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CAHILL, MICHAEL, and KEREN RICE (eds.). 2014. *Developing Orthographies for Unwritten Languages*. Publications in Language Use and Education 6. Dallas: SIL International. 265pp. ISBN: 1556713479.

Reviewed by DAVID ROBERTS, *Independent Researcher*

This is a most unusual book.[1] To find anything similar we have to go back thirty-seven years to Fishman (1977), and beyond that, fifty-one years to Smalley (1963).

Of course, there have been many important contributions in orthography studies in the meantime, including influential chapters in recent books on literacy (Baker 1997), endangered languages (Lüpke 2011) and language documentation (Grenoble & Whaley 2006; Seifart 2006), a landmark publication identifying orthography as social practice (Sebba 2007), not to mention any number of individual articles (e.g. Bird 2001; Gordon 1986; Kutsch Lojenga 1993). There have also been edited collections that collate research on existing orthographies (e.g. Brissaud et al. 2008). But the publication under review is different. It is the first time for over a generation that an edited volume draws together varied experiences of developing orthographies for *previously unwritten languages* from a worldwide perspective.

This is particularly surprising given that, in roughly the same period, new orthographies have been developed for over 1300 such languages (Cahill:10).[2] So it is not as if there has been nothing to report. But it is only in the last twenty years that writing systems have gained recognition as a valid object of scientific research (Rice & Cahill:2). In this sense, Smalley and Fishman were quite atypical for their time, and they tend to be frequently cited in the extant literature partly because there have been so few authoritative voices at all until more recently (cf. Karan:119, 121, 132; Hinton:141, 144–146).

Several of the papers in this volume were originally presented at a symposium that took place as part of the 85th annual meeting of the Linguistics Society of America held on 6-9 January 2011 in Pittsburg, Pennsylvania. The ten contributions can be roughly divided into two types: instructional chapters and case studies.

The instructional chapters are those that read like user manuals, with helpful step-by-step guidance and prioritized checklists. Snider (pp. 27–48) takes into account advances in phonology since Smalley and Fishman, who were both writing before the theories of autosegmental and lexical phonology helped to illuminate our understanding of the relationship between spoken and written language. Crucially, Snider helps the novice tease out the difference between lexical processes (that ideally should be represented orthographically) and postlexical ones (that ideally should not). It is still rare for lessons from phonological theory to be applied to written language at all, let alone as rigorously as Snider does.

Kutsch Lojenga sets up a tone system typology establishing a correlation between the number of contrastive tones, word length, the profile of the tone system (stable vs. moveable) and the functional load of lexical and grammatical tone in any given language (p. 62),

[1] I would like to thank Michael Cahill for his helpful comments on a draft of this review and Alison Cripps for proofreading it.

[2] References to the book under review are cited with page numbers only.

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then discusses the consequences of this typology for developing workable tone orthographies. In the ensuing chapter, the same author goes on to provide a checklist for establishing word boundaries (pp. 77–105), reordering the three criteria—grammatical, phonological and semantic—of her previous co-authored article on this subject (Van Dyken & Kutsch Lojenga 1993). Anyone who has had to deal with wordbreak issues when developing a new orthography is only too aware of how few guidelines exist, so this chapter is a particularly welcome development.

In contrast to these instructional chapters, there are case studies. These often begin with detailed analyses to set the (linguistic) scene, then switch track half way through, beckoning us into the messy world of human relationships, with their entrenched opinions, rivalries, conflicts and, here and there, successful collaboration. They amply demonstrate the extent to which the linguist can have a role as peacemaker and consensus builder (cf. Crystal 2000:147, 149) by providing objective, detached documentation, untangling the intricacies of hard, unwelcome facts. These chapters stand as testimonies to the capacity of their authors to take the time to understand the other's point of view, to exercise compromise, and to go with the flow. The editors make an early statement about the paramount importance of non-linguistic issues in orthography development by deliberately forefronting the chapter on this subject (pp. 9–25). The multiple case studies echo and reinforce this perspective.

Naturally, in a book of this kind, there is some overlap between these two basic types of contribution, and this is particularly the case with Adams' chapter on orthography decision-making in mainland SE Asia (pp. 231–249). Adams presents three case studies, vividly portraying the sociolinguistic complexities of each. He notes that orthographies are often subject to 'religious branding' (cf. Dewees 1977:125; Roberts 2008:50–52). He examines the challenges faced when developing orthographies for cross-border languages (pp. 246–248). He readily admits that expatriate involvement can often have unintended consequences (p. 248) especially when money is involved (pp. 237–238, 242). Then, between these case studies he weaves nine key observations as procedural warnings, which have something in common with the 'how-to' approach of the more instructional chapters.

