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Methodological Tools for Linguistic Description and Typology.

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edited by
Aimée Lahaussais and Marine Vuillermet



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Cover design: 'Fields, tools, linguists', designed by Elizabeth Lahaussais using photos provided by the contributors. From left to right: 1. Portachuelo Bajo, Pando, Bolivia; 2. Legvëgmen, Motalava island, Vanuatu; 3. Kukunoti village, Nuba Mountains, Sudan. 4. Aplow, Motalava island, Vanuatu. 5. Hiw island, Vanuatu. 6. Kukunoti village, Nuba Mountains, Sudan. 7. Jolap, Gaua island, Vanuatu. 8. Temuo, Vanikoro island, Solomons. 9. Yugemëne, Hiw island, Vanuatu. 10. Portachuelo Bajo, Pando, Bolivia. 11. Lovoko, Vanikoro island, Solomons. 12. Kathmandu, Nepal. 13. Kukunoti village, Nuba Mountains, Sudan. 14. Kukunoti village, Nuba Mountains, Sudan.

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We wish to thank Isabelle Bril and Stéphane Robert, respectively the most recent director and the founding director, of the CNRS Fédération Typologie et Universaux Linguistiques (TUL) for funding the TUL Questionnaires project. This special publication is one of the outcomes of the project they were instrumental in funding and supporting.

We are very grateful to Alexandre François for his help in formatting this volume.

Introduction: Methodological tools for linguistic description and typology

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This thematic issue is an outcome of a collaborative multi-year research project on Questionnaires for linguistic description and typology.¹ For the purposes of the project, we use Questionnaire (with a capital Q) as a general term to cover any kind of methodological tool designed to elicit linguistic expressions, including word lists, visual stimuli, descriptive templates, field manuals, and the like. This volume thus brings together articles about written questionnaires and visual stimuli, which due to their epistemological differences are rarely considered together, and treats them as sub-types of the large category of methodological tools that help linguists carry out descriptive and comparative work.

Most descriptive linguists of the Western tradition are likely familiar with at least some methodological tools of this type: the historically significant (despite cultural and linguistic biases) Swadesh wordlists, which served as catalysts for research in areal semantics and lexical typology; or early exemplars of visual stimuli, namely the Pear Story (Chafe 1980) and the Frog story (Mayer 1969), and the various studies based on them (see for example Berman & Slobin (1994); or the Eurotyp project's poster-child questionnaires that are Dahl's (2000) TAM questionnaires (described as 'scenario' questionnaires in Mosel (2014: 80)).

Questionnaires and other tools have been making headway as research products worthy of serious study, at an ever-increasing pace since Himmelmann (1998), thanks to articles such as Hellwig (2006), Lüpke (2009), Majid (2012), books like Bochnak &

¹ Sponsored by the now-defunct CNRS Research Federation on Typology and Linguistic Universals.

Matthewson (2015) and Dollinger (2015), and the growing genre of field methods manuals, from forerunners Samarin (1967) and Bouquiaux & Thomas (1976) to the more recent Vaux & Cooper (2003), Crowley (2007), Bowern (2008), Chelliah & de Reuse (2011), Aikhenvald (2015), Meakins, Green & Turpin (2018), the genre developing quickly enough to warrant a ‘guide to the guides’ (Mosel 2014).

Of the seven contributions collected here, six were originally presented at a November 2017 international workshop on Questionnaires held in Paris.²

Birgit Hellwig’s article, ‘Linguistic diversity, language documentation and psycholinguistics: The role of stimuli’, highlights points of intersection between the fields of psycholinguistics and language documentation, and suggests that a tighter collaboration, focusing on the strengths of both, can result in empirical data that is more representative of actual language diversity. There is an urgency to this task, given the state of endangerment of many languages, and members of both fields will need to adapt their methods, but the pay-off will be data that can be used for language comparison and could result in significant advances in our understanding of human language.

One of the goals of our collaborative research program on Questionnaires was the production of a centralized open archive for Questionnaires,³ a project which is described in the article by **Aimée Lahaussois**, ‘The TULQuest linguistic questionnaire archive’. The archive aims, through its structure, to reflect the dynamic nature of Questionnaires, which are regularly adapted to new situations by users, and to place methodological tools in the historical and epistemic context in which they were developed. In this sense, they are not only tools for synchronic use, but testaments to changes in linguistic theory and methodology over time.

The contribution by **Denis Paperno** and **Daria Ryzhova**, ‘Automatic construction of lexical typological Questionnaires’, beautifully illustrates how well-endowed languages like Russian can contribute to the systematic investigation of the semantic scope of adjectives in other languages, using a computational approach. Their method is transferable to any language for which there are electronic dictionaries and corpora, and represents a significant contribution to work on lexical typology.

Jozina Vander Klok & **Tom Connors**, in their article on ‘Using questionnaires as a tool for comparative linguistic field research: Two case studies on Javanese’, present two Questionnaires developed for their research on Javanese dialectology. Based on their experiences using these methodological tools, they propose a list of best practices that apply to dialectological work, and which are equally relevant for any type of field research.

In a contribution by **Marine Vuillermet** and **Anetta Kopecka** entitled ‘*Trajectoire*: A methodological tool for eliciting Path of motion’, the authors present a tool they

² Alexandre François’s contribution had been presented during an earlier project work session.

³ <http://tulquest.huma-num.fr/>

developed, in collaboration with a diverse group of descriptive linguists, to study the expression of Path. The article describes the theoretical background which influenced the design of their stimulus set, but also discusses the practical considerations that were taking into account in order to make the toolkit adaptable in a large number of different field settings. They also provide data collected using the stimulus set, including data in related semantic domains that they had not anticipated, and end with a discussion of issues of dissemination of tools such as theirs.

In their article 'Video elicitation of negative directives in Alaskan Dene languages: Reflections on methodology', **Olga Lovick** and **Siri Tuttle** discuss the development of a series of videos designed to elicit negative directives, which were rare in their narrative and conversational corpora. After presenting the domain of negative directives in Koyukon and Upper Tanana languages, they describe the videos, which depict the violation of cultural taboos for the groups they study, and the very different types of data which were generated when their consultants viewed and commented on the videos. Their methodology is an excellent example of a targeted tool which results in the collection of data very different from that anticipated but equally rich and telling, and covering numerous underrepresented categories in their languages.

In the final article in our collection, 'A proposal for conversational questionnaires', **Alexandre François** describes a situational elicitation handbook which he successfully used to collect semi-spontaneous conversational data for closely-related Oceanic languages. He provides many insightful hints about how to adapt his conversational questionnaires, and details how through the seemingly everyday conversation samples he is able to collect extensive lexical and grammatical data. He shows how these dialogues can be used to rapidly assimilate vocabulary and grammatical constructions in a new language, enabling culturally appropriate interaction with community members. An added benefit of his method is illustrated through the comparable corpus he is able to assemble from the collected data.

Our volume intends, through these contributions, to remind fellow linguists of the wide range of existing Questionnaires, ensuring that the colossal individual or collective enterprise of creating these tools is acknowledged and can benefit other researchers. Even in cases where a specific Questionnaire is not adapted to the investigation at hand with regard to the domain it was designed to study, some part of it (the protocol, the medium, the visual style) may still inspire others, and be adapted to new and different needs. Each contribution herein suggests valuable guidelines in the creation of new Questionnaires, discussing their approaches at various levels (design, test, readjustment/development, diffusion, etc). Particularly relevant to fieldworkers, this concentration of best practices may help avoid some of the faux-pas that investigators have faced with particularly vulnerable peoples or communities.

References

- Aikhenvald, Alexandra. 2015. *The art of grammar: a practical guide*. Oxford: Oxford University Press.
- Berman, Ruth Aronson & Slobin, Dan Isaac (eds.). 1994. *Relating Events in Narrative: A Crosslinguistic Developmental Study*. Hillsdale, NJ: Erlbaum.
- Bochnak, M. Ryan & Lisa Matthewson (eds.). 2015. *Methodologies in Semantic Fieldwork*. New York: Oxford University Press USA.
- Bouquiaux, Luc & Thomas, Jacqueline M.C. (eds.). 1976. *Enquête et description des langues à tradition orale. L'enquête de terrain et l'analyse grammaticale*. Vol. 1. Paris: SELAF.
- Bowern, Claire. 2008. *Linguistic Fieldwork: A Practical Guide*. New York: Palgrave MacMillan.
- Chafe, Wallace L. (ed.). 1980. *The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex.
- Chelliah, Shobhanna & de Reuse, Willem. 2011. *Handbook of descriptive linguistic fieldwork*. Dordrecht: Springer.
- Crowley, Terry. 2007. *Field Linguistics, A Beginner's Guide*. Oxford: Oxford University Press.
- Dahl, Östen. 2000. The future time reference questionnaire. In Dahl, Östen (ed.), *Tense and aspect in the languages of Europe*. (Empirical Approaches to Language Typology 20–6), 789–799. Berlin & New York: Mouton de Gruyter.
- Dollinger, Stefan. 2015. *The Written Questionnaire in Social Dialectology: History, theory, practice* (IMPACT: Studies in Language and Society 40). Amsterdam/Philadelphia: John Benjamins.
- Hellwig, Birgit. 2006. Field semantics and grammar-writing: Stimuli-based techniques and the study of locative verbs. In Ameka, Felix & Dench, Alan & Evans, Nicholas (eds.), *Catching Language: the standing challenge of grammar writing* (Trends in Linguistics 167), 321–358. Berlin & New York: Mouton de Gruyter.
- Himmelman, Nikolaus P. 1998. Documentary and descriptive linguistics. *Linguistics* 36(1). 161–195.
- Lüpke, Friederike. 2009. Data collection methods for field-based language documentation. In Peter Austin (ed.), *Language Documentation and Description*, vol. 6, 53–100. London: SOAS.
- Majid, Asifa. 2012. A guide to stimulus-based elicitation for semantic categories. In Thieberger, Nicholas (ed.), *The Oxford Handbook of Linguistic Fieldwork* (Oxford Handbooks in Linguistics), 54–71. Oxford: Oxford University Press.
- Mayer, Mercer. 1969. *Frog, Where Are You*. New York: Dial Books for Young Readers.
- Meakins, Felicity & Green, Jennifer & Turpin, Myfany. 2018. *Understanding Linguistic Fieldwork* (Understanding Language). London and New York: Routledge.
- Mosel, Ulrike. 2012. Morphosyntactic analysis in the field: a guide to the guides. In Thieberger, Nicholas (ed.), *The Oxford Handbook of Linguistic Fieldwork* (Oxford Handbooks in Linguistics), 72–89. Oxford: Oxford University Press.
- Samarin, William J. 1967. *Field Linguistics: A Guide to Linguistic Field Work*. New York: Holt, Rinehart and Winston.
- Vaux, Bert & Cooper, Justin. 2003. *Introduction to Linguistic Field Methods*. 2nd printing. Munich: Lincom Europa.

Linguistic diversity, language documentation and psycholinguistics: The role of stimuli

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Our psycholinguistic theories tend to be based on empirical data from a biased sample of well-described languages, not doing justice to the enormous linguistic diversity in the world. As Evans and Levinson (2009: 447) put it, a major challenge of our discipline is to harness this linguistic diversity and “to show how the child’s mind can learn and the adult’s mind can use, with approximately equal ease, any one of this vast range of alternative systems.” This paper explores some of the possibilities and limits of how language documentation and description can contribute to taking up this challenge, focusing on the role of both natural data and stimuli in this enterprise.

Keywords: linguistic diversity; language documentation; psycholinguistics; data types; stimuli

1. Setting the scene: Linguistic diversity

There are different estimates pertaining to the linguistic diversity in this world, but we can probably assume that there are around 7000 languages spoken today (e.g., Simons and Fennig 2017 give a number of 7099). These languages are unequally distributed across the world, with the largest diversity found in the tropical regions of America, Africa, Asia and the Pacific. At the same time, most of the world’s population speaks one of the larger languages. The statistics provided by the Ethnologue allow us to estimate that the 10 largest languages are spoken by around half of the world’s population, and the 50 largest languages by around 96% of the population. Conversely, the remaining 7000 or so languages are spoken by the remaining 4% of the population, with sometimes very small speaker bases, often in remote and inaccessible regions, and being spoken and acquired in many

different socio-cultural contexts (Evans 2010; Nettle and Romaine 2000; see also Ammon 2015).

