally appointed to the provinces by the caliphate outside of Islam's home in the Hijaz and bereft of the *aḥādīth* collections.³⁹¹ Fakhry draws our attention, however, to the fact that a division between “traditionalism” and “rationalism” had already emerged by this time within the realm of theology, and although Fakhry agrees with Ibn Khaldūn that the early *fuqahā'* were avowed “literalists,” he also writes that they “did not altogether fail to perceive the obvious logical incongruities of the sacred texts and the problems of interpretation and harmonization which they inevitably raised.”³⁹² That is, in an expanded empire, now with the challenges of governance on a vastly larger and culturally more diverse scale than the Hijaz and early conquests under Muḥammad, judges were without doubt giving “informed decisions” in ways that either sought to apply earlier precedents in the form of the received *Sunna* or *al-Qur'ān* or were necessary innovations. Such innovations were unproblematic in so far as there was no precedent within the canon—that is, as long as they were not subjects that would fall under *Sharī'a*, religious law. In extending precedents to cover similar situations, however, over-extension was possible, and over-extension would result in an illegitimate innovation, *bid'a*. Some understanding of this term, *bid'a*, as well as the extension and possible over-extension of the law will help clarify the nature of the debate between the *Ahl al-Ra'y* and the *Ahl al-Ḥadīth* as well as the nature of *qiyās*.

A classical example is the prohibition of wine, *khamr*.³⁹³ *Khamr* means grape wine. The question arises whether this prohibition applies to other alcoholic beverages such as those made from fermenting barley or other fruits. For the sake of the argument, let us assume that this prohibition on *khamr* was the only prohibition within our legal sources and was in the form, “*Khamr* is *ḥarām*” (in actuality, there are a great many *aḥādīth* related to other intoxicants³⁹⁴). So, whether or not this applied

³⁹¹ Hallaq, 57.

³⁹² Fakhry, *A History of Islamic Philosophy*, 44.

³⁹³ See Saheeh International and Muntadā al-Islāmī, eds., *The Qur'ān: English Meanings and Notes* (London: Al-Muntada Al-Islami Trust, 2011), vv. 5:90; 12:36,41; 2:219; 5:91; 47:15.

³⁹⁴ For examples from *Ḥadīth* collections of prohibitions against intoxicating beverages, see Muhammed Ibn Ismaiel al-Bukhari, *Sahih Al-Bukhari: The Translation of the Meanings*, trans. Muhammad Muhsin Khan (Riyadh-Saudi Arabia: Darussalam Pub. & Distr., 1997), 1:4:243, 7:69:503, 7:69:491. Muslim ibn al-Ḥajjāj al-Qushayrī, *Ṣaḥīḥ Muslim: Being Traditions of the Sayings and Doings of the Prophet*

to barley wine, for example, might be a legitimate application of *qiyās* (analogy); *khamr* is *ḥarām* (prohibited) because it is intoxicating; hence, barley wine, which, like *khamr*, is also intoxicating, is likewise *ḥarām*. A literalist, given our hypothetical lack of other sources, might object that since the text only prohibits wine made from grapes, other intoxicating beverages are *de facto* permissible (*mubāḥ*) to consume. To assume that wine is *ḥarām* because of one of its properties (intoxicating) is to attribute something not found within the text itself and therefore would represent impermissible innovation due to overextension of the rule since the text does not state that whatever is intoxicating is prohibited. Furthermore, there is no principled way, alleges the literalist, to stop the application of analogy, echoing Umberto Eco's concerns we heard about in the first chapter, that “Once the mechanism of analogy has been set in motion there is no guarantee that it will stop The image, the concept, the truth that is discovered beneath the veil of similarity, will in its turn be seen as a sign of another analogical deferral.”³⁹⁵ For example, *khat*, the leaves of the *Catha edulis* shrub that were known to al-Bīrūnī in the eleventh century CE, likewise has a somewhat intoxicating, stimulating effect when chewed. By extension of the analogy in respect to intoxication, should it also be *ḥarām* (forbidden)? Moreover, more recently a number of pharmacological products from allergy medicines, cough syrups to pain killers and cancer treatments intoxicate individuals. Should these likewise be *ḥarām*? While this debate in fact did not actually occur, given the strong sources for the impermissibility of other intoxicating beverages (see footnote 394), such debates did occur with the introduction of intoxicants such as opium and its derivatives. Another such example is the debates that took place over the use of dog and pig leather. The flesh of both animals is *ḥarām*, but the question arose whether or not wearing their skins after tanning was *ḥarām* or *mubāḥ* since the wearing of the tanned skins was not mentioned.³⁹⁶ Such disagreements in jurisprudence gave rise to deeper critiques

Muḥammad as Narrated by His Companions and Compiled under the Title Al-Jāmi‘-Uṣ-Ṣaḥīḥ, trans. Abdul Hameed Siddiqui (New Delhi: Kitab Bhavan, 2004), 23: 4953.

³⁹⁵ Eco and Collini, *Interpretation and Overinterpretation*, 164.

³⁹⁶ “Fatwas of Ibn Baz.” Accessed December 9, 2018. <http://www.alifta.net/fatawa/fatawaDetails.aspx?>

and criticisms against the practice of using *qiyās* and the validity of analogical reasoning.³⁹⁷

Along with the new materials for jurisprudence, with the rise of *‘ilm al-Ḥadīth*, there also rose a number of competing schools of Sunni jurisprudence, the *madhhabs*, of which the *Zāhirī madhhab* and *Shāfi‘ī madhhab* were two. In some ways, both can be seen as a reaction to the two other schools, centered around Medina and Kufa (Kuffah) respectively, *Mālikī* and *Ḥanafī*. Both are attacked by al-Shāfi‘ī, even though al-Shāfi‘ī himself seemed to identify with the *Mālikī* school. The former school was critiqued for its over-reliance on the practices of the community of Medina, and the latter for rulings that seemed arbitrary, departed from doctrinal sources, or used dubious sources.³⁹⁸ It was the geographical separation of these two *madhhabs* that perhaps most influenced their divergences, with scholars observing that the more cosmopolitan Kufa was influenced by Greek, Roman and Persian legal traditions, which were often borrowed and incorporated into *Ḥanafī* rulings.³⁹⁹ Al-Shāfi‘ī then is often thought of as the first great system builder of Islamic jurisprudence, and while scholars acknowledge systemization had already begun in these earlier schools, al-Shāfi‘ī’s *Risāla* is considered by some scholars the first attempt to spell out a specific legal methodology, and therefore represents the first work of *uṣūl al-fiqh* proper.^{400, 401}

THE ELEMENTS OF THE ISLAMIC LEGAL DEBATE

In considering how these debates played out, two central contrasts are those between legitimate

language=en&BookID=14&View=Page&PageNo=1&PageID=783.


³⁹⁷ For an accessible and extended discussion of these debates, see B. G. Weiss, *The Spirit of Islamic Law* (University of Georgia Press, 1998), 67-87.


³⁹⁸ Joseph Schacht, *The Origins of Muhammadan Jurisprudence* (Oxford: Clarendon Press, 1979), 7–10; Wael B. Hallaq, *A History of Islamic Legal Theories: An Introduction to Sunnī Uṣūl Al-Fiqh* (Cambridge, New York: Cambridge University Press, 1997), 17; Noel J. Coulson, *A History of Islamic Law*, Reprinted, *Islamic Surveys 2* (Edinburgh: Univ. Press, 1964), 50–52.

³⁹⁹ Mohammad Fauzi, *Sejarah Hukum Islam*, 2018, 36, <https://books.google.com/books?id=Q-deDwAAQBAJ>; Hallaq, *A History of Islamic Legal Theories*, 27–28; Coulson, *A History of Islamic Law*, 50.

⁴⁰⁰ Fauzi, *Sejarah Hukum Islam*, 57; Hallaq, *A History of Islamic Legal Theories*, 21.