The geographical scope of the volume is impressive. Between them, the first four authors—Cahill, Snider, Kutsch Lojenga and Karan—bring data from no less than fourteen sub-Saharan African countries. Cahill and Karan also take in Guatemala (p. 14), Mexico (p. 14), North Africa (p. 15), Latin America (p. 18), Uzbekistan (p. 19), Papua New Guinea (p. 22), Canada (pp. 108, 110), Lebanon (p. 124), Mexico (p. 125), Malaysia (p. 125), Thailand (p. 128) and the Philippines (p. 129). Three further chapters focus on the Americas: USA (Hinton, pp. 147–161; Munro, pp. 181–187), Mexico (Munro, pp. 174–180) and Peru (Wise, pp. 191–209). Then the last two chapters take us to Bhutan (Hyslop, pp. 211–230), and various mainland SE Asian contexts, some of which are unspecified—because the author wants the freedom to speak candidly (Adams, p. 236)—but including China, Myanmar and Thailand (pp. 243–246).

The book also draws inspiration from orthographies with a longer history. Snider illustrates the differences between lexical and post-lexical processes with examples of Polish vowel raising (pp. 31–33, 38), English trisyllabic laxing (pp. 34–36) and nasal assimilation (p. 36), and German syllable final devoicing (p. 41). Karan evokes the Dutch (pp. 114, 119), German (pp. 120–121), French (p. 121), English (p. 121) experiences of orthography reform in her plea to slow down the process of standardization. Hinton takes up the same theme with reference to Korean (pp. 142, 145). The Latin American case studies are all played out against the ubiquitous backdrop of Spanish (Hinton, p. 145; Munro, pp. 174–180; Wise, pp. 191–209), while those from North America demonstrate the overwhelming

force of English in that context (Hinton, pp. 148–165). There are several similar instances of the impact of a majority language with a long literary tradition—Russian (Cahill, p. 19), Arabic (Karan, p. 125), Thai (Karan, pp. 128–129) and Tibetan (Hyslop, pp. 211–230)—on neighboring minority languages.

I mentioned successful collaboration. An outstanding example of this is Wise's chapter on Yanesha' orthography development in Peru. First, Wise effortlessly summarizes the salient phonological facts—notably the phonemic status of palatalized stops and nasals (pp. 193–199). Many linguists would stop at this point, considering their job done. But Wise goes on to give a first-hand account of Yanesha' orthography development in the 1950s, a tribute to her own exemplary long-term commitment to the language community (pp. 199–202). Then she brings us up to date by documenting the process that led to the recent decision to write palatalization with the grapheme <h> (pp. 202–208). This process included five preliminary meetings, a decision-making alphabet congress, and three workshops to revise the pedagogical materials. Stakeholder involvement was nothing if not inclusive: a Yanesha' university professor, several active and retired bilingual teachers, the secretary of a socio-political organization, delegates from the relevant Ministry of Education department, a group of Yanesha' university students, with the door left ajar for any other interested Yanesha' speakers who wished to attend. Wise herself was present as linguistic advisor but had no decision-making authority. The chapter is a model of one linguist's successful involvement in language development, and a model of how to document such involvement.

By far the majority of the new orthographies that have emerged in the post-war period use Roman script. This can pose linguistic challenges, since a script that was developed to represent European languages may well prove unsuitable for languages with vastly dissimilar structures. It can also raise socio-political concerns in settings where Roman script is either associated with Western domination, or is simply out of the picture because there is an existing indigenous alternative. Both linguistic and socio-political factors are present in Hyslop's fascinating account of Kurtöp orthography development in Bhutan (pp. 211–230). This chapter, along with various briefer references to non-Roman script elsewhere—Thai (Karan, pp. 128–129), Korean (Hinton, pp. 142, 145), Cherokee (Munro, pp. 171–172), Thai, Khmer, Lao and Burmese (Adams, pp. 234–235)—are in line with a growing interest in the questions raised by script choice (e.g. Unseth 2005, 2008; Warren-Rothlin 2014).

The Kurtöp orthography adapts the cursive (Joyi) manifestation of the 'Ucen abugida, an indigenous script already used to write Dzongkha, the national language of Bhutan, and Classical Tibetan, or Chöke, the Buddhist liturgical language. One of the most intriguing problems was how to represent complex onsets (pp. 225–226). Although these are readily available as graphic clusters in the 1400 year-old Tibetan script, in contemporary Dzongkha they are pronounced as single phonemes with high tone on the following vowel, so a transparent representation in Kurtöp would invite transfer problems. Instead, the decision makers opted to use 'half' consonants in vertical alignments, a solution already used historically to represent other combinations in Sanskrit. Hyslop deftly leads us through this linguistic maze in such a way that the reader can easily grasp the issues with no background in Classical Tibetan.