Language documentation and description is centrally interested in these remaining 7000 languages, and numerous documentary and/or descriptive projects testify to an enormous diversity on all levels – a diversity that goes well beyond superficial differences (see Evans 2010 for an impressive overview of the attested diversity; and see the references therein for further reading). This diversity poses a challenge to linguistic theory, which is captured in the following quote from Evans and Levinson (2009: 447):

“to show how the child’s mind can learn and the adult’s mind can use, with approximately equal ease, any one of this vast range of alternative systems. [...] [This] calls for a diversified and strategic harnessing of linguistic diversity as the independent variable in studying language acquisition and language processing [...]: Can different systems be acquired by the same learning strategies, are learning rates really equivalent, and are some types of structure in fact easier to use?”

On one level, their idea is not controversial: in order to substantiate any claims about linguistic and cognitive universals, the diversity of this world needs to be taken into account. Yet, our generalizations about human language and cognition tend to be based on a biased sample of languages from the so-called WEIRD populations (i.e., Western, Educated, Industrialized, Rich, Democratic; a term coined by Henrich et al. 2010), bearing in mind that the extent of the bias is different in different subdisciplines (outlined below). Problematic aspects of this bias are explored in typological research (e.g., Cysouw 2002; 2011; Dahl 1990; Haspelmath 2001; Henrich et al. 2010; Lüpke 2010a), anthropological research (e.g., Schieffelin and Ochs 1986 and, more generally, within the language socialization paradigm) and cross-cultural psycholinguistic research (e.g., Keller 2007; Lieven and Stoll 2009). This research shows that, on the one hand, the languages of our sample are too similar to each other: many of them are related, they share typological features and they are spoken and acquired in similar socio-cultural environments. On the other hand, our sample is probably unusual from a world-wide perspective: it exhibits sometimes unusual typological features, and it is spoken and acquired in unusual socio-cultural environments. More generally, our sample does not reflect the diversity attested in the world, and this has obvious consequences for the validity of our models and theories (for some illustrations of the relevance of cross-linguistic data for theory-building, see, e.g., Slobin and Bowerman 2007 (for language acquisition), or Norcliffe et al. 2015 (for language processing)).

Typology is the subdiscipline that has gone furthest to redress the bias in its databases and to ensure that typological theory is built on a representative sample of the world’s languages. There are extensive discussions on issues of language sampling, informed by the overall goal of avoiding genetic and/or areal biases, sometimes also cultural biases (for

overviews of the discussion, see, e.g., Bakker 2010; Perkins 2001). In the end, the typological sample still depends on the availability of data and descriptions (especially grammars), but a long tradition of typologically-oriented descriptive research has ensured that we now have substantial knowledge of the structures of many languages around the world. The accumulated knowledge can be accessed through numerous grammars and typological publications (too numerous to cite), but also through on-line typological databases such as WALS (Dryer and Haspelmath 2013), AUTOTYP (Nichols and Bickel 2009) or the Universals Archive (Plank and Filimonova 2000). Yet, even within typology, there remain sampling issues: while genetic and areal biases are carefully addressed, biases introduced by data types do not receive the same attention. As stated by Himmelmann (2000: 10),

“[t]he data used for well-known and well-documented national languages generally represent the normative patterns characteristic of the written standard, which is, at least in part, a product of centuries of grammar writing and formal education. These patterns are juxtaposed to potentially idiolectal patterns produced by a speaker of a small isolated speech community on the occasion of a linguistic interview.”

That is, we tend to typologize over different data sources, thus potentially skewing the results: we do know that elicited data differs from spontaneous data (for discussions within the language documentation paradigm, see, e.g., Foley 2003; Hellwig 2010; Himmelmann 1998; 2006; 2012; Lehmann 2001; 2004; Lüpke 2009; 2010b; Seifart 2008; outside of the language documentation discussion, see, e.g., the classic contributions by Labov 1975 or Schütze 1996), and we also know that there are systematic differences between oral and literate data types (see, e.g., Chafe 1982; 1985; Maas 2010). We can take word order typologies as an example, and more specifically, (non-) configurationality and noun phrase discontinuity. Here, Australian languages are often presented as having unlimited freedom of word order, but when studying word order variation in natural discourse, it emerges that discontinuity is subject to specific information-structural constraints, and hence not unlimited (McGregor 2009; Schütze-Berndt and Simard 2012; see also Louagie and Verstraete 2016). For Russian, Miller and Weinart (1998: 183) compare discontinuous noun phrases in spoken and written varieties, and observe that

“linguist X working on spoken Russian [...] might well conclude that the language is non-configurational; linguist Y working on written Russian [...] would certainly conclude that Russian was configurational. The consequences for typology are clear [...].”

That is, although typology is the subdiscipline that has gone furthest in controlling for biases, even here, there are remaining sampling issues.

When we move away from typology to psycholinguistics, the limitations of our databases become strikingly obvious. As testified by a volume of literature too large to

cite, the guiding principle of psycholinguistic research is to discover what is universal and what is language/culture-specific in the acquisition and the processing of human language. There is thus no doubt that linguistic diversity is of central concern to psycholinguistic research. But the actual practice falls short of these intentions. Anand et al. (2011: 3) have conducted a survey of languages researched within psycholinguistics, evaluating data from psycholinguistic journals and conferences, and from existing corpora, and the results are devastating. In terms of experimental data, only 57 languages were represented at all, of which 10 languages accounted for 85% of research (with English alone accounting for just over 30%, and German being a distant second with just over 10% of the research). And in terms of corpus data, five languages accounted for 85% of data sources (again, with English in top position accounting for over 50%; and, this time, the Chinese varieties taken together being a distant second with over 10%).

There are differences across the psycholinguistic subdisciplines, but the overall picture remains the same. In fact, language acquisition is the only subdiscipline that can look back on a tradition of cross-linguistic research,¹ thanks to a number of large-scale initiatives such as Slobin's (1985-1997) classic series *The crosslinguistic study of language acquisition*, or the CHILDES project (MacWhinney 2000). And even here, we have to conclude that

“we know something about the acquisition of approximately 70 to 80 languages (i.e., approximately 1% of all the languages spoken today). This 1% of languages also includes languages for which only one acquisition study of a single feature exists [...]” (Lieven and Stoll 2009: 144).

For all other subdisciplines, the percentage of languages represented for any given topic drops to well below 1%. For example, Norcliffe et al. (2015: 1009) estimate that the empirical foundations for the study of sentence production comprises 0.6% of the world's languages (if counted generously), with our generalizations based on “primarily Germanic and Romance, to a lesser extent Finnish, Hebrew, Chinese, Korean, and Japanese.” Conversely, there is hardly any psycholinguistic research on the large number of small, often endangered, languages spoken in remote regions of this world – i.e., on those languages that are of central interest to language documentation.

Giving the above guiding principle, psycholinguistics thus has a central interest in extending its research on acquisition, production and comprehension to a more representative sample of the world's languages (see especially Norcliffe et al. 2015 for a

¹ Note that research on child language is not only conducted within psycholinguistics, but also within anthropology, especially within the very influential paradigm of language socialization (see, e.g., Schieffelin and Ochs 1986). While this paper focuses on the relationship between language documentation and psycholinguistics, it should be kept in mind that this does not exclude collaboration with other disciplines. In particular, research on child language necessarily includes collaboration with anthropology.

brief but excellent overview of the history of cross-linguistic psycholinguistic research). But such an extension is faced with numerous methodological and ethical challenges – challenges that are familiar to any language documentation project. They range from simple issues such as working in a difficult climate or with limited access to power supplies, to more complex issues such as negotiating cultural expectations or establishing a collaborative research environment. Over the last decades, language documentation has developed considerable expertise in addressing these and other challenges, and it is thus well placed to collaborate with psycholinguistics in conducting psycholinguistic research (from all subdisciplines) under fieldwork conditions. Such collaboration does indeed exist among individual researchers, but not on a larger scale, and discussions about the methodological and ethical implications have only just begun. As such, this situation is very different from, e.g., the collaboration between language documentation and anthropology. Close ties already exist between the two disciplines, and many documentation projects include anthropological components and/or collaboration between linguists and anthropologists. Both disciplines value qualitative data types and the use of minimally invasive and culturally-sensitive data collection techniques, and both have an interest in the interplay of language and culture. This is in contrast to psycholinguistics, which – as a whole – values quantitative data types and relies on more invasive data collection techniques appropriate to a Western academic setting.

And this brings me to the purpose of this paper: to explore potential points of intersection between language documentation and psycholinguistics, with a focus on the role of semi-structured methods of data collection, such as the use of stimuli.² This paper does not adopt the view that psycholinguistic methods should necessarily be transferred 1-on-1 to fieldwork context, i.e., it does not see the role of language documentation as helping psycholinguistics to overcome the many ‘obstacles’ in the field. Instead it takes the view that any collaboration between language documentation and psycholinguistics has to be placed on an equal footing, ensuring that the standards of *both* disciplines are maintained.³ The starting point for any such endeavor can only be at the points of intersection,

² Note that the psycholinguistic literature more commonly uses the terms ‘semi-structured’, ‘semi-experimental’ or ‘broad-spectrum’ methods instead of ‘stimuli-based’ methods (as is more common in the language documentation literature), thus distinguishing them from experimental methods (e.g., Eisenbeiß 2010). In this paper, I mostly use the term ‘stimuli-based’.

³ For example, I consider it unrealistic that we will be able to extend any of the more invasive psycholinguistic methods (such as neurolinguistic techniques involving, e.g., EEG or fMRI) to fieldwork contexts in the near future, at least not on a larger scale. More generally, I have doubts about all experimental methods that severely constrain the participants’ responses (that, e.g., measure reaction times; or that involve tasks that are perceived as particularly unnatural by participants, e.g., tasks involving novel words). I allow (of course!) for the possibility that they can be made to work in specific contexts, but I doubt that they will make it into the general toolkit of a language documentation project

of mutual interest. Notwithstanding the hope that we may be able to push the boundaries of what is possible further in the future.

Two disclaimers are in order. First, the goal of this paper is to explore points of intersection between language documentation and psycholinguistics, with a focus on methodologies and irrespective of the psycholinguistic subdiscipline or the specific research question. And second, the intersection between the two disciplines is explored with a view to facilitating psycholinguistic research in the field, discussing the possibilities (and limits). The paper does not pursue the converse perspective, i.e., it does not address issues of how psycholinguistic research can be of benefit to language documentation. Instead, it refers the reader to the (admittedly) small emerging literature on this topic. For example, Eisenbeiß (2006) makes a very good case for the benefits of such a cooperation to our descriptive and documentary efforts as well as to a community's maintenance and revitalization efforts. Similarly, the Child Language Research and Revitalization Working Group (2017) highlights the relevance of child language documentation to maintenance and revitalization efforts. And Hellwig and Jung (submitted) discuss how the study of child-directed speech can enhance our understanding of the adult language.

The remainder of this paper is structured as follows: section 2 focuses on two central challenges faced by psycholinguistics under fieldwork conditions (challenges that arise from our limited knowledge of the language and the population; and challenges that arise from cultural expectations and norms); section 3 pursues possibilities of addressing the challenges (focusing on the role of stimuli and the role of natural data); and section 4 concludes this paper.

2. Challenges

The different psycholinguistic subdisciplines have well-established research procedures and best practice models that are often not easily reconcilable with the realities of fieldwork-based research. For example, describing the challenges to language acquisition research in under-documented languages, Kelly et al. (2015: 287) conclude that “[t]hese conditions often make it difficult to follow the best-practice approaches to data collection which are commonly assumed in lab-based FLA [First Language Acquisition; BH] research.” And with respect to psycholinguistic research more generally, Whalen and McDonough (2015: 3) weigh the issues and summarize that “[s]till, specialized studies

– which is the central concern of this paper. I might be too pessimistic, but the actual practice does speak for itself: the number of such studies under fieldwork conditions is negligible.

are perhaps best done in larger, less endangered language communities, especially given that many larger, unendangered language communities are also understudied.”