⁴⁰¹ Robert Gleave remarks that while the origin of the *Zāhirī* school is not as yet well understood, it was “based in Baghdad and probably linked to al-Shāfi‘ī (and possibly Mu‘tazilī) circles.” *Robert Gleave, Islam and Literalism: Literal Meaning and Interpretation in Islamic Legal Theory* (Edinburgh: Edinburgh University Press, 2012), 147.

law and impermissible innovation on one hand and then *zāhir* and *bāṭin* on the other. The first of these contrasts explained above,  some brief overview of *zāhir* and *bāṭin* is necessary. These terms mean “outer” or “obvious” and “inner” or “hidden” respectively. As such, these terms have been central in a number of Islamic theological and philosophical debates in the realm of ethics, spiritual cultivation, and *tafsīr* or Qur’ānic exegesis. In the latter of these debates, the central contention was whether some or all of the passages of the Qur’ān should be read literally in the most commonly accepted and least interpreted manner, or whether some or all of the passages of the Qur’ān had a hidden inner meaning that could only be found through some sort of interpretation, whether that be through a master or Imām as in Shi‘a traditions or through study and mediation or accompanying spiritual practices as in some Sufi traditions. The literalists rely at least implicitly on the assumption that the revelation is open and understandable to all no matter their mental or interpretive capacities, while those who argue interpretation is needed, assume deeper spiritual truths or a rationality they allege are contained within the revelation.

So, what might be the case of a *bāṭin* in the legal context  return to the case of *khamr* being *ḥarām*, the “inner meaning” would involve identifying the principle or quality of the action which makes it *ḥarām*—the *ratio legis* (*‘illa*). Simply put, the contrast with the *Zāhiri* approach is that not only do injunctions apply particularly to their specific described cases, as with the *Zāhiris*, but also to other cases which are similar in the same respect to the *‘illa* of the first case, but to expand the application of the injunction requires interpretation. In the case of *khamr*, this *‘illa* would be *khamr*'s intoxicating properties. Therefore, similar cases in which intoxicating properties are to be found in a substance would fall under the same prohibition. *Khamr* is illegal because it is intoxicating, so whatever is intoxicating is illegal. The *Zāhiri* would balk at this interpretation. What was stated was only, “*khamr* is *ḥarām*” and not that whatever is intoxicating is *ḥaram*. So, to identify a property of

khamr as the basis for the “*bāṭin* interpretation” is illegitimate.⁴⁰²

There is a deeper issue at play here that runs the course of Islamic ethics and is familiar to Western readers as the “Euthyphro Dilemma” from the Platonic dialogue, *The Euthyphro*. The dilemma is essentially “Does God command a particular action because it is morally right, or is it morally right because God commands it?” The danger according to some theologians is that if independent principles of morality or legality are discerned, then that would allow us to identify the reason something is wrong or right outside of divine command (canonical sources) and would suggest that such things would be wrong *regardless* of divine command. That is to say, for example, that Allah prohibits an action because it is wrong; it is not wrong because Allah prohibits it. This suggests that Allah would not have the freedom to make moral determinations. And as an omniscient and omnipotent being, such a scenario would be impossible because there can be no power to compel Allah. The identification of moral principles then is, for some, categorically prohibited in *uṣūl al-fiqh* because it directly contradicts what is known about the nature of the divine. Such theological debates then cast long shadows over the jurisprudential disputes.

Adam Sabra, in prefacing his translation of the *al-Nubdha al-Kāfiya fī Uṣūl Ahkām al-Dīn*, has argued Ibn Ḥazm’s central assumption is that Qur’ānic language is static and unchanging, citing the earlier work by Arnaldez and Y. Linant de Bellefonds.⁴⁰³ This assumption leads Ibn Ḥazm through various disciplines of Islamic sciences but is nowhere more pronounced than in his works on *tafsīr* and *uṣūl al-fiqh* in which the avowed *Zāhiri* provides a careful, close, but literal reading of the texts.⁴⁰⁴

Ibn Ḥazm sets down a number of principles that guide his methodology, and while not all bear directly on his critique of analogical reasoning, they are necessary to understand the overall approach

⁴⁰² In some ways, this is a superficial *bāṭin* since one could push further for the reason *why* intoxicants are forbidden.

⁴⁰³ Adam Sabra, “Ibn Ḥazm’s Literalism: A Critique of Islamic Legal Theory,” in *Ibn Ḥazm of Cordoba: The Life and Works of a Controversial Thinker*, ed. Camilla Adang, Ma Isabel Fierro, and Sabine Schmidtke, Handbook of Oriental Studies. Section 1, the Near and Middle East, volume 103 (Leiden ; Boston: Brill, 2013), 98–99.

⁴⁰⁴ Salvador Peña, “Which Curiosity? Ibn Ḥazm’s Suspicion of Grammarians,” in *Ibn Ḥazm of Cordoba: The Life and Works of a Controversial Thinker*, ed. Camilla Adang, Ma Isabel Fierro, and Sabine Schmidtke, Handbook of Oriental Studies. Section 1, the Near and Middle East, volume 103 (Leiden ; Boston: Brill, 2013), 236.

and perhaps other concerns that motivate the critique of analogy. The first set of principles which he accepts is expressed by him as follows:

We are certain that the religion which our Lord made obligatory upon us and which He made our only salvation from Hell is made clear in its entirety in the *Qur'ān*, in the Sunna of His Messenger (pbuh), and in the consensus of the community, and that the religion has been completed; there is nothing to be added or subtracted from it. And He made us certain that all of this is preserved and kept accurate, for Exalted God said, “It is We who have sent down the Remembrance, and We preserve it” (Q 15:9).⁴⁰⁵

We can unpack these principles as follows. First, the knowledge of Islam is complete. That is, all of Islam’s knowledge is contained in the *Qur'ān*, in the Sunna (as recorded in the *Ḥadīth*—more will be said about the restrictions Ibn Ḥazm places on *Ḥadīth*), and in the consensus of the community (*ijmā'*). He will provide arguments for why other modes of reasoning are prohibited, and these arguments are not merely appeals to theological dogma but critiques of the forms of reasoning given the demand for certainty. That these sources contain the totality of what is needed for Islam and therefore for Islamic law, *Sharī'a*, is important because it means that we need not seek anything outside of them to know Islam.

The second principle is placed on *ijmā'*, or consensus, and stems from the epistemological requirement that Ibn Ḥazm demands of all religious knowledge: certainty. In fact, certainty is the single overarching principle of Ibn Ḥazm's methodology. Certainty rests upon proof, and the present author is tempted to identify Ibn Ḥazm as a sort of Islamic proto-intuitionist. He cites the *Qur'ān* 27:64: “Produce your proof, if you should be truthful.”⁴⁰⁶ From this he reaches a hard intuitionist conclusion: “So it is true that whoever lacks proof is not truthful in his claim.”⁴⁰⁷ For consensus to be true consensus, everyone must agree. For Ibn Ḥazm, the implication is clear: only when there was a

⁴⁰⁵ Ibn Ḥazm, *Al-Nubdha al-Kāfiya Fī Uṣūl Aḥkām al-Dīn*, 113.

⁴⁰⁶ Ibn Ḥazm, 114.

⁴⁰⁷ Ibn Ḥazm, 114.

small group of Muslims, the Companions of the Prophet, was consensus possible, but now that the religion has so many adherents, it is nigh impossible for them to reach a consensus, and furthermore, it is practically impossible to determine whether or not there is such a consensus. Therefore, the only true consensus was the unanimous consensus of the Companions when they exhausted the number of people following Islam.^{408, 409}

This demand for certainty then influences Ibn Ḥazm's theory of consensus but also what *Ḥadīth* should be accepted or rejected: only those *aḥādīth* which can be established with absolute certainty—a clear and trustworthy chain of transmission going back to Muḥammad.⁴¹⁰ This rejection of consensus has, he notes, a logical consequence:

As we have described, if there is no consensus, there must necessarily be a disagreement, because they are mutually exclusive.⁴¹¹ If one is absent the other must occur, there is no alternative. If this is so, one should consult the *Qur'ān* and *Sunna* which Exalted God obliges us to consult, when He says, may He be exalted, “If you should quarrel on anything, refer it back to God and the Messenger, if you believe in God and the Last Day.” (Q 4:118–9)⁴¹²

Without consensus, there must be disagreement. However, given the rallying cry of “no truth without proof” this means that where there is disagreement, one must look at the proof, and for Ibn Ḥazm this will be found in the sources of religious knowledge. He takes it, given his literalism, that there will be no disagreement in the interpretation of these sources of knowledge as long as they are taken literally and apply only to their specific injunctions.