Hyslop is one of two authors who explicitly discuss phonological depth (p. 215, 228; Snider, p. 27), a subject that is currently receiving much attention elsewhere (e.g. Benuck & Peverly 2004; Ellis et al. 2004; Ziegler et al. 2010). More intentional discussion of orthographic depth, with reference to the literature, would be welcome in future publications of this kind. Of course, it is implicitly present every time under-representation is

evoked, and examples of this abound throughout the book. Perhaps the most extreme example is Tlacolula Valley Zapotec (Munro, pp. 178–180). In the minimalist orthography developed for this language, the single grapheme <a> maps onto no less than 22 possible vowel phonations (plain, postglottalized, breathy and creaky, plus various combinations of these in single syllable nuclei). In addition, several fortis and lenis consonant contrasts that have a low functional load are also under-represented. It will not go unnoticed that this off-the-scale deep orthography has seen greater community acceptance than its shallower, more transparent alternative.

Hinton's account of Yurok, an Algic language of California, is similar, where pristine phonological analysis finds itself in head-on collision with the practices of heritage language learners who, strongly influenced by English, want to replicate its spelling conventions and avoid special characters (pp. 156–159). The result, unsurprisingly, is under-representation and inconsistency, but greater social acceptance. This scenario finds echoes in many parts of Africa, with some groups promoting the non-use of special characters (e.g. Nikiéma et al. 2005) to facilitate Smalley's (1963) fifth maxim, ease of reproduction (Hinton, p. 144). But we should note that, as so often happens in orthography matters, the reverse may also occur. In northern Togo, for example, special characters meet with little local resistance. Nawdm and Lama both contain phonemes that are absent in French, the official language. In both cases, expatriate linguists had advised employing unused characters from the Roman alphabet. But the two local committees rejected this advice in favor of special characters. In Nawdm, they chose <ɦ> to represent the phonemic glottal stop /ʔ/ instead of the proposed <q>, which people associated with the phoneme /k/ because of their exposure to French. In Lama, they chose the graphemes < i, e, ɨ, ə> to represent their IPA equivalents, replacing the graphemes <ii, ee, i, e> respectively, which had been used for an entire generation of literacy classes but had proved unpopular, since Lama also has contrastive vowel length.

Four authors mention the need for orthography testing (Cahill, pp. 19–20; Snider, pp. 40, 44; Kutsch Lojenga, pp. 71, 75, Karan, pp. 111–113), and this echoes similar pleas elsewhere in the literature (Bernard et al. 2002:346; Bird 1999:86, 107–8; Gudschinsky 1970:24; Mfonyam 1989:535). However, more often than not, field linguists fight shy of testing, and the little that exists tends to be unpublished and informal. There are notable exceptions (e.g. Bird 1999; Hasselbring 1996; Roberts & Walter 2012; Vissering 1987), but in general the field remains poorly served. This is not entirely surprising. Most linguists have their work cut out just documenting and describing a language, and are loath to branch out into another sub-discipline. Most have never received any training in how to design, implement and interpret a quantitative classroom experiment. No textbook exists on the subject, though a recent work paper (Karan 2013) is an encouraging sign in the right direction. One way out of this impasse is for linguists to enter into cross-disciplinary collaboration with those who are already experts in this domain: i.e. cognitive psychologists exploring the reading process. Such researchers regularly set up quantitative classroom experiments in their quest to better understand issues such as phonemic segmentation (e.g. Boyer & Ehri 2011), word recognition (e.g. Smolka & Eviatar 2006) and visual crowding (e.g. Pelli et al. 2007). What's more, many of them are open to collaborating with linguists on marginalized minority languages in order to counter the current unhelpful predominance of English in their own domain (Share 2008).

Orthography development is an academic domain characterized by a wealth of grey literature—informal sources such as technical reports, minutes and unpublished manuscript

that have limited distribution and are not easy to access. Researchers typically find themselves consulting the dusty, incomplete archives of a local language committee, or hunting in rickety cupboards for out-of-print pedagogical materials long since abandoned by a government literacy program. Much of the research in this present volume is the result of successfully locating and exploiting such grey literature, thus making knowledge accessible that would otherwise have remained hidden from view.

For endangered languages, as Adams reminds us, "probably the most sought-after outcome which leads to long term language health is widespread literacy"(p. 232). Developing an orthography and encouraging mother-tongue literacy is one of the most productive, dynamic, natural and obvious ways of documenting and conserving a threatened language. It is potentially a powerful process of multiplication as several mother-tongue speakers simultaneously turn their hands to creative writing and publishing, as opposed to the weaker process of addition represented by a solitary linguist eliciting primary data.

In this age of research by Google-search, one might have wished the book to have more explicit chapter titles in some cases (e.g. "Orthography wars," "Standardization, what's the hurry?"). It is also a pity that the reproduction of the figures on p. 155 and p. 172 is blurred, at least in my copy. But let's not be picky. All in all, this book represents a major contribution to a domain in which documentation of any kind is scarce. It should appear on the reading list of any orthography development training courses and be available in the libraries of any institutions that run courses on writing systems research. No field linguists should engage in orthography development for marginalized languages without accessing a copy and familiarizing themselves with the contents. This book is a tangible sign that orthographers are caught up in the exciting new momentum of writing systems research. For this reason, we can be optimistic that there will not be another thirty-seven year gap before similar volumes are published.

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David Roberts
rbrdvd@gmail.com