The above two quotes paint a fairly pessimistic picture of the possibilities. Indeed, there is a multitude of challenges to any fieldwork-based research, including psycholinguistic research in the field. Not least of all, of course, practical and logistic challenges, which often come to mind first – including factors such as variable levels of literacy and technological skills, missing infrastructure (e.g., access to electricity, workspaces or internet facilities), or a challenging environment and socio-economy (e.g., tropical rains, the inaccessibility of a region or the high mobility of a population). The exact nature of these practical and logistic challenges differs, but it is likely that any fieldwork-based research project will face them to varying degrees, including projects with a psycholinguistic component. For example, a community’s limited experience with literacy and technology is not only a challenge for the more obvious reasons (e.g., when planning to conduct a reading experiment), but impinges on the entire process of data collection and processing: when negotiating informed consent and research ethics; when training research assistants to help construct and present the test items for an experiment, to record the data, or to transcribe and translate the results; or when disseminating the results to the community. More seriously, our Western research methods with their reliance on the written medium and sophisticated technological setups contribute to creating an unfamiliar, stressful, research environment (see below for a discussion on cultural expectations and societal norms). While such challenges should not be underestimated, this paper focuses on another type of challenge: challenges that arise from the nature of the research procedure itself.

Psycholinguistics values quantitative data types, with an exceptionally strong expertise in experimental research and a focus on controlled experiments. In addition, there are also more semi-structured experimental techniques (that are similar to stimuli-based research in the field) as well as the construction of spontaneous speech corpora (especially in the context of language acquisition research) – but the focus is again on their quantitative analysis. Given this focus, methodological concerns centrally revolve around the careful construction of experiments and corpora, with issues covering the selection of test items (to exclude potential confounds that might, e.g., arise from frequency effects or from semantic or morphological relationships between test items), the selection of participants (to ensure a representative sample that allows for making generalizations about the overall population) or the setup of a controlled environment that excludes (or at least minimizes) unwanted distractions (such as bystanders interfering in an experiment) and/or regulates the recording intervals (as is important for a longitudinal study) (see, e.g., Blom and Unsworth 2010; Eisenbeiß 2006; 2010). From a fieldwork perspective, these requirements on data collection constitute a tall order. In particular, there are

two issues that emerge, pertaining on the one hand to our knowledge about the language and the population, and on the other hand, to cultural expectations and norms.

Starting with our knowledge about the language and the population, psycholinguistic research presupposes a good knowledge of both. In a Western context, any project investigating aspects of language acquisition or processing will have access to a comprehensive knowledge about the structure, lexicon and usage of the language (including not only reference grammars and dictionaries, but especially databases that give detailed information on frequencies, on familiarities, and/or on formal and semantic relationships between words). And they will have access to information on the composition and size of the overall population, and to supplementary information on the selected participants (covering basic socio-linguistic and economic data, but increasingly also very detailed information on their performances in working memory tests or IQ tests, or, when working with children, information on measures of linguistic development such as mean length of utterance, or the results from the MacArthur-Bates Communicative Development Inventory). All this is, of course, information that does not exist for many languages of the world, nor can it be easily generated. With respect to our knowledge of the grammatical structure, Valentine (2001: xxxi) nicely outlines the magnitude of the challenge, remarking that

“[a] language is a natural object with a beauty and a capacity to inspire awe on the order of Niagara Falls or Lake Superior, if we take the time to appreciate it. Writing a reference grammar provides the enjoyment of thousands of hours of careful scrutiny, though at the same time one realizes acutely the truth of Michael Krauss’s statement that a hundred linguists working for a hundred years could never get to the bottom of a single language.”

Such reservations not only hold for our knowledge of the grammar, but for our knowledge of most aspects of the language and the population. In fieldwork-based projects, there is a clear limit to the amount and kind of knowledge that is available or that can realistically become available, and even large-scale collaborative documentation projects will not be able to reach the level and standard taken for granted in the better-documented languages.

In this context, Kelly and Nordlinger (2014: 189) report on an interesting and revealing comment by an anonymous reviewer, who “asks why anyone would begin a documentation project [on child language; BH] without having a good knowledge of the target language.” From a Western psycholinguistic perspective, this is an obvious and legitimate question – and yet it misses a crucial point: to wait until such information may eventually become available will continue to exclude the majority of languages from psycholinguistic research, and will perpetuate the bias of our empirical databases indefinitely. I would thus prefer to turn the question around and ask instead: what kind of

psycholinguistic research is realistically possible under fieldwork conditions? Which existing research procedures and best practice models can we adapt so that they are transferable to fieldwork contexts without compromising the quality and standards of either field? And this is a second point of importance: it is not only a question of adapting psycholinguistic methods such that they can be made to work under fieldwork conditions, but of reconciling two very different research fields – guarding against compromising the standards of psycholinguistics, but also against compromising the standards of language documentation. And this takes the discussion to the second issue raised above, that of cultural expectations and norms.

Psycholinguistic methods rely on specific cultural expectations and societal norms that are not necessarily present outside of Western contexts (or, more specifically, outside of Western academic contexts). As Anand et al. (2011: 2) phrase it,

“[a] more serious challenge, not often recognized, is that the experimental method is heavily culturally circumscribed. It relies upon specific societal norms: the importance of test-taking, willingness to maintain exclusive focus on unnatural tasks, and an abstract social contract with the experimenter. Additionally, most experimental tasks are solitary, and require responses to linguistic material presented out of context, often by a machine.”

The authors here deal with experimental methods in a more narrow sense, but, to a lesser degree, this discussion also applies to stimuli-based methods.

For example, child language research often involves stimulated events. A typical activity is to provide toys and games (which are designed in such a way that they generate the linguistic expressions under investigation) to the caregiver (often the mother) and the child, asking them to play together (Eisenbeiß 2009; 2010). In Western contexts, this procedure works well: the caregiver and the child maintain joint attention on the objects and they very naturally engage in linguistic activities over them, such as the caregiver labeling objects for the child and in turn eliciting object names from the child. But this kind of engagement is not characteristic of many other societies, and – where it does occur – it is not necessarily accompanied by the same linguistic events (see especially Keller 2007; Mastin and Vogt 2016; Vogt et al. 2015). Mastin and Vogt (2016: 259), e.g., observe for rural Mozambique that

“rural infants’ Coordinated-JA [joint attention; BH] interactions are often silent, but when speech does occur there is little naming of objects, and when caregivers do name objects, they often do not use gestures to provide deictic information that could help acquire the appropriate association. So, the more time infants spend in Coordinated-JA, the fewer opportunities they have to learn from the utterances addressed to them, since infant-directed utterances rarely contain object labels.”

From a psycholinguistic perspective, this finding has important consequences for our theories of learning: in communities like the rural Mozambiquan community mentioned

above, language learning does not only (and maybe not even primarily) take place in contexts of coordinated joint attention; instead, contexts such as overheard speech and observation were found to play important roles. From a fieldwork perspective, this has consequences for our data collection methods. Using the established psycholinguistic methods creates situations that are unusual and even potentially stressful to the participants: e.g., the play context outlined above is unusual in many parts of the world. This procedure thus has ethical implications, which we discuss in a separate publication (Hellwig and Eisenbeiß submitted). And it has implications on the ecological validity of the collected data. Within language documentation and description, there are some discussions on the validity of stimuli data, e.g., it is reported that Frog Story narratives trigger more referential expressions than are found in traditional narratives (Berez-Kroeker 2018; Foley 2003). This does not necessarily render the stimuli data invalid, but it strongly speaks for complementing experimental and stimuli-based methods with other data types, as the validity of the data can only be evaluated against a corpus of natural data. Another ensuing issue is the question of comparability: can we compare such data to data collected with the same methods in a Western context – a context where such procedures do reflect natural language use to a greater extent? As for Frog Story research, the stimulus was originally used by Bamberg (1987) to investigate the development of narrative skills in German-speaking children, inspiring many follow-up studies of this kind (see especially Berman and Slobin 1994). This research capitalizes on a Western practice of story-telling where a caregiver and a child interact over a picture book, thus ensuring that the experimental setup has some familiarity to the child. But, interestingly, even within the Western world there are reports that “studies conducted in experimental and semi-experimental settings [...] systematically underestimate the potential narrative capabilities of young children” (Nicolopoulou 1996: 387). Using this stimulus in a non-Western context where children are socialized into very different story-telling practices would only exacerbate this issue (see also Hellwig to appear-a; to appear-b).

Finally, in addition to issues of evaluating their ecological validity, these methods pose a more basic challenge: they have a tendency to objectify participants, assigning them the passive role of respondents to stimulus material. As such, these methods challenge a fundamental tenet of documentary research: documentary research explicitly strives towards collaborative research models that recognize the community’s right to control research on their language; to make decisions on project design, research goals and methodologies; and to assume an active role as participants during data collection. This shift in perspective lies at the heart of language documentation as a discipline, having been foreshadowed by Hale et al. (1992), and elaborated further over the last two decades (see, e.g., Cameron et al. 1992; 1993; Dobrin 2005; Grinevald 2003; Hill 2002; Leonard & Haynes 2010; Mosel 2006; Rice 2011; Smith 1999; Stebbins 2012; Wilkins 2000; Yamada 2007). For

example, just looking at the titles of the contributions in Newman and Ratliff (2001), we can immediately see the value placed on collaboration: ‘The give and take of fieldwork’ (McLaughlin and Sall 2001), ‘Who shapes the record: the speaker and the linguist’ (Mithun 2001), or ‘Learning as one goes’ (Rice 2001).

Given this shift in perspective, it is not surprising that fieldwork-based studies favor the use of interactive and dialogic methodologies that allow participants some freedom in shaping the project and influencing its direction. Psycholinguistic studies, by contrast, favor methodologies that maintain control over the task and the responses of the participants. As such, the favored methodologies of the two disciplines cannot easily be reconciled. This is also the case when it comes to their research questions: psycholinguistic research questions of any kind are not likely to be the top priority of a community, which is concerned about, e.g., prestigious genres of their language becoming endangered, preferring to invest scarce resources into their documentation and preservation. As such, communities may be happy to participate in lexical elicitation that documents semantic domains considered important or prestigious, but they may be reluctant when it comes to experiments that are designed to investigate the organization of the mental lexicon. Furthermore, at the more naturalistic end of the continuum, they may be happy to record elders narrating the history of their community or a poet’s oral performance, but they may have their doubts about the value of the more mundane aspects of daily life, such as a group of adults chatting (or even gossiping) or the language of children. At the same time, there are equally good reasons for communities to invest in psycholinguistic research, as such research is likely to be of long-term benefit, e.g., in the Western world, psycholinguistic research was and is an important (albeit not the only) prerequisite for the development of materials for teaching or for speech therapy (Eisenbeiß 2006); also, research into language acquisition and socialization is set to inform language maintenance and revitalization efforts, as well as educational policies (Child Language Research and Revitalization Working Group 2017). There is thus no reason why a psycholinguistic project cannot be in the interest of the community and hence no reason not to design and shape it jointly with the community – but this, in turn, requires a commitment to taking the community members’ view into account, of thinking through the dangers and benefits of this research together, of weighing up scarce resources and setting priorities, and of jointly determining and developing study design and methods. And while such considerations are an integral part of all language documentation research, their importance may be underestimated within psycholinguistics, and may even conflict with psycholinguistic standards that strive towards maintaining objectivity and independence of research, and hence not involving participants in research design.

3. Taking up the challenge

Given the many challenges, it is not surprising that collaboration between language documentation and psycholinguistics is still in its infancy. There do not (yet) exist standards and best practice models, and we do not (yet) have a good overview over all the potential issues that may arise. It is thus by no means clear to what extent the requirements and standards of the two fields can be reconciled. Assuming that such a reconciliation is desirable (see especially the arguments in Eisenbeiß 2006), there are two promising points of intersection between the two disciplines: stimuli-based research, and corpora of natural language use. The potential of both are explored in this section.