Something must be said, however, about the “literalism” of Ibn Ḥazm that supports his claim

⁴⁰⁸ Ibn Ḥazm, 115.

⁴⁰⁹ Ibn Ḥazm also provides an argument as to why the consensus or practices of Medina are also not taken as sources of legal knowledge. While he develops seven reasons as to why the practices of Medina are not legally binding, his fourth point is simply it is not true all those in Medina are in agreement, and therefore there is no consensus. Ḥazm, 120–21.

⁴¹⁰ Osman, *The Zāhirī Madhhab (3rd/9th-10th/16th Century)*, 2014, 83–84; Ibn Ḥazm, *Al-Nubdha al-Kāfiya Fī Uṣūl Aḥkām al-Dīn*, 119–21 and 123–28.

⁴¹¹ Perhaps this seeming acceptance of the law of excluded middle demonstrates in fact he is not an intuitionist after all!

⁴¹² Ibn Ḥazm, *Al-Nubdha al-Kāfiya Fī Uṣūl Aḥkām al-Dīn*, 122.

that religious sources of knowledge are unproblematic and, unless interpretation is specified, do not require interpretation. As Robert Gleave states, while not privileging any language over another, Ibn Ḥazm takes language to be a divine invention and not a product of human ingenuity, and many clever arguments are offered for this (for example, God taught 'Ādam the names of the all the animals, but had there not have been a language available, this would have been impossible). Gleave argues that,

Where [Ibn Ḥazm's] approach is, perhaps, distinctive in his insistence on God's creation of language, and therefore the identity of intended and literal meaning in that language. By doing so, he establishes God's unambiguous control of literal meanings (be it *ab initio*, or by subsequent decree), and avoids the possible confusion of literal meanings which would arise from human (and hence frail) designation of meaning to words.⁴¹³

Tamara Albertini, drawing on the work of Roger Arnaldez, emphasizes this point; that divinely arranged language ensures clarity of meaning.⁴¹⁴ What ensures this clarity of meaning is not a strict literalist reading, but what Albertini terms an “apparentist” meaning.⁴¹⁵ Here the work of François Recanati is useful in fleshing out the “apparentist” position.⁴¹⁶ Recanati, in exploring the issue of literal versus non-literal language from the standpoint of semantic and pragmatic meanings, reaches the conclusion that there are many uses of language that are in fact “non-literal” but whose meanings are readily apparent given the context in which they are issued. He draws a distinction between strictly literal meaning, *t*-literal meanings (“I am going to drive south on the road to London”), and *m*-literal meanings, which are meanings that minimally depart from *t*-literal meanings (“I am going to run down the road to London”).⁴¹⁷ Recanati writes, “Through the interaction between the context-independent meanings of our words and the particulars of the situation talked about, contextualized, modulated

⁴¹³ Gleave, *Islam and Literalism*, 153–54.

⁴¹⁴ Tamara Albertini, “Ibn Ḥazm’s and Al-Ghazzālī’s Most Divergent Responses to Christianity: A Question of Epistemology and Hermeneutics,” in *Nicholas of Cusa and Islam*, eds. Ian Christopher Levy et alia, (Leiden, The Netherlands: Brill, 2014), 222, <https://brill.com/view/title/25528>.

⁴¹⁵ Albertini, 221.

⁴¹⁶ François Recanati, *Literal Meaning* (Cambridge ; New York: Cambridge University Press, 2004).

⁴¹⁷ Recanati, 68–71.

senses emerge, appropriate to the situation at hand.”⁴¹⁸ There is no mystery involved in this fixed meaning of words and variable context, argues Recanati, a position he calls “contextualism,” for if there were, then language would fail (if, for example, meaning were supposed to depend on the intentions of a speaker rather than the intersubjectively available public meaning). It is this sort of literalism that Gleave assigns to Ibn Ḥazm. While a speaker or author may stipulate a meaning, for example by introducing an existing word as a technical term, Recanati terms this a secondary meaning, and these are not the primary vehicles of meaning. Instead, the primary meanings, but *t*-literal and *m*-literal, are fixed, for Recanati as other philosophers of language, by convention. Recanati introduces a third term, which is not exclusive of the other two, of *p*-literal.

An interpretation for an utterance is *p*-literal just in case it directly results from interpreting the sentence (in context), without being derived from some antecedently determined meaning by an inferential process akin to that which is involved in conversational implicatures, indirect speech acts, and so on.

David Lewis gives a helpful argument for meaning by convention, taking the expression of meaning as a human activity, and captures the intersubjectivity of meaning by convention well, applying to *p*-literal sentences:

- (1) Everyone conforms to R.
- (2) Everyone believes that the others conform to R.
- (3) This belief that the others conform to R gives everyone a good and decisive reason to conform to R himself.⁴¹⁹

This position, that convention fixes the meaning language, is not that of Ibn Ḥazm as we have already observed. Instead, the meanings of words are fixed by their author, in this case the divine. But as we will see, with some additions, the notion of *p*-literal seems to nicely capture

⁴¹⁸ Récanati, 131.

⁴¹⁹ David Lewis, “Languages and Language,” in *Minnesota Studies in the Philosophy of Science*, ed. Keith Gunderson, vol. 7 (University of Minnesota Press, 1975), 5.

Ibn Ḥazm's theory of meaning.

Albertini emphasizes something that is another distinct feature of Ibn Ḥazm's theory of language, and that is that individual words have a single, fixed meaning.⁴²⁰ While he in no way denies the sorts of secondary meanings Recanati identifies, such meanings do not play a role in revelation.⁴²¹ This single-meaning thesis provides grounding for certainty, but it need not be naive literalism for Ibn Ḥazm seems perfectly willing to accept *m*-literal and *p*-literal sentences—it is simply that there is no ambiguity regarding the words' departure from their *t*-literal meanings. In the example of a *m*-literal (it is also *p*-literal) sentence given earlier, “I am going to run down the road to London,” while the use of the words “run” and “down” are not used in their strictly literal *t*-literal sense, there is no interpretation needed given the clarity of the expressions even though not strictly literal. The meaning is readily apparent, and it is this sense, of taking the apparent and least interpreted meaning of words, given the clarity guaranteed by God, that is Ibn Ḥazm's theory of meaning in religious exegesis.

However, this apparentist in itself would not rule out analogical reasoning. Recall the standardize analogy exams discussed in the first chapter. The example was, “A fish is to school as a _____ is to a forest.” Clearly, no ambiguity is involved in the process of solving the analogy, and the *t*-literal and *p*-literal meaning of both words is what allows one to complete the analogy. Yet these are not the sorts of analogies involved in jurisprudence and engaged particularly when enlarging the domain or application of a legal injunction.

The demand for certainty and proof then becomes a principle for legal exegesis combined with a commitment to the clarity of language, the apparentist position. He admits that there may be religious texts which are not to be interpreted literally, however, there will be proof (in the form of the accepted sources of religious knowledge) that a specific text is not meant to be taken literally.

Although Ibn Ḥazm's arguments are not metaphysical but epistemological, they rest on the critical

⁴²⁰ For a sustained discussion of a possible objection to this view that each word has a single meaning, given than there are homophones, see Gleave, *Islam and Literalism*, 157–58.

⁴²¹ Albertini, 223.

assumption that in making analogical arguments or claims (“this is like that”) we may lack proof of the relevant similarity, or that we lack proof that the shared quality is in fact the basis or *‘illa* for the injunction. For Ibn Ḥazm, it is only when the quality itself is indicated in a pronouncement (“anything with quality x”) that similarities can serve as the basis for legal reasoning.

Consider, for example, when analogies fail to yield true conclusions. Take the argument below:

P1: Oranges are good to eat.

P2: Oranges are orange.

P3: This piece of plastic is, like the orange, orange.

C1: Therefore, this piece of plastic is good to eat.