3.1 The role of stimuli

Psycholinguistic research revolves to a large extent around sophisticated experimental methods, which are, indeed, not easily transferable to fieldwork conditions, since their design and implementation presuppose considerable prior knowledge about the language and the speaker population, as well as a certain overall familiarity and understanding of the participants with the research procedure. That is, controlled experiments in a narrow sense are likely to continue to be of limited applicability within language documentation – potentially becoming more feasible in the long run, as documentation and description progress. However, experiments come in different types, including the semi-structured technique of using stimuli that allow some control over the variables, but still strive to allow participants freedom in shaping their responses and to keep the situation as natural as possible.

The use of stimuli has long been a mainstay of linguistic fieldwork. When looking at some of our earliest fieldwork guides (e.g., Bouquiaux & Thomas 1976; Samarin 1967), we see that they include very detailed information, not only on the topics to cover in elicitation, but also – and especially – very detailed suggestions about which questions to ask, frequently including picture stimuli as visual aids. Their content and form was inspired by the linguistic and typological knowledge of the time, and the goal of using them was descriptive: to ensure a better description of the language under investigation. Their focus was not on generating comparable data, i.e., data that can be compared across languages (with the purpose of developing typologies) and/or across speakers (with the purpose of ensuring representativeness of the data and/or to detect variation). Following on from these early fieldwork guides, our newer fieldwork guides usually no longer include such detailed stimuli (e.g., Bower 2006; Chelliah & de Reuse 2011; Crowley 2007; Everett & Sakel 2012; Newman & Ratliff 2001). On the one hand, their inclusion

is no longer possible: the number of available stimuli has increased tremendously, and the guides instead point to external sites where fieldworkers can find stimuli and questionnaires on specific topics and/or get inspiration for developing their own (including guides to the available guides, e.g., Majid 2012; Mosel 2012). Some important sites are, e.g., the *L&C Field Manuals and Stimulus Materials* site at the Max Planck Institute for Psycholinguistics (<http://fieldmanuals.mpi.nl/>) or the *TulQuest* site of the French Federation of Linguistic Typology and Universals (<http://tulquest.huma-num.fr/>). A more detailed discussion of such stimuli will follow further below. And on the other hand, we observe a shift in focus towards increasingly sophisticated metadiscussions on the advantages and disadvantages of various methods, on the kinds of data each method generates or does not generate, and what kinds of challenges they pose for creation, implementation and analysis.

For language documentation, Himmelmann (1998: 185-186) introduced the by-now commonly accepted basic types of communicative events: observed,⁴ staged and elicited. They differ in their naturalness, i.e., in the degree to which the event would have taken place even without researchers asking for it. And they differ in the amount of control researchers exercise over it, shaping and manipulating its structure and content. Stimuli fall under the heading of staged communicative events, i.e., events that are enacted for the purpose of the recording session: some are closer to the ‘natural’ end in that they delimit the context but then allow speakers to talk freely within the given context (e.g., asking a speaker to narrate a story based on a picture book or film stimulus); and others are closer to the ‘controlled’ end in that they control for the parameters of interest and require speakers to respond to specific questions (e.g., asking a speaker to look at pictures and answer specific questions about each picture).

There is an overall consensus that documentation should attend to all three types of events, as the data generated by them complement each other. That is, staged communicative events (including stimuli) cannot replace observed and elicited events, but they do occupy an important place within language documentation, as the many contributions to this special issue testify: they report on a good number of case studies, detailing both the challenges and the rewards that arise in stimuli-based research.

The contributors to this special issue repeatedly mention one central challenge: to design good stimuli presupposes considerable knowledge about the domain of interest (e.g., topological relations) and the possible variation within it (e.g., relations of support, attachment, containment etc.), i.e., it presupposes knowledge about the so-called ‘etic grid’ that allows us to delimit the domain in a sensible way and to select the relevant

⁴ He also includes ‘natural communicative events’, which, however, cannot be documented, as the known presence of an outside observer (a researcher and/or a recording device) may impact on the self-awareness of the speakers, thus influencing their linguistic behavior.

variables to be manipulated. As such, stimuli are time-consuming to create and require a pre-testing phase. Crucially, though, their use does not depend on a *comprehensive* prior knowledge of the given domain in the research language. That is, stimuli can be used in an exploratory way to develop a first understanding of the categorization patterns in a given domain and of the linguistic means of encoding them. Further challenges are raised by questions about the cultural appropriateness of the data collection method itself (see especially Du Bois 1980 for a discussion of issues that can arise when implementing stimuli-based research, here when showing the Pear Story stimulus). This question in turn impacts the roles of researchers and research participants and their respective agency. Similar issues also arise in elicitation, and documentation projects have gained considerable experience in striking a balance between data collection methods that invest more or less agency in participants, i.e., balancing events where participants assume a more controlling role (e.g., the recording of an observed communicative event) with those where the researcher assumes a more controlling role (e.g., an elicitation session on a grammatical topic). Stimuli-based research and cooperative research can thus be reconciled, and documentation outlets such as *Language Documentation and Conservation* regularly publish discussions of such research (see, e.g., the recent special publication edited by Barth and Evans 2017, based on a stimulus introduced in San Roque et al. 2012). And a final challenge concerns the question of the validity of the generated data (see, e.g., Foley 2003, who compares narratives generated by the Frog Story stimulus with traditional narratives) – again, this is a danger that arises from all elicitation, and that is circumvented by creating a varied corpus that is *not* restricted to stimulus data.

These challenges notwithstanding, there are good reasons for using stimuli, as discussed by the contributors to this special issue. Similar to elicitation, stimuli-based research allows for control (i.e., to delimit the field and to systematically manipulate the parameters of interest). But different from elicitation, it takes steps to minimize the linguistic self-awareness of the speaker by providing a context (in the form of the stimulus, often in visual form). That is, speakers give their response based on a specific context (which is known to both the speaker and the researcher), and they do not have to imagine a context. This procedure in turn reduces the risk of misunderstanding inherent to all forms of elicitation. At the same time, this focus on responding to a given context distracts attention away from the linguistic structure, thereby eliciting more spontaneous responses and less prescriptive language use. Stimuli furthermore generate a large number of relevant expressions – i.e., they generate enough data points to investigate even low frequency phenomena. And they usually allow room for follow-up discussions with speakers, including discussions about expressions that cannot be used in a given context, thus producing negative evidence.

Importantly, stimuli-based research provides a partial solution to the issue of generalizability raised in section 1. Language documentation has come a long way towards ensuring a more diversified database, and the field as a whole is moving away from the practice of working with a handful of speakers and towards that of including a broader variety of participants. As a result, variation is starting to become an integral part of our documentations and descriptions, while at the same time introducing checks and balances that ensure that our findings do not just represent the idiolect of a single speaker (see, e.g., a recent special publication edited by Hildebrandt et al. 2017). But there is a limit to what single linguists, and even teams working collaboratively, can achieve: even with the best of efforts, we will not be able to construct a corpus that is carefully balanced for the different variables, and hence generalizability will always remain an issue. This is where stimuli-based research is set to play a major role: at least for specific domains, it is possible to ensure generalizability – to collect comparable data from a larger sample of the population, detecting variation within a language, and, conversely, allowing for more robust generalizations of language-specific patterns. At the same time, results can be compared across dialects and languages, forming the basis for statements about cross-linguistic patterns.

Much of contemporary stimuli-based research takes place at the intersection of language and cognition: studying different semantic domains and their categorization patterns, and exploring the possibilities and limits of variation across languages. By now, there is an impressive number of cross-linguistic typologies that result from such stimuli-based research, employing stimuli of many different types, e.g., questionnaires that serve as the basis for the real-life re-enactment of scenarios (as in the Demonstrative Questionnaire by Wilkins 1999; see Levinson et al. 2018 for a typology based on this stimulus); pictures, photos or short video clips that serve as the basis for a response (as in the Topological Relations Picture Series by Bowerman and Pederson 1993; see, e.g., Levinson and Meira 2003); picture books or video clips that depict stories to be narrated (as in the Frog Story by Mayer 1969; see, e.g., Berman and Slobin 1994); or interactive games that require two or more speakers to interact in order to construct a story (as in the Family Problems Picture Task by Carrol et al. 2009; see San Roque et al. 2012) or negotiate a problem (as in the Men and Tree stimulus by Levinson et al. 1992; see Pederson et al. 1996); as well as stimuli that are designed to explore non-linguistic cognition (as in the Animals in a Row stimulus; see again Pederson et al. 1996).

The small sample of existing stimuli mentioned above was selected for two reasons: partly because each one exemplifies a different type of stimulus, and partly because they are well-known and successful examples of stimuli-based research – successful on the level of language documentation and description (i.e., increasing the quality of our documentation and descriptions of individual languages), and successful on the level of theory-building (i.e., giving us a clearer understanding about universality and variation in their

respective domains, and thereby having an impact on our theories of human language and human cognition). That is, they exemplify the major reasons we go through the considerable effort of designing good stimuli: advancing our understanding of individual languages and informing our understanding of human language and cognition. Specifically, they enable us to bring under-described and under-documented languages to speak to our linguistic and psycholinguistic theories: they generate comparable data that form the basis for our typologies, they show that a pattern in a specific under-documented language is not ‘exotic’ or ‘idiosyncratic’ but representative of a type – patterns that need to be accounted for by our theories.

In all these typologies, the comparability of the data is ensured through the use of the same stimulus material and the same setup of the procedure. That is, the data is specifically collected for the typology. This procedure, in turn, has consequences for the language sample – it presupposes the availability and collaboration of a fieldworking linguist, making it almost impossible to avoid areal or genetic biases. The result is often

“an opportunistic sample, which has arisen from the chance that the authors have had to work closely together, and thus produce closely matched descriptions of the languages in which they are expert” (Levinson and Wilkins 2006: 6).

In the above studies, the opportunistic sampling method has succeeded in the sense that it has unearthed patterns that are different from those attested in the better-documented Western languages. That is, even on the basis of an opportunistic sample including under-documented languages, chances are that previously unknown patterns will emerge. In the long run, though, the question of sampling will become more important, as it will have consequences for the generalizability of the results (see e.g. Stoll and Bickel 2013 for a proposal in the context of researching language acquisition). Levinson’s and Wilkins’ quote above highlights a further issue: the role of the language expert, and their extensive overall knowledge of a language and culture, which are indispensable prerequisites for collecting, processing and interpreting the stimuli data. And this, in turn, means that stimuli-based research can never be done in isolation, without access to other data types – and the most important such resource is a corpus of natural data.

3.2. The role of corpora

While psycholinguistics has a strong focus on experimental research, natural data constitutes another important resource, thereby giving us a second point of intersection between psycholinguistics and language documentation. The principles underlying the construction of corpora suitable for psycholinguistic research are not necessarily the same as those underlying the construction of language documentation corpora – usually the

former place more constraints on the selection of participants, sampling intervals and amounts of data (for discussions of such issues in the construction of child language corpora, see e.g. Behrens 2008; Demuth 1996; 2008; Eisenbeiß 2006; 2010; Tomasello and Stahl 2004). Such constraints originate from the need to be able to quantitatively analyze corpora, and they thus often play only a secondary role in language documentation with its focus on qualitative analyses. But while these considerations do not play a primary role in constructing language documentation corpora, they do tie in with discussions and more recent developments in our field. On the one hand, language documentation has always been concerned with the question of ensuring that the corpus constitutes “a comprehensive and representative sample of communicative events as natural as possible” (Himmelman 1998: 168). And on the other hand, recent years have seen a move towards cross-corpus typologies based on quantitative analyses across a number of language documentation corpora (e.g., Haig and Schnell 2016; Seifart et al. 2018).

That is, their different methods and goals notwithstanding, both disciplines share an interest in natural data and in principles of corpus construction. The main obstacle here is likely to be a practical issue. From a psycholinguistic perspective, language documentation corpora remain small and often do not reach the masses of data necessary for psycholinguistic research. For example, language acquisition research crucially depends on the availability of longitudinal studies, where a number of children (the more, the better) are recorded regularly (e.g. weekly) over the course of a year or more – resulting in large amounts of data that need to be transcribed, translated and annotated, going well beyond the capabilities of an under-resourced documentation project on an under-documented language. Nevertheless, the mutual interest in natural data provides common ground for discussions and cooperation, and recent years have seen a number of longitudinal child language corpora emerging within the language documentation context (such as on the Tibeto-Burman language Chintang within a DoBeS-funded project, see, e.g., Stoll and Bickel 2013b; Stoll et al. 2012; or on the East Papuan language Qaqet, see Hellwig to appear-a).