The similarity (colored orange) is not an adequate basis to infer that the two items therefore share other qualities or properties (like being edible). It fails to be an *‘illa*. Ibn Ḥazm's point is that all analogical reasoning is like this—that similarities fail to be infallible grounds for inferences to other similarities (even if there is no ambiguity in terms of the meaning of the words). So, to return to the example of “*khamr* is *ḥarām*,” the fact that something shares a property with *khamr* (of being intoxicating) is not grounds for inferring that it is also *ḥarām*. This need not be a matter over the meaning of *khamr*, but an acknowledgment that without a clear injunction saying that whatever is intoxicating is *ḥarām*, one cannot, without risk of error, infer from “*Khamr* is *ḥarām*” to “Whatever is intoxicating is *ḥarām*.” It can be made a matter of meaning if secondary meanings are introduced, and one attempts to determine the intentions of the author is stating, “*Khamr* is *ḥarām*.” Yet such “reading in” is clearly antithetical to Ibn Ḥazm's approach both on the basis of his theory of meaning and demand for certainty in religious matters.

Ibn Ḥazm's demand for certainty means that he can only consider “rule-firing” systems rather than “mapping” systems of legal reasoning—the fact that analogies can lead to false conclusions about the inference of other properties is enough for him to reject analogical reasoning in theology and

religious jurisprudence. Only in cases like that presented by Aristotle (see Chapter One) in which “induction leads to deduction” is inductive reasoning, analogical or not, permitted by Ibn Ḥazm's apparentism.

Jurist al-Shāfi‘ī's theological assumptions also color his jurisprudential principles. For him, it is the idea of both completeness and knowability. In his *Kitāb al-Risāla fī Uṣūl al-Fiqh*, he writes:

. . . everything that befalls a Muslim, I said, a binding rule or something that indicates the way to attain the correct answer in regard thereto. If there is a rule concerning that specific thing, one must follow it. If there is no such rule, then one should seek what indicates the correct answer to the issue in question by means of legal interpretation.

Legal interpretation is equivalent to analogical reasoning.⁴²²

For Ibn Ḥazm, religion is complete, but it is not totalized in the way it is conceived of by al-Shāfi‘ī.

For Ibn Ḥazm, those areas of life not explicitly mentioned in the legitimate sources of religious knowledge are essentially secular. Although Ibn Ḥazm is often seen as ideologically conservative, his vision of *Sharī‘a* is very much restricted—*Sharī‘a*'s scope is very limited giving his sort of literalism, perhaps most famously known by his discussions of homosexuality. For al-Shāfi‘ī, the purview of *Sharī‘a* is broader, and it seems this broader conception of the scope of religious laws operates in part as a justification for the need for analogical reasoning or legal interpretation.

Al-Shāfi‘ī writes that there are two species of analogical arguments: “one of them is where the matter is within the scope of the rationale underlying the basis for the analogy.”⁴²⁴ These analogies are conclusive and do not differ between persons (generalizations like, “Whatever is intoxicating is *ḥarām*,” in that the categorical generalization requires the application of similarity-based reasoning to determine whether the injunction holds in any given case). He interestingly uses an analogy to explain

⁴²² Shāfi‘ī and Lowry, *The Epistle on Legal Theory*, 200.

⁴²³ Camilla Adang. "Ibn Ḥazm on Homosexuality. A case-study of Zāhirī legal Methodology." *Al-Qanṭara* 24, no. 1 (2003): 5-31.

⁴²⁴ Shāfi‘ī and Lowry, 201.

this use of analogy that deals with apparent meanings. He says that we can judge a man by his outward actions and determine if he is worthy to, for example, be designated as one's heir or married to one's daughter.⁴²⁵ This is like analogical arguments dealing with apparent meanings. However, as we learn more about a person, we might find him unworthy despite his outward actions.⁴²⁶ This then is contrasted with the reasoning, readily available to all, based on outward appearances alone. We are only obligated to act upon knowledge that we have; so, if he behaves worthily and we do not know his inner thoughts, we are not responsible for our mistake of finding him worthy. If we did know, however, about his inner states, then we would be responsible for our mistake of finding him worthy based on outward appearances alone. This consideration of inner states is an analogy for the second type of analogy:

The case where the thing resembles several matters among those bases for an analogy. In that case, one relates it to the basis most appropriate for it and that resembles it most. The persons who reason analogically may differ in this case.⁴²⁷

So, al-Shāfi'ī does not take absolute certainty as the criteria for legal judgements, but instead “what is perceived to be true.” But this truth that can be perceived includes truths about “apparent meanings.”

He writes,

Am I not legally responsible for the truth in its two aspects? One of them is a truth that involves objectively certain knowledge of both the apparent and the true meaning, and the other is a truth in what is apparent, and not in the true meaning.⁴²⁸

Hence, for al-Shāfi'ī, the truths that ground legal interpretation include both the *zāhir* and *bāṭin*. Al-Shāfi'ī defends the fact that analogical reasoning can, when dealing with the “inner” or “hidden meaning” of texts, occasionally result in differences among jurists in the grounding of their decisions

⁴²⁵ Shāfi'ī and Lowry, 202–3.

⁴²⁶ Shāfi'ī and Lowry, 202.

⁴²⁷ Shāfi'ī and Lowry, 201.

⁴²⁸ Shāfi'ī and Lowry, 204.

because similarities are manifold.⁴²⁹ Therefore, there are perhaps more than one similarity which one can appeal to that exists between two actions or substances that grounds the inference, “As in this case, so in that case.”

It is important, too, that legal knowledge be understood as matching prohibitions, prescriptions, and paradigmatic examples to actual cases even when the statement is categorical. This knowledge requires determining whether or not the relevant similarities hold between the present case and the law. Al-Shāfi‘ī illustrates this point as he considers the rule for prayer. Today, many hotel rooms feature a *qibla* on the wall, indicating the direction of the *Ka‘ba* in Mecca that Muslims must face as they perform *ṣalā‘i* or prayers. Al-Shāfi‘ī notes that no matter where one is, one has the obligation to face Mecca when performing one's prayers. How does one ascertain this direction when one is in the desert or in some disorienting cityscape? Al-Shāfi‘ī's answer seems pragmatic: however one best can. That is, the obligation is that you, to the best of your ability to figure it out, face the direction you believe to be Mecca.⁴³⁰ Al-Shāfi‘ī's illustrations have two main points. First, you have to determine if your situation is governed by the rule or paradigm, and that depends on whether or not the relevant similarities exist between the rule or paradigm and the present case. So, a person may pray outside the specific times prescribed for *ṣalā‘i*, and such prayers need not be made while facing Mecca. The ruling is restricted to only those prayers that are *ṣalā‘i*. Second, the illustration serves as an analogy. There is, al-Shāfi‘ī claims, simply no way of determining with certainty whether one is facing Mecca or not in many cases because Mecca is “hidden.”⁴³¹ Yet, even failing to have that certainty, one may have sufficient grounds for praying in one direction rather than another while admitting there could be an error. He states, “[This] is an example of analogizing; they approximate one another as do the goat and the gazelle, but are also somewhat disparate, as are the kid and jerboa.”⁴³² He goes on to emphasize, however, we are

⁴²⁹ Shāfi‘ī and Lowry, 206–7.

⁴³⁰ Shāfi‘ī and Lowry, 205.


⁴³¹ Shāfi‘ī and Lowry, 205.

⁴³² Shāfi‘ī and Lowry, *The Epistle on Legal Theory*.

only legally responsible for the knowledge that we have, which can include *ẓāhir* and *bāṭin* and our perception of the truth.⁴³³ As Hallaq explains,

Al-Shāfi‘ī analogy serves to introduce a related matter. Just as two men may determine the location of the Ka'ba differently, so may two jurists arrive at different solutions to the same legal problem. Obviously, one of them must be in error, though more often than not this cannot be determined. Whatever the case, they are equally obligated to attempt to discover the law, and they are both rewarded for their efforts. To maintain that because error is possible no [reasoning] should be undertaken is tantamount to arguing that no prayer should be performed until certainty about the location of the Ka'ba is attained — an argument that is plainly objectionable.⁴³⁴

Both men reach the same conclusions; that differences in analogical reasoning are possible. For the *Zāhirīs*, this possibility of disagreement means that such reasoning is not permissible when it comes to legal or theological differences. For al-Shāfi‘ī, analogy need not always be resorted to, but when it is, it can be acceptable for as long as it is apt and accurate based on the totality of one's present knowledge.

This then allows us to return to the third possibility that emerged from the discussion of the South Asian tradition: that degrees of similarity are not based on the quantity of similarities. Rather, that things may be more or less similar depends instead on the weight that we assign particular resemblances. This conceptual weighting may differ between thinkers. This is a significant issue. What is a compelling analogical argument for one may not be for another. One may fail to identify similarities between two objects that another can. Does this mean such appeals or arguments are illegitimate? No, but we should pay attention to what al-Shāfi‘ī tells us: analogy can be acceptable as long as it is apt abased on one's present knowledge.  With this insight, we can now begin weaving

⁴³³ Shāfi‘ī and Lowry, 205.

⁴³⁴ Hallaq, *A History of Islamic Legal Theories*, 28.

together a stronger response to the question of the epistemology of similarities and perhaps relations in general.

RESTRICTING ANALOGIES

In what we have discussed in the past chapters involved some of the metaphysical and epistemological problems of relations in general and similarities as a specific species of relations. In closing, this work proposes that there is an intellectual virtue that is relational or analogical sensitivity that (1) allows one to better recognize relations and similarities, (2) allows one to both solve analogies and make apt analogies, and (3) is a virtue that can be cultivated. But before elaborating on these three aspects of the virtue of relational and analogical insight, the problem of trivial necessitation must be addressed as an error in reasoning and one that points us towards (1) and (2).

Our consideration of the ontology of similarity offers us some insight into how similarity claims can be properly formulated. It is incorrect to think of similarity itself as a *property*, or a one-place predicate, as argued in earlier chapters. Similarity is not a one-place predicate, and in fact, it is not a proper property at all—instead, it is simply the having of a property in common however we want to interpret that. We have relational properties: “longer than” is just such a relational property, hence, the stick (*a*) is longer than the pencil (*b*), aLb (*a* is longer than *b*). Similarity is a symmetrical relationship, unlike longer. But longer is a transitive relation, unlike similarity. But here is where the problem arises: we know that all analogies are trivially true. This means that truth functionally any sentence of the form “*x* is like *y*” will behave as if it is transitive in terms of communicating truth values. Let us call sentences with the form “*x* is like *y*” “unconstrained” similarity claims just to acknowledge no specific resemblance is being specifically asserted. So, any two premises of an argument with that form will result in a true conclusion of that form.

P1: A pencil is like a stick.

P2: A stick is like a club.

C1: Therefore, a club is like a pencil.

Immediately, one who wishes to hold that similarity is in fact a transitive relation will point out that properly speaking the conclusion is after all true, particularly if we accept Greenlee's principle of Similarities of Discernables, as we should, that claims that all particulars are, necessarily, similar in some way. So, it is true that xRz . Granting the opponent of non-transitive similarity this, we can still point out it is not from the truth of P1 or P2 that we reached C1 so it is not *derivatively* truth functional. The premises in no way logically entail the conclusion. It is not merely a difference of material and formal truth, for while we accept that formally C1 is true, its truth was not determined derivatively, and its truth value is assigned materially. That is, it wasn't through transitive operations that we arrived at our true conclusion.

This problem raises a series of issues that deserve to be addressed since it is of particular importance to this discussion given that all resemblance claims of the (unconstrained) form xFy are true and necessarily true, and those issues concern necessitation and constraining necessitation. Several problems of necessitation and truthmaking have been discussed in the context of the truthmaker debate and arguments that truth supervenes on being, many of which were discussed in Chapter Two, with the common formulation of the truthmaker thesis as, “ x makes p true if and only if: x necessitates p .” One such problem is now commonly known as Restall's Refrigerator. It considers the fact that, given the above definition, any contingently existing entity is then a truthmaker for every necessary truth. Hence, Restall's refrigerator is the truthmaker for “ $5+5=10$ ” and every other necessary truth. David Lewis describes the core of the problem:

In a slogan: every truth has a truthmaker. Spelled out at greater length: for any true proposition P , there exists something T such that T 's existence strictly implies (necessitates) P ...if P is a necessary proposition, then for any T whatever, T 's existence

strictly implies P. So the Truthmaker Principle, as I have stated it, applies only trivially to necessary truths.⁴³⁵

If the principle of Similarities of Discernables is correct as well as the truthmaker slogan, Restall's refrigerator is the truthmaker for the “a pencil is like a club.”⁴³⁶ In attempting to strengthen the truthmaker thesis before turning to its critique and rid it of “trivial” applications, Trenton Merricks has suggested that it must be restricted in some way to preclude the problem of Restall's Refrigerator as well as other problems associated with necessitation and entailment.⁴³⁷ He has suggested that the necessitation relation be restricted by a second relationship that must hold between a truthmaker and what it makes true—that is an *aboutness* relation. He writes that “necessitation is not the whole of *making true* . . . a truthmaker must be that which its truth is about.”⁴³⁸ Truthmaker, as a somewhat modern-day resuscitation of the correspondence theory of truth, is surely open to many criticisms, even in its strengthened form given to it by Merricks whom himself goes on to offer a number of reasons why we should reject the truthmaker thesis even in this strengthened form. It does preserve, however, one of our deep intuitions about truth—that is, if something makes something true (say a state of affairs makes a proposition true) then that proposition should be *about* that state of affairs. Restricted with an aboutness relation, any contingently existing object now fails to be the truthmaker of any necessary truth because the necessary truth and the existing object do not stand in an aboutness relation to one another. In the case of analogies, this aboutness is simply the respect by which the two items of the analogy are similar that justifies making a claim about a specific similarity relation that holds between them.

⁴³⁵ David Lewis (2001). ‘Truthmaking and Difference-Making’, *Nous*, 35: 602–15. 604.

⁴³⁶ See Greg Restall (1996). “Truthmakers, Entailment, and Necessity,” *Australasian Journal of Philosophy*, 74: 331–40. Also see Barry Smith (2002). Truthmaker Realism: Response to Gregory. *Australasian Journal of Philosophy* 80 (2):231 – 234.

⁴³⁷ Notably, John's Funeral which deals with the transitivity of entailment and necessitation. See Barry Smith (1999). “Truthmaker Realism”. *Australasian Journal of Philosophy* 77: 274–291. For Merricks discussion that follows, see Trenton Merricks, *Truth and Ontology*. New York: Oxford University Press, 2007.

⁴³⁸ Merricks, 28.

That the relationship between P1 and P2 are not *about* C1a in the appropriate way is why we want to resist the claim that just because the argument is true (and necessarily so, if we grant the Similarities of Discernables) that it follows from the premise. It is much like an argument that says “Red is red, and blue is blue. Therefore, green is green.” While no one would debate the truth of the argument, one is suspicious of the “therefore.” What we have is not a conclusion of an argument, but rather another tautology or necessary truth masquerading as a conclusion in much the same way that given Restall's Refrigerator, therefore Fermat's Last Theorem.⁴³⁹ This is why we should have no qualms about rejecting C1 as the conclusion of an argument. Even if the conclusion is true, it is not true because it follows or is derived from the preceding premises of the argument.

We see then how we can prevent analogies from being trivially or necessarily true by demanding that analogies be about some specific similarity relation. However, for those of use who have read a poem that we did not understand, we know that even though there may be some shared respects, it does not always mean that we can figure it out. The person who can engage in such interpretation is able, given the totality of their knowledge, figure out what the analogy is about. For additional insights into this problem, we must turn to the work of Santosi Watanabe [Watanabe?].