Within language documentation, corpora assume a central role because they allow our documentation to be a “lasting, multipurpose record of a language” (Himmelman 2006: 1): corpora are not only useful for a specific narrow research question at a specific time by a specific researcher, but they can be used to explore and pursue multiple different questions by multiple different users. In the same way, they play a crucial role in providing supplementary information needed for more controlled research, both experimental and stimuli-based. In section 2, I argued that a major obstacle to psycholinguistic research on under-documented languages is limited knowledge about the language; corpora of natural language can give us access to at least some of this knowledge. For example, when re-

searching child language, it is necessary to know what the children are actually hearing from the adults and children around them – and this information is unlikely to be found in grammatical descriptions, or in adult-to-adult language. A corpus that focuses on children in their natural interactions, however, is going to contain this kind of information as a matter of course.⁵ And this information, in turn, often sheds light on the adult language itself. For example, Hellwig and Jung (submitted) show how some properties of child-directed speech allow us insights into the metalinguistic knowledge of adult speakers, thereby enriching our overall understanding of the language. Similarly, Demuth and Ellis (2009: 95-96) reflect on the crucial role of Demuth’s Sesotho child corpus in their research (one of the first longitudinal corpora of a non-Western language), concluding that “[t]he existence of larger acquisition corpora [...] has also made it possible to examine more closely the input that children hear. [...] This process also often leads to a better understanding of the structure of the target language.” This comment is especially interesting in light of the fact that Bantu languages (such as Sesotho) are fairly well understood – and yet the efforts invested into constructing an acquisition corpus has paid off and resulted in a better understanding of the adult language, both of its usage and its grammatical structures. More generally, corpora of natural data can be used for accessing different kinds of supplementary information on, e.g., frequencies of words and constructions, distribution of lexical items or common collocations, or they allow for the calculation of measures of linguistic development such as the mean length of utterance of a child (see also Eisenbeiß 2010: 13-14). As always, what kind of information can be extracted depends on the kind of corpus. At the risk of stating the obvious, a corpus designed for studying language acquisition may give us information on frequencies in child-directed speech or may allow us to calculate the mean length of utterance for a child, while a corpus designed for studying the adult language is unlikely to give us this kind of information. Instead, it would give us information on, e.g., frequencies in adult-directed speech (which may or may not be similar to frequencies in child-directed speech).

All of this supplementary information is an important prerequisite for being able to conduct more targeted investigations, both experimental and stimuli-based: patterns emerging in the natural data allow for the development of hypotheses that motivate specific targeted studies, they feed into the design of the study (e.g., enabling the selection of appropriate test or stimulus items) and they make possible the interpretation of the results (e.g., assessing the naturalness of the results). As discussed in section 3.1, experimental and stimuli-based studies differ in the amount of control the researcher exercises

⁵ There are considerable ethical challenges involved when conducting psycholinguistic research under fieldwork conditions, and especially any research involving children is set to raise issues such as, e.g., questions of legal authorization. This paper does not focus on such challenges (but see Hellwig and Eisenbeiß submitted, for a discussion).

over the responses of the participants (see also Himmelmann 1998): the more controlled the study, the more important it becomes to control for the numerous confounds – and many of our language documentation corpora will remain too small to give us insights into all such confounds. But for less controlled studies, such as stimuli-based research, they do provide enough information. And conversely, stimuli allow us to explore smaller domains in more in-depth ways, e.g., by investigating the semantic relationships that hold in a specific lexical fields – with the results feeding back into corpus construction and enriching the annotation of our corpora.

4. Conclusion

The challenges for conducting psycholinguistic research in the field seem forbidding and insurmountable, and the practice shows that we still have a long way to go to reach the goal of “a diversified and strategic harnessing of linguistic diversity as the independent variable in studying language acquisition and language processing” (Evans and Levinson 2009: 447). Such a goal can only be reached through cooperation between language documentation and psycholinguistics. And while there are no established best practice models for such a cooperation, there are initiatives that explore ways of adapting psycholinguistic methods to the realities of fieldwork outside a lab environment – without compromising the standards of either discipline, and by playing to the strengths of both.

This paper argues for seeking the collaboration over the two data types that are valued by both disciplines: natural data and stimuli-based (or semi-experimental) data. These two data types complement each other, and we cannot rely on one to the exclusion of the other. This is, of course, a well-known fact within the language documentation paradigm, but it extends equally to psycholinguistic research in the field: given our limited knowledge of many languages, psycholinguistic research cannot start with experimental methods, but has to incrementally build up the relevant knowledge. This need not, and indeed should not, be a sequential process: if we wait until our knowledge of a language has reached a level comparable to that of the better-described languages, the inclusion of linguistic diversity into our psycholinguistic theories would forever remain a very distant prospect. Instead, we should strive to build up this knowledge in parallel, and, as argued in section 3, both corpus construction and stimuli-based research will help us in this endeavor.

It is true that, from a psycholinguistic perspective, our corpora of natural data often remain small, and they may not provide sufficient information for constructing controlled experiments – but many of them will provide sufficient information for more open-ended, semi-structured, research methods, i.e., stimuli-based methods. And despite

the practical challenges, there are examples of extending language documentation corpora to meet psycholinguistic standards, through cooperation between researchers from language documentation and from psycholinguistics (e.g., the Chintang or Qaqet child language corpora mentioned in section 3.2). The patterns found in natural corpora then feed into the development of hypotheses, the design of our stimuli and the interpretation of their results. And the stimuli, in turn, have a significant role to play, as they address the issue of generalizability raised in section 1: the stimulus is kept constant and controlled, i.e., the same stimulus can be run with multiple speakers and in multiple languages, thus generating data that can be compared across speakers (capturing variation in a single language, thus going beyond describing idiolects of single speakers) and across languages (capturing variation across languages, thus showing that a language does not just represent an exotic or outlier pattern, but represents a larger type).

When we design our stimuli, we should keep this goal in mind: our collective aim as a discipline should be to develop stimuli that can be used in comparing languages, address the issue of generalizability, and provide a framework that helps individual researchers to collect data that feed into our typologies. This will enable us to harness the linguistic diversity of this world to advance our understanding of human language and cognition – and not leave the field to the larger and better-described Western languages.

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References

- Ammon, Ulrich. 2015. *Die Stellung der deutschen Sprache in der Welt*. Berlin: Mouton de Gruyter.
- Anand, Pranav & Chung, Sandra & Wagers, Matthew. 2011. Widening the net: Challenges for gathering linguistic data in the digital age. *NSF SBE 2020. Rebuilding the mosaic: Future research in the social, behavioral and economic sciences at the National Science Foundation in the next decade*.

- (http://www.nsf.gov/sbc/sbc_2020/submission_detail.cfm?upld_id=121; accessed 2017-09-04.)
- Bakker, Dik. 2010. Language sampling. In Song, Jae Jung (ed.), *The Oxford handbook of linguistic typology*, 100–127. Oxford: Oxford University Press.
- Bamberg, Michael G. W. 1987. *The acquisition of narratives: Learning to use language*. Berlin: Mouton de Gruyter.
- Barth, Danielle & Evans, Nicholas (eds.). 2017. The Social Cognition Parallax Interview Corpus (SCOPIC). *Language Documentation and Conservation*, special publication 12.
- Behrens, Heike (ed.). 2008. *Corpora in language acquisition research: History, methods, perspectives*. Amsterdam: Benjamins.
- Berez, Andrea L. 2003. Speakers' attention to path, location and narrative tasks: Beyond frog stories in Ahtna. Manuscript.
- Berez-Kroeker, Andrea L. 2018. Directional reference in discourse and narrative: Comparing indigenous and non-indigenous genres in Ahtna. In Holton, Gary & Thornton, Tom (eds.), *Language, landscape and toponymy in Alaska and beyond*. Fairbanks: Alaska Native Language Center.
- Berman, Ruth A. & Slobin, Dan I. 1994. *Relating events in narrative: A cross-linguistic developmental study*. Mahwah, NJ: Lawrence Erlbaum.
- Blom, Elma & Unsworth, Sharon (eds.). 2010. *Experimental methods in language acquisition research*. Amsterdam: Benjamins.
- Bouquiaux, Luc & Thomas, Jacqueline M. C. 1976. *Enquête et description des langues à tradition orale*. Paris: Selaf.
- Bowerman, Melissa & Pederson, Eric. 1992. Topological relations picture series. In Levinson, Stephen C. (ed.), *Space stimuli kit 1.2*, 40–51. Nijmegen: Max Planck Institute for Psycholinguistics.
- Bowern, Claire. 2006. *Linguistic fieldwork. A practical guide*. New York: Palgrave MacMillan.
- Cameron, Deborah & Frazer, Elizabeth & Harvey, Penelope & Rampton, Ben & Richardson, Kay. 1992. *Researching language: Issues of power and method*. London: Routledge.
- Cameron, Deborah & Frazer, Elizabeth & Harvey, Penelope & Rampton, Ben & Richardson, Kay. 1993. Ethics, advocacy and empowerment: Issues of method in researching language. *Language and Communication* 13(2). 81–94.
- Carroll, Alice & Evans, Nicholas & Hoenigman, Darja & San Roque, Lila. 2009. *The family problems picture task. Designed for use by the Social Cognition and Language Project*. A collaboration of the Australian National University, Griffith University, University of Melbourne and the Max Planck Institute for Psycholinguistics.
- Chafe, Wallace L. 1982. Integration and involvement in speaking, writing and oral literature. In Tannen, Deborah (ed.), *Spoken and written language: Exploring orality and literacy*, 35–53. Norwood, NJ: Ablex.
- Chafe, Wallace L. 1985. Linguistic differences produced by differences between speaking and writing. In Olson, David R. & Torrance, Nancy & Hildyard, Angela (eds.), *Literacy, language and learning: The nature and consequences of reading and writing*, 105–123. Cambridge: Cambridge University Press.
- Chelliah, Shobana L. & de Reuse, Willem J. 2011. *Handbook of descriptive linguistic fieldwork*. Dordrecht: Springer.
- Child Language Research and Revitalization Working Group. 2017. *Language documentation, revitalization, and reclamation: Supporting young learners and their communities*. Waltham, MA: EDC.
(<https://www.edc.org/sites/default/files/uploads/RouvierWhitePaperFinal.pdf>; acc. 2018-06-20.)

- Crowley, Terry. 2007. *Field linguistics: A beginner's guide*. (Edited and prepared for publication by Nicholas Thieberger.) Oxford: Oxford University Press.
- Cysouw, Michael. 2002. Interpreting typological clusters. *Linguistic Typology* 6. 49–93.
- Cysouw, Michael. 2011. Quantitative explorations of the worldwide distribution of rare characteristics, or: The exceptionality of northwestern European languages. In Simon, Horst J. & Wiese, Heike (eds.), *Expecting the unexpected: Exceptions in grammar*, 411–432. Berlin: Mouton de Gruyter.
- Dahl, Östen. 1990. Standard Average European as an exotic language. In Bechert, Johannes & Bernini, Giuliano & Buridant, Claude (eds.), *Towards a typology of European languages*, 3–8. Berlin: Mouton de Gruyter.
- Demuth, Katherine. 1996. Collecting spontaneous production data. In McDaniel, Dana & McKee, Cecile & Smith Cairns, Helen (eds.), *Methods of assessing children's syntax*, 3–22. Cambridge, MA: The MIT Press.
- Demuth, Katherine. 2008. Exploiting corpora for language acquisition research. In Behrens, Heike (ed.), *Corpora in language acquisition research: Finding structure in data*, 199–205. Amsterdam: Benjamins.
- Demuth, Katherine & Ellis, David. 2009. Revisiting the acquisition of Sesotho noun class prefixes. In Lieven, Elena & Guo, Jiansheng & Budwig, Nancy & Ervin-Tripp, Susan & Nakamura, Keiko & Özçalikan, Seyda (eds.), *Crosslinguistic approaches to the psychology of language*, 93–104. New York: Psychology Press.
- Dobrin, Lise. 2005. When our values conflict with theirs: Linguists and community empowerment in Melanesia. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 3, 42–52. London: SOAS.
- Dryer, Matthew S. & Haspelmath, Martin (eds.) 2013. *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. Available online at <http://wals.info>.
- Du Bois, John W. 1980. Introduction: The search for a cultural niche: Showing the pear film in a Mayan community. In Chafe, Wallace L. (ed.), *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production*, 1–7. Norwood, NJ: ALEX Publishing Corporation.
- Eisenbeiß, Sonja. 2006. Documenting child language. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 3, 106–140. London: SOAS.
- Eisenbeiß, Sonja. 2009. Contrast is the name of the game: Contrast-based semi-structured elicitation techniques for studies on children's language acquisition. *Essex Research Reports in Linguistics* 57(7). 1–27.
- Eisenbeiß, Sonja. 2010. Production Methods. In Blom, Elma & Unsworth, Sharon (eds.), *Experimental methods in language acquisition research*, 11–34. Amsterdam: Benjamins.
- Evans, Nicholas. 2010. *Dying words: Endangered languages and what they have to tell us*. Chichester: Wiley-Blackwell.
- Evans, Nicholas & Levinson, Stephen C. 2009. The myth of language universals: Language diversity and its importance for cognitive science. *Behavioral and Brain Sciences* 32. 429–492.
- Everett, Daniel L. & Sakel, Jeanette. 2012. *Linguistic field work: A student guide*. Cambridge: Cambridge University Press.
- Foley, William A. 2003. Genre, register and language documentation in literate and preliterate communities. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 1, 85–98. London: SOAS.

- Grinevald, Colette. 2003. Speakers and documentation of endangered languages. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 1, 52–72. London: SOAS.
- Haig, Geoffrey & Schnell, Stefan. 2016. The discourse basis of ergativity revisited. *Language* 92(3). 591–618.
- Haspelmath, Martin. 2001. The European linguistic area: Standard Avarage European. In Haspelmath, Martin & König, Ekkehard & Oesterreicher, Wulf & Raible, Wolfgang (eds.), *Language typology and language universals: An international handbook*, 1492–1510. Berlin: Mouton de Gruyter.
- Hellwig, Birgit. 2010. Meaning and translation in linguistic fieldwork. *Studies in Language* 34(4). 802–831.
- Hellwig, Birgit. To appear-a. Child language documentation: A pilot project in Papua New Guinea.
- Hellwig, Birgit. To appear-b. Children’s narratives in Papua New Guinea: A case study of Qaqet. In Bongartz, Christiane & Torregrossa, Jacopo (eds.), *What’s in a narrative? Variation in story-telling at the interface between language and literacy*. Frankfurt et al.: Peter Lang.
- Hellwig, Birgit & Eisenbeiß, Sonja. Submitted. Extending psycholinguistics to under-researched languages and populations: The principle of justice and ethical challenges for new types of linguistic fieldwork.
- Hellwig, Birgit & Jung, Dagmar. Submitted. Child-directed speech – and what it can tell us about the adult language.
- Henrich, Joseph & Heine, Steven J. & Norenzayan, Ara. 2010. The weirdest people in the world? *Behavioral and Brain Sciences* 33(2/3). 61–83.
- Hildebrandt, Kristine A. & Jany, Carmen & Silva, Wilson (eds). 2017. Documenting variation in endangered languages. *Language Documentation and Conservation*, special publication 13.
- Hill, Jane H. 2002. “Expert rhetorics” in advocacy for endangered languages: Who is listening, and what do they hear? *Journal of Linguistic Anthropology* 12(2). 119–133.
- Himmelman, Nikolaus P. 1998. Documentary and descriptive linguistics. *Linguistics* 36. 161–195.
- Himmelman, Nikolaus P. 2000. Towards a typology of typologies. *Sprachtypologie und Universalienforschung* 53(1). 5–12.
- Himmelman, Nikolaus P. 2006. Language documentation: what is it and what is it good for? In Gippert, Jost & Himmelman, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of language documentation*, 1–30. Berlin: Mouton de Gruyter.
- Himmelman, Nikolaus P. 2012. Linguistic data types and the interface between language documentation and description. *Language Documentation and Conservation* 6. 187–207.
- Keller, Heidi. 2007. *Cultures of infancy*. Mahwah, NJ: Lawrence Erlbaum.
- Kelly, Barbara & Forshaw, William & Nordlinger, Rachel & Wiggelsworth, Gillian. 2015. Linguistic diversity in first language acquisition research: Moving beyond the challenges. *First Language* 35(4/5). 286–304.
- Kelly, Barbara & Rachel Nordlinger. 2014. Fieldwork and first language acquisition. In Gawne, Lauren & Vaughan, Jill (eds.), *Selected papers from the 44th Conference of the Australian Linguistic Society, 2013*, 178–192. (<http://hdl.handle.net/11343/40963>) (Accessed 2018-06-20.)
- Labov, William. 1975. *What is a Linguistic Fact?* Lisse: de Ridder.

- Lehmann, Christian. 2001. Language documentation. A program. In Bisang, Walter (ed.), *Aspects of typology and universals*, 84–97. Berlin: Akademie Verlag.
- Lehmann, Christian. 2004. Data in linguistics. *The Linguistic Review* 21. 175–210.
- Leonard, Wesley Y. & Haynes, Erin. 2010. Making “collaboration” collaborative: An examination of perspectives that frame linguistic field research. *Language Documentation and Conservation* 4. 268–293.
- Leonard, Wesley Y. 2012. Framing language reclamation programmes for everybody’s empowerment. *Gender and Language* 6(2). 339–367.
- Levinson, Stephen C. & Brown, Penny & Danzinger, Eve & De León, Lourdes & Haviland, John B. & Pederson, Eric & Senft, Gunter. 1992. Man and Tree & Space Games. In Levinson, Stephen C. (ed.), *Space stimuli kit 1.2*, 7–14. Nijmegen: Max Planck Institute for Psycholinguistics.
- Levinson, Stephen C. & Cutfield, Sarah & Dunn, Michael & Enfield, Nick & Meira, Sérgio. 2018. *Demonstratives in cross-linguistic perspective*. Cambridge: Cambridge University Press.
- Levinson, Stephen C. & Meira, Sérgio. 2003. ‘Natural’ concepts in the spatial topological domain – adpositional meanings in crosslinguistic perspective: An exercise in semantic typology. *Language* 79(3). 485–516.
- Lieven, Elena & Stoll, Sabine. 2009. Language. In Bornstein, Marc H. (ed.), *The handbook of cross-cultural developmental science*, 543–555. Mahwah, NJ: Lawrence Erlbaum.
- Louagie, Dana & Verstraete, Jean-Christophe. 2016. Noun phrase constituency in Australian languages: A typological study. *Linguistic Typology* 20. 25–80.
- Lüpke, Friederike. 2009. Data collection methods for field-based language documentation. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 6, 53–100. London: SOAS.
- Lüpke, Friederike. 2010a. Rare and endangered – languages or features? An African perspective. *Journal of West African Languages* XXXVII. 119–139.
- Lüpke, Friederike. 2010b. Research methods in language documentation. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 7, 55–104. London: SOAS.
- Maas, Utz. 2010. Literat und orat. Grundbegriffe der Analyse geschriebener und gesprochener Sprache. *Grazer Linguistische Studien* 73. 21–150.
- MacWhinney, Brian. 2000. *The CHILDES Project: Tools for analysing talk*. Mahwah, NJ: Erlbaum.
- Majid, Asifa. 2012. A guide to stimulus-based elicitation for semantic categories. In Thieberger, Nicholas (ed.), *The Oxford handbook of linguistic fieldwork*, 54–71. Oxford: Oxford University Press.
- Mastin, J. Douglas & Vogt, Paul. 2016. Infant engagement and early vocabulary development: a naturalistic observation study on Mozambican infants from 1;2 to 2;1. *Journal of Child Language* 43(2). 235–264.
- Mayer, Mercer. 1969. *Frog, where are you?* New York: Dial books for young readers.
- McGregor, William B. 1997. Functions of noun phrase discontinuity in Gooniyandi. *Functions of Language* 4. 83–114.
- Miller, Jim & Weinert, Regina. 1998. *Spontaneous spoken language. Syntax and Discourse*. Oxford: Clarendon Press.
- McLaughlin, Fiona & Sall, Thierno Seydou. 2001. The give and take of fieldwork: Noun classes and other concerns in Fatick. In Newman, Paul & Ratliff, Martha (eds.), *Linguistic fieldwork*, 189–210. Cambridge: Cambridge University Press.

- Mithun, Marianne. 2001. Who shapes the record: The speaker and the linguist. In Newman, Paul & Ratliff, Martha (eds.), *Linguistic fieldwork*, 34–54. Cambridge: Cambridge University Press.
- Mosel, Ulrike. 2006. Fieldwork and community language work. In Gippert, Jost & Himmelmann, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of language documentation*, 67–85. Berlin: Mouton de Gruyter.
- Mosel, Ulrike. 2012. Morphosyntactic analysis in the field: A guide to the guides. In Thieberger, Nicholas (ed.), *The Oxford handbook of linguistic fieldwork*, 54–71. Oxford: Oxford University Press.
- Nettle, Daniel & Romaine, Suzanne. 2000. *Vanishing voices: The extinction of the world's languages*. New York: Oxford University Press.
- Newman, Paul & Ratliff, Martha (eds.). 2001. *Linguistic fieldwork*. Cambridge: Cambridge University Press.
- Nichols, Johanna & Balthasar Bickel. 2009. *The AUTOTYP genealogy and geography database: 2009 release*. Electronic database, <http://www.uzh.ch/spw/autotyp>.
- Nicolopoulou, Ageliki. 1996. Narrative development in social context. In Slobin, Dan I. & Gerhardt, Julie & Kyratzis, Amy & Guo, Jiansheng (eds.), *Social interaction, social context, and language: Essays in honor of Susan Ervin-Tripp*, 369–390. Mahwah, NJ: Lawrence Erlbaum.
- Norcliffe, Elisabeth & Harris, Alice C. & Jaeger, T. Florian. 2015. Cross-linguistic psycholinguistics and its critical role in theory development: Early beginnings and recent advances. *Language, Cognition and Neuroscience* 30(9). 1009–1032.
- Pederson, Eric & Danziger, Eve & Wilkins, David & Levinson, Stephen C. & Kita, Sotaro & Senft, Gunter. 1998. Semantic typology and spatial conceptualization. *Language* 74(3). 557–589.
- Perkins, Revere D. 2001. Sampling procedures and statistical methods. In Haspelmath, Martin & König, Ekkehard & Oesterreicher, Wulf & Raible, Wolfgang (eds.), *Language typology and language universals: An international handbook*, 419–434. Berlin: Mouton de Gruyter.
- Plank, Frans & Filimonova, Elena. 2000. The Universals Archive: A brief introduction for prospective users. *Sprachtypologie und Universalienforschung* 53. 109–123. Available online at <https://typo.uni-konstanz.de/archive/intro/index.php>.
- Rice, Keren. 2001. Learning as one goes. In Newman, Paul & Ratliff, Martha (eds.), *Linguistic fieldwork*, 230–249. Cambridge: Cambridge University Press.
- Rice, Keren. 2011. Documentary linguistics and community relations. *Language Documentation and Conservation* 5. 187–207.
- San Roque, Lila, Gawne, Lauren & Hoenigman, Darja & Miller, Julia C. & Rumsey, Alan & Spronck, Stef & Carroll, Alice & Evans, Nicholas. 2012. Getting the story straight: Language fieldwork using a narrative problem-solving task. *Language Documentation and Conservation* 6. 135–174.
- Schieffelin, Bambi & Ochs, Elinor (eds.). 1986. *Language socialization across cultures*. Cambridge: Cambridge University Press.
- Schultze-Berndt, Eva & Simard, Candide. 2012. Constraints on noun phrase discontinuity in an Australian language: The role of prosody and information structure. *Linguistics* 50(5). 1015–1058.
- Schütze, Carson T. 1996. *The empirical base of linguistics*. Chicago: The University of Chicago Press.