⁴³⁹ Fermat's Last Theorem states that no three positive integers a , b , and c can satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than two. It was substantially proven in 1993 and the proof completed two years later. See: Fermat last theorem. *Encyclopedia of Mathematics*. URL: http://www.encyclopediaofmath.org/index.php?title=Fermat_last_theorem&oldid=19338

CHAPTER SIX: THE EPISTEMOLOGY OF RELATIONS AND SIMILARITY II: SEEING ANALOGIES

In his work with Boolean lattices, Watanabe demonstrates that within this formal space all objects will share an identical number of similarities with all other objects. Hence, not only is everything similar to everything else, but it is as similar to the same magnitude.⁴⁴⁰ As we substitute out objects we find no matter what we plug in, given the number of predicates available does not change, the two objects are always equally as similar as any other two objects. Essentially the problem is just given the objects, which can be assigned arbitrary names as particulars, there is no non-biased way of assigning them qualities (hence a rejection by Watanabe that property-talk “carves nature at its joints”). Watanabe writes,

. . . that from a formal point of view there exists no such thing as a class of similar objects in the world, insofar as all predicates (of the same dimension) have the same importance. Conversely, if we acknowledge the empirical essence of classes of similar objects, it means that we are attaching nonuniform importance to various predicates, and that this weighting has an extralogical origin.⁴⁴¹

Given this, any two objects will have exactly the same number of classes in common if they are only distinguished by their names with one another, namely 2^{n-1} , of half the total number of classes.⁴⁴²

The Ugly Duckling Theorem need not worry us, though, because we are already supplied, via language, with a set of respects or predications that we may apply, and they provide us with at least one

⁴⁴⁰ Watanabe, Satsi. *Knowing and Guessing: A Quantitative Study of Inference and Information*. New York: Wiley, 1969.

⁴⁴¹ *Ibid.* 376.

⁴⁴² Watanabe equates the number of predicates \hat{y} with a Boolean lattice \hat{Y} of predicates similarly satisfied by two non-identical objects (objects of different types), x and y . Then suppose that there are m different rows in the object-predicate table \hat{Y} , which means there are m atoms in \hat{Y} and \hat{Y} has 2^m different members. Any predicate \hat{y} in \hat{Y} is a disjunction of a certain number of these objects. A predicate shared by x and z “is characterized by the fact that it contains the two atoms corresponding to the two different objects.” It can contain any of the remaining atoms which are $m-2$. There are 2^{m-2} different predicates shared by x and y , and this number is not determined by the choice of x and y . Therefore, any two arbitrarily chosen objects will (formally) be just as similar as any other pair of arbitrarily chosen objects. Hence, the ugly duckling is just as similar to a swan as another swan. See Watanabe (1969), 377. Watanabe also provides a proof that the same number of predicates will apply to each object, but that does not need to concern us here (378).

tool to talk about similarities. More importantly, though, and from an ontological point of view, we need not agree that a non-biased inferential basis of discrimination is needed to identify similarities.

We may accept, for example, that there are certain similarities that can only be drawn by those with certain cultural aptitudes. A somewhat imperfect example is that of an “inside joke.” For example, many years ago I shared an extremely run-down hotel in an Asian port town called the “Hotel New International.” Now we share a joke that when we encounter something shabby or dilapidated, we say it’s “just like the Hotel New International.” Here it is access to a shared, non-public understanding of the respects through which the present location or item is like the past hotel. There are perhaps better examples to be found in linguistic competencies.

A fitting example of this is the use of numeral classifiers in certain languages, particularly in East and Southeast Asia.⁴⁴³ In many of these languages, such as Malay, Mandarin and Japanese, numbers cannot generally act as adjectives to modify nouns but instead modify a classifier. These classifiers depend on resemblances, and hence there may be a classifier for round-shape objects, elongated objects, people, animals or fruits. Some are easy to grasp, like the Indo-Malay classifier *potong*, used with cylinder-shaped objects like sticks, pencils, and cigarettes. However, a speaker from a non-classifier using language, such as English, may be baffled by the “resemblances” that govern some of these classifier uses—for example, that an enormous house-sized bolder and human-sized robot would use the same classifier, *buah*, in Malay, but a small, round stone and a medium-sized, round stone would not use the same classifier (*biji* and *betul* being used respectively) while the medium-sized stone and a bar of soap would use the same classifier. While users and linguists can explain (sometimes quite ingeniously!) such similarities, they may not be evident *prima facie* to one without the linguistic and accompanying cultural competencies. However, such competencies can be acquired, and one can learn to quite naturally select the appropriate classifiers even for objects that one

⁴⁴³ English also has such classifiers. “Sheet” is an example of a classifier for thin, flat objects, as in “five sheets of paper” or “ten sheets of lead.”

has never had to count before.

Of course, even more esoteric examples can be found if we turn our attention to literature that may perhaps be from a cultural milieu with which one is unfamiliar. First, however, we should not think that analogies are always difficult to determine when from an unfamiliar culture. For example, consider the following examples from the four verse Malay *pantun* poems:

Permata jatuh di dalam rumput,

Jatuh di rumput bergilang-gilang.

Kasih umpama embun di hujung rumput,

Datang matahari niscaya hilang.⁴⁴⁴

Gems fall into the grass,

Fall and are lost in the grass

Love like dew glistening on the tips of the grass

Will surely disappear when the sun arrives.

One can make sense of how love will disappear with the morning just as the dew will dry from the sun.

However, surely it will be admitted that the following analogy is decidedly more obscure.

Buluh betung batang berduri,

Dibuat lantai gelegar pengapit;

Ibarat seperti burung kedidi,

Di mana pantai tercunggit-cunggit.⁴⁴⁵

The thorned stems of the dragon bamboo

Are made into floor joist braces

So like the sandpiper

Where the waves lap the beach.

⁴⁴⁴ Winstedt, Richard. & Wilkinson, R. J. 1914, *Pantun Melayu / collected by R.J. Wilkinson and R.O. Winstedt* Methodist Publishing House Singapore. 483. Author's English translation.

⁴⁴⁵ *Ibid*, 915. Author's English translation.

Here we are charged with finding the respect in which the sandpiper on the beach is like the bamboo made into flooring. I must admit that this one was a bit puzzling for me as well. That is because the respect in question is very contextual. It requires both understanding that the sandpiper is seen as a creature that ekes out its living in what is considered as detritus, and the thorny bamboo, *buluh betung berduri*, is seen as inferior for flooring, the *buluh betung* being preferred. In making one's floor joists out of thorny bamboo, one is likewise eking out an existence with what has been left behind by others.

Therefore, given that these already form part of our linguistic, cultural and cognitive arsenal, we simply do not find ourselves in the situation the Ugly Duckling Theorem posits in which we must produce non-arbitrary predicates *ex nihilo*. The formal world cannot supply any content, but similarity in forming analogies is necessarily a contentful concept and is a given.⁴⁴⁶ What the Ugly Duckling Theorem does show us is that on both accounts similarity is not a logical, formal feature of the world but instead a cognitive, cultural, linguistic or metaphysical feature of the world that is a given whether construed as primitive or as reducible. What is often ignored in discussions of the Ugly Duckling Theorem is Watanabe's own consideration of the theorem's implications that follows its presentation:

In reality, of course, there do exist clusters of similar objects, and there are usually good reasons for placing a new sample in one or the other of the classes that have been indicated by the given paradigm. This can be understood, in light of the Ugly Duckling Theorem, as meaning that the properties shared by similar objects are more important than those shared by nonsimilar objects.⁴⁴⁷

We should not ignore that Watanabe's proof depends on just this similarity as a practical cognitive tool; were its originator unable to recognize similarity through time and in different contexts, he would not

⁴⁴⁶ It is also my understanding that the statistician Jean-Paul Benzécri in his work on cross tabulation (work on Boolean lattices) has developed an alternative account that challenges the Ugly Duck Theorem, but I am unacquainted with the details. Rodriguez-Pereyra also addresses Watanabe's Ugly Duck Theorem but through an alternative approach: Watanabe's theorem allows for conjunctive, disjunctive, and negative properties, none of which are admitted into Rodriguez-Pereyra's sparse natural properties, so Rodriguez-Pereyra does not see Watanabe's theorem as applicable to his project (61-62).

⁴⁴⁷ Watanabe, 283.

have had the cognitive apparatus necessary to write his proof.⁴⁴⁸ We live in a world in which we recognize and weigh similarity constantly. We are already in our house.

In the previous chapter, we developed a workable theory of relations. It first suggested that our analysis of properties will not yield an analysis of relations, and further argued relations are neither universals nor tropes. Instead, it suggested that relations are part of the fundamental furniture of the universe, and strongly suggested that these relations were ontologically supervenient on complexes of objects but that object-talk alone would not give us relations-talk. Relations-talk is fundamental, because only with relationship talk can we invoke concepts, and as all take necessarily, to be meaningful, invokes concepts. The relation necessary here is the relation of similarity. Given the relationship of similarity, we have the tools to individuate and recognize relations holding between objects, and this is enough for some, at least, such as the resemblance nominalist, to even supply us with all of our property-talk. Individual relations are particulars, it seems, and we can sort relations out into types because of the similarity relations that can hold among relations just as we can sort out objects like balls, cars, and roses or even properties like orange, red, round and square, through the similarity relations holding among them.