- Seifart, Frank. 2008. On the representativeness of language documentations. In Austin, Peter K. (ed.), *Language documentation and description*, vol. 5, 60–76. London: SOAS.
- Seifart, Frank & Strunk, Jan & Danielsen, Swintha & Hartmann, Iren & Pakendorf, Brigitte & Wichmann, Søren & Witzlack-Makarevich, Alena & de Jong, Nivja H. & Bickel, Balthasar. 2018. Nouns slow down speech across structurally and culturally diverse languages. *Proceedings of the National Academy of Sciences*.
(<https://doi.org/10.1073/pnas.1800708115>) (Accessed 2018-06-20.)
- Simons, Gary F. & Fennig, Charles D. (eds.). 2017. *Ethnologue: Languages of the World*, 20th edition. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>.
- Slobin, Dan I. 1985-1997. *The crosslinguistic study of language acquisition*, Vol. 1-5. Mahwah, NJ: Erlbaum.
- Slobin, Dan I. & Bowerman, Melissa. 2007. Interfaces between linguistic typology and child language research. *Linguistic Typology* 11. 312–226.
- Smith, Linda T. 1999. *Decolonizing methodologies: Research and indigenous peoples*. 2nd edn. London: Zed Books.
- Stebbins, Tonya N. 2012. On being a linguist and doing linguistics: Negotiating ideology through performativity. *Language Documentation and Conservation* 6. 292–317.
- Stoll, Sabine & Bickel, Balthasar. 2013a. Capturing diversity in language acquisition research. In Bickel, Balthasar & Grenoble, Lenore A. & Peterson, David A. & Timberlake, Alan (eds.), *Language typology and historical contingency*, 195–216. Amsterdam: Benjamins.
- Stoll, Sabine & Bickel, Balthasar. 2013b. The acquisition of ergative case in Chintang. In Bavin, Edith L. & Stoll, Sabine (eds.), *The acquisition of ergativity*, 183–208. Amsterdam: Benjamins.
- Stoll, Sabine & Bickel, Balthasar & Lieven, Elena & Paudyal, Netra P. & Banjade, Goma & Bhatta, Toya N. & Gaenszle, Martin & Pettigrew, Judith & Rai, Ichchha Purna & Rai, Manoj & Rai, Novel Kishore. 2012. Nouns and verbs in Chintang: Children’s usage and surrounding adult speech. *Journal of Child Language* 39(2). 284–321.
- Tomasello, Michael & Stahl, Daniel. 2004. Sampling children’s spontaneous speech: How much is enough? *Journal of Child Language* 31(1). 101–121.
- Valentine, J. Randolph. 2001. *Nishnaabemwin reference grammar*. Toronto: University of Toronto Press.
- Vogt, Paul & Mastin, J. Douglas & Schots, Diede M. A. 2015. Communicative intentions of child-directed speech in three learning environments: Observations from the Netherlands, and rural and urban Mozambique. *First Language* 35(4/5): 341–358.
- Whalen, D. H. & McDonough, Joyce. 2015. Taking the laboratory into the field. *Annual Review of Linguistics* 1. 395–415.
- Wilkins, David. 1999. The 1999 demonstrative questionnaire: “This” and “that” in comparative perspective. In Wilkins, David (ed.), *Manual for the 1999 Field Season*, 1–24. Nijmegen: Max Planck Institute for Psycholinguistics.
- Wilkins, David. 2000. Even with the best of intentions...: Some pitfalls in the fight for linguistic and cultural survival (one view of the Australian experience). In Queixales, Francisco & Renault-Lescure, Odile (eds.), *As linguas amazônicas hoje* [The Amazonian languages today], 61–81. São Paulo: Instituto socioambiental.
- Yamada, Racquel-María. 2007. Collaborative linguistic fieldwork: Practical application of the empowerment model. *Language Documentation and Conservation* 1(2). 257–282.

The TULQuest linguistic questionnaire archive

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This article describes the development and structure of an online interactive archive for linguistic questionnaires developed by the Fédération de Typologie et Universaux Linguistiques (CNRS) program on Questionnaires. The archive allows users to both retrieve and deposit material, with questionnaires categorized according to a taxonomy of features. Questionnaires, defined by our project as any methodological tool designed to collect linguistic data, and written with a capital to highlight this special use of the term, are accompanied by additional materials beyond basic metadata, ranging from a summary of usage protocol, development context, reviews and user tips, as well as the possibility of linking together questionnaires that have been adapted from an original, reflecting the dynamic nature of questionnaire use.

Keywords: Questionnaires, archive, taxonomy, tools for linguistic description

1. Context for archive

The *Fédération de Typologie et Universaux Linguistiques* (TUL) is a CNRS-funded research infrastructure involving 11 CNRS research groups from around France.¹ It sponsors collaborative research projects on typology for 5-year periods.² One of the

¹ The website that makes up the archive was built by Alexandre Roulois, LLF/CNRS. I take this opportunity to thank him for the intuitive work. I also thank two Masters student interns for their work on the archive: Marie Benzerrak (summer 2017) and Célia Richy (summer 2018).

² CNRS leadership has unfortunately decided to replace TUL with a different research infrastructure, and TUL will not be renewed after 2018.

projects for 2014-2018 is on Questionnaires³ (and the project is thus named *TULQuest*), with the aim to develop an online archive for linguistic Questionnaires. The TULQuest project involved members from a number of CNRS research groups (CRLAO, DDL, HTL, LACITO, LLACAN, LLF, SeDyL), and the archive in its current state is the result of active collaboration.

The basis for the TULQuest project was the recognition of a paradox: on the one hand, Questionnaires are a recognized part of a fieldlinguist's toolkit – they are ubiquitously referred to in field manuals (Samarin 1967, Bower 1998, Chelliah and de Reuse 2011, etc) – and developing them appears to be a useful heuristic tool for linguists working through a theoretical or analytical issue; on the other hand, there are few centralized places where linguists can go for Questionnaires. The Max Planck Leipzig Typological Tools for Fieldlinguists, developed by Jeff Good and Peter Cole, has been a popular resource, as has the L&C Field Manuals and Stimulus Materials website of the Language and Cognition department of Max Planck in Nijmegen. Apart from these two websites, Questionnaire projects tend to have their own websites and are thus difficult to find unless one knows about them beforehand (one example is Koptjevskaja-Tamm's Temperature survey and questionnaire) or to be relegated to uncentralized locations (desk drawers, appendices of articles or books, etc) by researchers who do not consider them to be actual research products. It should be noted that in this regard there is a notable difference between visual stimuli, which have fairly wide distribution, perhaps due to the significant investment required for their development, and writing-based questionnaires.

The centralization of Questionnaires to facilitate access to them was not the sole purpose of the project. The goal was also to build an archive that reflected significant features of Questionnaires, such as, among others, their dynamicity, their design context and their history. Questionnaires can and are of course often used to investigate what they were designed for, but they are also frequently adapted by users, to reflect different linguistic or cultural contexts from that intended for the original questionnaire, theoretical evolutions of the field, and even a different topic of investigation (in cases where a linguist draws inspiration from the questionnaire protocol, methodology, design in order to study something different). They are thus tools that are far from stable, and we wanted the archive to make it possible to mark the connection between revised or adapted Questionnaires and their source Questionnaires, linking them together and documenting the changes they had undergone. Another important aspect of Questionnaires, and of all methodological tools, is that they are contextually anchored: they reflect the state-of-the-art of linguistic knowledge at the time of their development, and

³ By Questionnaire (with a capital Q to highlight the special usage of the term) we mean any methodological tool designed to collect linguistic data, thus include both written questionnaires and visual stimuli.

that historical context is crucial to understanding their impact and effectiveness. The archive thus provides a space to associate information of a historical nature to each Questionnaire.

It is our hope that the TULQuest archive will make it possible to centralize and share the vast but sometimes unseen production of Questionnaires by linguists, making them available to other scholars and providing a documentary framework that brings to the fore important features of the Questionnaires.

2. Definition of Questionnaire

One of the first steps in the project was to define the scope of our investigation and attempt to set ourselves a usable definition for what we considered a Questionnaire to be. We decided from the first to be broadly inclusive and to extend our definition to any tool used in the elicitation of linguistic data for a typological or descriptive activity: wordlists, questionnaires (e.g. analytical, translation), stimuli kits, checklists (such as one might find as an appendix to an article describing a phenomenon), even templates for structuring grammars (such as Comrie and Smith *Lingua Descriptive series questionnaire*, Comrie and Smith 1977).

While this definition is very broad, we feel that from an epistemological point of view, a more inclusive perspective allows us to capture some realities that might be lost if we exclude certain types of tool from consideration. In order to capture the fact that our use of the term is specific to our research group, we capitalize it (as per Haspelmath 2010) to Questionnaire. The term is henceforth used as a cover for the various tools included in the archive.

3. Organization of site

The TULQuest archive, which can be found at <http://tulquest.huma-num.fr/en>, is a bilingual English/French website. The architecture of the website is by design very simple. The top menu features five rubrics: Home, Presentation (information about project members), Categories (the taxonomy used to access Questionnaires), References (a list of relevant books on field linguistics methodology and grammar writing) and a Contact interface. The website can be used without registration; registration is only necessary for users who wish to add or modify content. These features of the home page can be seen in Figure 1 below.

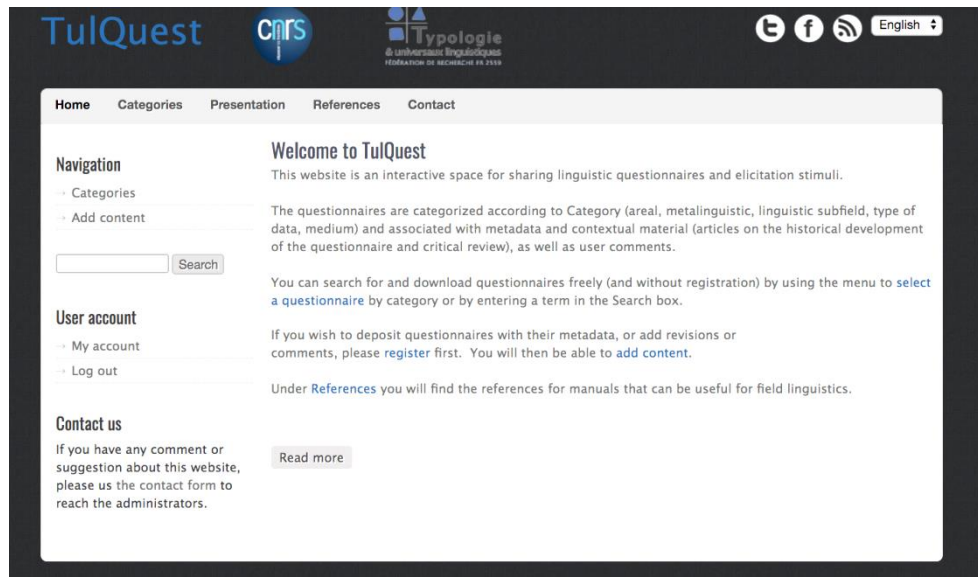


Figure 1. The home page for TULQuest, <http://tulquest.huma-num.fr/en>

There are two main actions that one may take using the website: searching for a Questionnaire, or adding (or modifying) content. These are discussed in sections 3.1 and 3.2 respectively.

3.1 Searching for and downloading a Questionnaire

Questionnaires can be searched for by using either a keyword in a Search box or by selecting a category in the proposed taxonomy, which can be found in the Categories rubric. The taxonomy was the subject of lengthy discussions, attempting to take into account various aspects of Questionnaires that might be relevant to their selection for a given project. The basic categories found are the following:

- TUL Questionnaires⁴
- Areal Questionnaires
- Questionnaires by metalanguage
- Questionnaires by linguistic subfield
- Questionnaires by data type
- Questionnaires by medium

⁴ One of the reasons for creating this archive was as a place for TUL projects to share the results of their work in the form of Questionnaires, thus explaining the decision to include TUL as a “category”.