The exact ontological nature of relations is still an open question. We should be cognizant of Quine's arguments concerning ontological relativity.⁴⁴⁹ We have certainly ruled out several theories of relations, and in fact a metaphysics that would deny relations as well as one that would have relations persist even if they were not exemplified by any complex. We have, however, invoked relations holding between actual and merely possible objects, and perhaps past and nonexistent objects (depending on our theory of time) with present existing objects. This invocation of possible worlds not

⁴⁴⁸ Watanabe makes explicit the importance of similarity in cognition. He argues that cognition and recognition depend on three main (and simultaneous) factors: (a) selection and weighting of predicates and variables [objects], (b) determination of intensity of similarities and other interobject relationships, and finally (c) placement of objects into classes. Watanabe 403.

⁴⁴⁹ W. V. Quine, "Ontological Relativity," *Journal of Philosophy* 65, no. 7 (1968): 185–212.

only allowed us to deal with problems of relations with a single exemplification, but also a larger and more successful theory of truthmaking, Truth Supervenes on Being, which, although unacceptable as a complete theory of truthmaking, provides valuable tools and insights for the metaphysician concerned with truth. What we did reach was a workable theory, however, that had the resources to explain both symmetric and asymmetric relations including the unique relation of similarity. IN our investigation of the South Asian debates, we also reached an understanding of what knowledge or similarity seems to be: it must be knowledge of a relation that holds between some complex. What are acceptable constituents of that complex remains an open question, but everything that preceded the investigation suggests the answer points towards an ontological abundance of possible relata, including relations, properties, and objects, all both actual and possible.

We can now return to the idea of the epistemic virtue of relation and similarity sensitivity that (1) allows one to better recognize relations and similarities, (2) allows one to both solve analogies and make apt analogies, and (3) is a virtue that can be cultivated. First, in proposing an epistemic virtue the emphasis is shifted from the evaluation of a single analogy or analogical argument and instead to the intellectual qualities or character of an individual, shifting the emphasis from individual acts to agents. Ernest Sosa's version of virtue epistemology is presented in his discussion of sight.

. . . there is a broader sense of “virtue,” still Greek, in which anything with a function—natural or artificial—does have virtues. The eye does, after all, have its virtue, and so does a knife. And if we include grasping the truth about one's environment among the proper ends of a human being, then the faculty of sight would seem in a broad sense of virtue in human beings; and if grasping the truth is an intellectual matter then that virtue is also in a straightforward sense an intellectual virtue.⁴⁵⁰

⁴⁵⁰ Ernest Sosa, *Knowledge in Perspective: Selected Essays in Epistemology* (Cambridge [England] ; New York: Cambridge University Press, 1991), 271.

Given that knowledge of relations is so central, particularly knowledge of similarities, then it would seem that the facility by which we come to grasp analogies or identify similarities would likewise be an intellectual virtue.

While this “faculties” or outcome approach of Sosa's is attractive, it is not the only way of conceptualizing epistemic virtues. Following Zagzebski, we might identify several approaches are possible, including “pure virtue theory” which would take the correctness of a belief or claim as purely derivative of the believer's character.⁴⁵¹ Or such theories can be “good-based” in which either the motivation to act is deemed “good” or “bad,” or perhaps certain virtues are seen as intrinsically good, and acts then morally evaluated on the basis of whether they conform to good motivations or result from intrinsically good virtues.⁴⁵² Or such theories can be “happiness-based” theories in which something is considered a virtue in that it is necessary for human flourishing, and acts are then evaluated on the basis of springing forth from such virtues.⁴⁵³ It seems, however, that no matter how we parse out our virtue-theoretic approach, given the absolutely fundamental nature of similarity and similarity recognition to cognition and knowledge or wisdom, it seems inescapable that such a facility is epistemically virtuous. Perhaps some philosophical acrobatics would be required to argue similarity detection is a good in itself, as might be demanded by “good-based” theories, but with some contortions it seems possible. It may be helpful, though, to speak of the epistemic virtue of relation and similarity detection as a faculty, and given it is productive of knowledge, lay aside just how “epistemic goodness” is defined with the unargued assurance that, however we explicate the epistemic good, we will find this faculty of similarity and relation sensitivity to be epistemically virtuous. An example might help illustrate it as a virtue conceived of as a faculty.

⁴⁵¹ Linda Trinkaus Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge* (New York, NY, USA: Cambridge University Press, 1996), 79.

⁴⁵² Zagzebski, 89.

Linda Trinkaus Zagzebski, “The Search for the Epistemic Good,” in *Moral and Epistemic Virtues*, ed. Michael Emmett Brady and Duncan H. Pritchard, *Metaphilosophy: Series in Philosophy* (Malden, MA: Blackwell, 2003), 18–19.

⁴⁵³ Zagzebski, *Virtues of the Mind*, 81.

There are somewhat exotic examples of individuals who have facilities to recognize similarities that others usually fail to pick up. Eric Falkenstein, in his discussion of David Eagleman's book, *Incognito: The Secret Lives of the Brain*, talks about the case of chicken sexers.⁴⁵⁴ Chicken sexing is the process of sorting male and female chicks (baby chickens). There are a limited number of individuals who, by looking at the chicken's vent, can determine whether it is male or female. How individuals recognize the sex of the chicken is not something that individuals can articulate.⁴⁵⁵ Some people then just naturally seem to have the epistemic capacity to tell which chickens are alike in terms of their sex, and others do not.

Falkenstein goes on to note that even though such epistemic ability perhaps cannot be articulated, it is still trainable. He describes a Japanese method of training chicken sexers.

The student would pick up a chick, examine its rear, and toss it into a bin. The master would then say 'yes' or 'no' based on his generally correct observation. After a few weeks, the student's brain was trained to masterful levels . . . we can train our unconscious thoughts via methods like the chicken sexer, primarily by emulating others who are good.⁴⁵⁶

We may not want to accept that just because we cannot articulate how we know something that we know that thing unconsciously as Falkenstein seems to imply. What is important is that even this very subtle ability at similarity detection is something trainable—that the virtue of the chicken sexer can be cultivated, and like so many other virtues, it can be cultivated by instruction from one who already has the virtue her or himself. We can call this the “Chicken Sexer Paradigm.”

In the Chicken Sexer Paradigm we also have an analogy that helps us address the Faking

⁴⁵⁴ Eric Falkenstein. “The Incredible Intuition of Professional Chicken Sexers,” Business Insider, April 26, 2012, <http://www.businessinsider.com/the-incredible-intuition-of-professional-chicken-sexers-2012-3>.

⁴⁵⁵ Falkenstein.

⁴⁵⁶ Falkenstein,

Problem that arose in Chapter One. It will be recalled that there is a seeming aporia in virtue ethics given the use of moral paradigms in the cultivation of ethical virtues. The naive presentation of virtue ethics is that one “finds a virtuous person, and then imitates them.” So, if for example, you want to be brave, you simply find a brave person and act like they do. But, in the beginning, one is not brave. One is merely imitating one with the virtue, but one does not have the virtue themselves. It is like the example of the shepard we observed in the works of Miskawayh: he does not over-indulge in food and wine, and everyone believes that is because he possesses the virtue of temperance when in actuality he just has an ulcer and over-indulgence will cause him great pain. We have a strong moral intuition that faking is itself a moral vice (authenticity being, it seems, the corresponding virtue). In the case of shepard, we may find him accepting praise as a temperate person as subject to moral approbation because he is only faking temperance. What about, however, those who are genuinely working to cultivate virtues, which they do not yet possess, through ethical imitation? Here the Chicken Sexer Paradigm can be useful.

As the aspiring chicken sexer begins, under the instruction of a master, the epistemic virtue of similarity detection in this respect is absent. The aspiring sexer lacks the epistemic virtue or faculty. Yet, in the effort, attempting to imitate something that may not be able to be discursively expressed because that virtue is desiderious, she or he is genuine. Chicken sexing is a useful example, too, since while one can fake being a chicken sexer, one is easily outed as faking since one will sort chicks incorrectly. Using the correct numeral classifiers is likewise hard to fake. That one is faking fluency will be readily apparent to anyone with such fluency. Likewise, we might have a hunch that at least some ethical virtues, like bravery, can easily be faked, but when it comes down to exercising that virtue, the individual may practically fail to manifest it (like climbing a building to save a toddler from a fire, for example).

The Chicken Sexer Paradigm shows us how to close off the problem, to to speak. Through

genuine attempts at cultivation of virtue through imitation, the imitator is transformed in character (ethical or epistemic). After a few weeks, the chicken sexer has the epistemic virtue of similarity detection in that respect. Virtues like bravery may take longer than a few weeks to cultivate, but we can distinguish the efforts of genuine imitation and faking through its aim. Those who imitate in order to be transformed are to be praised for their efforts, while those who imitate without the goal of transformation are to be condemned.

Likewise, when we consider the Malay *pantun* poems again we see that as the totality of cultural knowledge is increased, one's ability to identify the respects by which an analogy holds becomes greater. In reading more Malay literature, for example, one encounters the image of the sandpiper again and again in the context of poverty, and as such the implications of its invocation become more apparent. As one gains greater cultural competencies, one can better identify these respects. What is more, one is able to make more insightful and powerful analogies. In the first chapter, the old Graduate Record Exams (GRE) analogy test was mentioned. Individuals were able to train for this section of the test and master it. We recognize a normativity that determines correctness in the case of the GRE that strictly (“objectively”) identifies the right answer. It is usually likewise in the use of language and the application of classifiers, chicken sexing, or the innumerable other areas in our lives, personal and professional, where a sensitivity to similarity and the ability to reason with similarity comes into play. These analogies seem to have a correct answer, and perhaps while it is difficult to elaborate on the difference between a “sheet” and a “leaf” or some thin flat object, or what made one put a chick into the male box or the female box, one can still learn to properly distinguish between sheets and leaves and sort chicks by sex, and as reminded by Aristotle in chapter one, one can learn to make apt analogies.

One might be hesitant to accept this “objectively correct” notion when it comes to the interpretation of poetic analogies, but in that interpretative process, the qualities of the agent may be

just as useful in determining the aptness of an analogy or the accuracy of an interpretation. Remember that virtue epistemology shifts the focus from acts of knowing to agents of knowledge. Here, al-Shāfi‘ī is useful. We must consider the epistemic virtues of our interpreter who will not fall victim to “semantic drift” as discussed in Eco and Plato's *Sophist*. Certainly, the individual immersed in Malay culture and poetry is a more trustworthy guide to understanding the *pantun* poems than is someone who learned Malay from a language textbook bereft of exposure to culture and literature. There may be different interpretations depending on what is known and what is apparent to the individual reasoners, as al-Shāfi‘ī concludes. But what is important is we make the best interpretations given what we have at our disposal. He writes, “If they sought it out by means of interpretation, using their intellects and their knowledge of those signs, after seeking assistance from God and desiring that He aid them, then they carried out what was incumbent on them.”⁴⁵⁷ This does not mean their interpretation is necessarily correct (if we reject the “pure virtue theory” of epistemology), but certainly their character as a knower gives credence and strength to their interpretations and the aptness of their analogies.

One should again be reminded of the idea of “similar to a degree of tolerance.” This idea of “similarity to a degree of tolerance” is important, because it in part forces us to think in terms of the respect by which things are similar, and understanding that there may be a spectrum of similarity, ranging from identity (exactly similar in all respects including extrinsic negative properties if there are such things) to similar to dissimilar in that respect. It also invokes the ideas that some similarities may be given more weight than others, a fact that Watanabe points out as probably the most important aspect of cognizing similarity in the informal space in which we live out our lives. Just how a program like Pixy, whom we met in the first chapter, can recognize the same objects even when under different light conditions, so, too, can we recognize similarity even in the face of change (for example, recognizing the aging face of an old friend or mentor) or recognize the yellow basketball and blue

⁴⁵⁷ Shāfi‘ī and Lowry, *The Epistle on Legal Theory*, 212.

basketball as more similar objects than the yellow basketball and building of the same shade of yellow.⁴⁵⁸ The more sensitivity one has in terms of tolerance and the contextual space, the better one is in a position to make apt analogies or interpret analogical reasoning correctly. Augmented reality programs rely on computer learning techniques by which the light input is correctly identified as the object it is, and with repeated exposure to these objects, they are better at identifying what is being “seen.” Likewise, a student of art can identify the artist of a painting which they have never seen before by recognizing stylistic similarities, or in some cases, even detect a forgery in which another has imitated the style of another artist. The process may be little different from how the chicken sexer identifies male and female chicks or the villager learns to distinguish between gaurs, gayals and buffaloes. It is an epistemic process that can be cultivated and developed.

Another question remains, and it is in part this question I would ask you to reflect upon yourselves. For all this metaphysical work, both what is presented here, and what is assumed can be done, the question of just what similarities really exist has never been answered. Is the man building his floor out of thorny bamboo really like a sandpiper, or a human-sized robot really like a bolder-sized house, a dive bar really like the Hotel New International, or a tomato really like a firetruck? I am fairly skeptical that the question of what similarities are “real” is one that can be answered in any non-arbitrary way that does not fall back on a particular cultural or ideological perspective, or that properties can be sorted out into those that are natural and those that are not. We may be able to determine what metaphysical systems are possible given we do have the ability to distinguish the relation of similarities, and we can rule out some metaphysical theories; yet in the end, we are forced into ontological relativity—there may be more than one system that can adequately account for relations, but that does not mean all systems can. However, the question of what similarities are real is

⁴⁵⁸ In the basketballs being “more similar,” we are assuming the contextual space is types of object. But if the contextual space was color, then it would be the yellow basketball and yellow building. This is Douven and Decock's insight that similarity (and degrees of tolerance) are always relative to a contextual space.

inextricably linked with what analogies are true. And if we wish to form true, non-trivial analogies, we must keep this problem in front of our minds.

Recall again Plato's warning from *The Sophist* “If you are going to be safe, you must be especially careful about similarities, since the type you are talking about is very slippery.” Given the primacy of similarity-based reasoning in all forms of knowing, the cultural and linguistic embeddedness of analogies should give us reason for pause when we encounter universalizing discourses. Echoing Ratnakīrti, many of the most important relations in the everyday business of today's world—nationality, political affiliation, gender, race, ethnicity—are, in all likelihood, merely conceptualizations, lacking any reality beyond our own predisposition to, upon seeing similarity relations, to reify qualities or properties. We forget, echoing Greenlee, that we have innumerable other similarities that transcend these prescribed qualities or properties. Finally, echoing Watanabe, we should realize that it is ourselves who are weighting these similarities in our considerations of resemblance.

This cultural embeddedness of so many of our discourses related to similarity and difference should at least serve as a premise for an argument encouraging and growing educational pursuits that develop wider analogical competencies. We need not all become chicken sexers, but we can deepen our own appreciation of the world around us by cultivating the virtue of similarity sensitivity.

By taking seriously the question analogy, we are lifted up not only into that rarified air that is metaphysics, but are pulled down into a serious examination of our own individual horizon. It provides a consideration, too, for the value of reaching out and extending that horizon in a way that allows us to see analogies and to identify those similarity relations that we might not have before, whether it be tackling another philosophical tradition, an unfamiliar literature, or a new culture. To master Malay *pantun* poems, the intricacies of Buddhist philosophy, or Islamic jurisprudence allows us to see new similarities, to make new analogies, to identify relations that were obscured from us before, and to

increase that total field of knowledge in which we must judge the apparent truth given what we know. To see oneself in the eyes of a hungry child, to form an imaginary relation of similitude with individuals displaced by climate change, or the appreciation of the subtle analogies of a previously unfamiliar literary tradition—these are all worthy goals of one who seeks wisdom.

Taking analogy seriously shows us that even if we embrace a universalized metaphysics, it does not give us the universe.

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