The category *areal questionnaires* was deemed an important one to the extent that questionnaires developed for a particular linguistic or cultural area are very much marked by that factor, and need to be adapted in order to be successfully used elsewhere. The Swadesh list (Swadesh 1955), which suffers from a clear cultural bias rendering it difficult to use in some linguistic areas (see, for instance, Chelliah and de Reuse 2011: 229), has undergone numerous adaptations (see for example the Matisoff (1978) “Culturally Appropriate Lexicostatistical Model for SouthEast Asia (CALMSEA)” list).

The inclusion of a category *metalanguage* was in recognition of the fact that Questionnaires are developed in languages other than English (or adapted into other languages). While many such Questionnaires have been translated into English or other languages, this category of the taxonomy allows us to recognize other Questionnaire creating “traditions” beyond the anglophone.

The category *linguistic subfield*, with subcategories for different subfields of linguistics, is an obvious one. Nonetheless, sorting Questionnaires into subfields is not always simple,⁵ insofar as many of them cover more than a single subfield--hence the inclusion, for example, of 'morphosyntax' in our taxonomy--but categorization by subfield, even if it is not fine-grained, is an important and useful categorizational tool.

The category *data type* focuses on the type of the output of the Questionnaire, with the following subcategories: lexical, paradigmatic, narrative, conversational, phrasal/clausal. As with linguistic subfields, many Questionnaires cover more than a single subcategory, and in some cases, interpretations of what type of data the Questionnaire produces vary. We nonetheless feel it of practical interest for users to be able to select Questionnaires in terms of the type of data they were likely to produce.

In the category *Questionnaires by medium*, we arrive at the classic basis for categorization of Questionnaires, namely the crucial feature of their design which is their material form. The subcategorization here deserves discussion: the category is divided into visual stimuli, on the one hand, and writing-based questionnaires, on the other. Even though the decision for the TULQuest archive was to be inclusive of all types of Questionnaires, this subdivision into writing-based questionnaires and visual stimuli is ultimately bound to emerge in any classification scheme.⁶ The subcategorization is as follows:

⁵ An example, among many, of a Questionnaire being in many categories at once is Rose's (2013) Questionnaire on genderlects, which is as much about sociolinguistics as it is about morphosyntax.

⁶ Note that these two types of tools are considered so different that there are, to my knowledge, no published taxonomies that take into account both types. The existing taxonomies tend to focus on one kind or another: Mosel (2014) proposes a taxonomy of written questionnaires, with categories translational questionnaires, scenario questionnaires, and grammatical structure questionnaires; taxonomies of (visual) stimuli can be quite detailed (see Lüpke 2009, Hellwig 2006, Majid 2014) but tend to refer to non-stimuli with expressions such as 'traditional elicitation' (Hellwig 2006: 330), 'non-linguistic stimuli' (Majid 2014: 55), or 'verbal prompts' (Lüpke 2009: 70).

- Visual stimuli
 - Pictures
 - Picture books
 - Videos
 - Constructed scenes
- Writing-based questionnaires
 - Checklists
 - Analytical
 - Translation-based
 - Word lists
 - Stage directions

Unsurprisingly, visual stimuli will include Questionnaires where the main medium for eliciting material is primarily visual: these consist of individual pictures (drawings, photographs) which are either discrete (such as Dotte’s (2012) photographs of areally relevant items for the elicitation of possessive classifiers) or can be arranged to form part of a larger sequence (see San Roque et al. 2012), as well as picture books, which can be designed to elicit specific grammatical categories (such as the Hunting Story by Vuillermet and Desnoyers (2013), originally designed to elicit Associated Motion) but also be used to collect “general” narrative data (such as Carroll et al’s (2011) Jackal and Crow stimulus). Another medium is video, of which there are many examples and which can be used creatively to elicit both materials of a fundamentally dynamic nature (see the *Trajectoire* stimulus set by Ishibashi & al. (2006) designed to capture descriptions of Path of motion realized by various Figures in different Ground types; the protocol and materials are described in the article by Kopecka and Vuillermet in this issue) and constructions that are not necessarily dynamic (see the article by Lovick and Tuttle about video montages of taboo scenarios to elicit prohibitives and related in Yukon languages). Note that while visual stimuli are often the domain of psycholinguists--see the productivity of the scholars at and from the MPG Nijmegen--this is not an absolute.

More has been written on the categorization of written questionnaires than of visual stimuli, a fact which is unsurprising considering the much longer history of written questionnaires. The oldest written questionnaire in TULQuest is from 1880: Powell’s elicitation schedules for American Indian languages, which are essentially wordlists. There is a period of intense questionnaire development around the EURO-TYP (“Typology of the languages of Europe”) project, funded by the European Science Foundation from 1990-1994 and directed by E. König (see the General Preface to Dahl (2002) for details), which led to a vast number of questionnaires on various topics. These were invariably written questionnaires, but of different types, with Dahl’s “translation-based” questionnaire

appearing in this period. Questionnaires at this time were generally divided into analytical questionnaires – lists of questions about a topic, generally addressed to a trained linguist – and translation-based questionnaires--which could be used by anyone familiar with the metalanguage. As far as our taxonomy is concerned, we have kept the terminology: “word-list”, “analytical questionnaire” and “translation-based questionnaire” are all transparent. To these we have added checklists and stage directions. Checklists are any apparatus which helps ensure that a language documenter can get as complete a picture of the phenomenon under description as possible (within the context of a given time frame): as such, they appear to be an important part of the field linguist’s toolkit. An example of such a tool might be Comrie and Smith’s questionnaire: as a grammaticographical template, it serves as a checklist, helping ensure that no topic is omitted (of course, the problem is then that if a topic in the list does not exist in a language, it ends up listed in the resulting grammar as absent⁷), even though this was not the intent of the authors, for whom the generation of a comparable table of contents across grammars was the main goal. A different example of a checklist is Jacques (2016) on relative clauses⁸: this Questionnaire is derived from an appendix to an article on relativization in a particular language, provided as an aid to others writing on the same topic. It sums up general literature, suggests lines of research and questioning that can be of use to others – it essentially recycles the knowledge attained in exploring a category in one language to the description of a comparable category in another. Stage directions, finally, are meant to guide a narrative performance with the goal of ultimately being able to produce roughly comparable material across different languages.

The taxonomy does not take into account every existing type of Questionnaire: among visual stimuli, the very wide range of protocols means that they cannot be categorized simply according to the scheme above, which is unable to account for the creative elements and combinations of tasks that may make up a Questionnaire (see for example the Getting the Story Straight protocol, San Roque et al. 2012); this is also the case with writing-based Questionnaires, such as François’s “conversational questionnaire” (see this issue) which combines word lists, stage directions, translation of set dialogues, and thus crosses over types.

This raises the issue of whether a taxonomy for elicitation tools needs to account for every type in existence, or whether we must consider that the creativity and changing needs (and technologies) of linguists developing these tools make them inherently uncategorizable beyond the relatively basic taxonomy discussed above. As far as the archive is concerned, any number of categories can be selected when entering a new Questionnaire,

⁷ See, as an example among many, Section 2.1.3.2.1.4 Future in the grammar of Rapanui: “There is no exclusively future form.” (Du Feu 2010:158).

⁸ <http://tulquest.huma-num.fr/fr/node/28>

giving the Questionnaire developer some flexibility when archiving their tool. Entering new Questionnaires into the database is discussed in 3.2.1 below.

3.2 Adding content

The second action one can take with the TULQuest archive is to add content to the site. Selecting “Add content” on the site, after registering as a user, leads to four choices: Questionnaire; Questionnaire: history; Review; Revision. Each of these types of content will be addressed in turn.

3.2.1 Adding a Questionnaire

A new Questionnaire is entered using an online form⁹, through which one enters metadata for the Questionnaire as well as the tool itself. The relevant categories of the taxonomy must also be selected from a menu, with any number of choices allowed. The person inputting the Questionnaire also enters short texts summing up what the goals the Questionnaire is meant to achieve, a summary of the usage protocol, and the development context.

The Questionnaire can be uploaded as an attached file.¹⁰ There are also fields available for a URL and bibliographical references, making it possible to include information about Questionnaires even when intellectual property rights forbid uploading the material directly onto TULQuest.

A final text field allows the depositor to enter preferred citation format for the Questionnaire, particularly useful in the case of as-yet unpublished Questionnaires as it makes it possible to cite them.

The result of the online form is a page containing metadata on the Questionnaire, in addition to information about its goals, protocol, development context (which may all be expanded upon in the actual document), a preferred citation form, and files for the Questionnaire. A URL may also be listed, if relevant. Note the field for User comments at the very bottom of the page. The interface is exemplified in Figure 2.

⁹ <http://tulquest.huma-num.fr/en/node/28#overlay=en/node/add/questionnaire>

¹⁰ Currently accepted formats are .txt, .pdf, .doc, .docx.

A hunting story: eliciting associated motion through guided narrative

[Voir](#) [Modifier](#)

Auteur : Vuillermet, Marine & Desnoyers, Antoine N'oubliez pas de citer le questionnaire téléchargé lorsque vous l'utilisez.

Date de publication : 2013 **Pour citer ce questionnaire :**

Références bibliographiques :

Vuillermet, Marine & Antoine Desnoyers. 2013. A hunting story -- Yendo a cazar: A visual stimulus for eliciting constructions that associate motion with other events. Linguistic Department, UC Berkeley, ms.

Vuillermet, Marine. 2013. "Associated Motion Elicitation Kit. (Version 7)" Department of Linguistics, UC Berkeley.

Files

- Vuillermet2013_AM-kit_protocol_7.pdf
- Vuillermet_desnoyers2013_hunting-story_yendo-a-cazar_version-para-imprimer.pdf

Tools

- + Révision + Historique
- + Evaluation + Fichier

Objectifs

"Pictures and video stimuli are useful to investigate specific semantic domains and/or grammatical categories, especially for comparative work. The AM [Associated Motion; see Development context below for details] storybook was specifically conceived to elicit AM morphemes, i.e. morphemes which encode a back-grounded motion to a main action. This is the reason why all the pictures illustrate main actions that occur within a journey – e.g. checking the rifle before leaving, waving to the family while leaving, greeting friends while walking, etc.

Analyzing the data collected with the AM stimulus should:

- result in a better understanding of the semantic features of each AM morpheme and of the system as a whole (inventory)
- permit to investigate the discourse use of the morphemes;
- allow comparison across consultants – according to their age, gender and level of fluency ;
- help crosslinguistic comparisons, also in terms of inventories and discourse use." (Vuillermet & Desnoyers, 2013 : 1)

Résumé du protocole d'utilisation du questionnaire

The entire experience consists of five instructions, completed by the same consultant. Depending on her research interests, the researcher may attend the first two only or follow the entire protocol. The instructions are discussed in details in the document associated to the *Hunting Story*.

- Instruction 1 – 'Here is a hunting story': Discovering the story with the researcher
- Instruction 2 – Re-telling the story with an itinerary in mind
- Instruction 3 – How did the speaker like it?
- Instruction 4 – Telling a complementary similar story
- Instruction 5 – The Pear Film

Contexte de développement du questionnaire

The *Hunting Story* is a visual stimulus (Vuillermet & Desnoyers 2013). This storybook has primarily been designed to elicit "associated motion" (henceforth AM) morphology, but can be used to examine any type of **co-expression of a motion and a non-motion event**. The visual stimulus comes together with a document (Vuillermet, in progress) describing the visual stimulus and its goals in details, instructions how to use the storybook (i.e. a **suggested protocol**), a questionnaire designed to express feedback on the kit, **suggestions for glossing AM morphemes** and a **basic bibliography** on AM.

It was developed during a one-year postdoctoral study at the University of Berkeley, financed by the Fyssen Foundation.

Please contact me at marinevui@yahoo.fr if you want to use the stimulus, so that I can keep track of the users and the languages surveyed.

[Back to the previous page](#)

Figure 2. Screenshot of a Questionnaire file.

3.2.2 Adding a Questionnaire history

Because of the importance of the historical context in which Questionnaires are produced (see for example Dollinger 2015), we have provided the means for an additional file, in the form of a full-scale, authored article on the history of the Questionnaire in question, to be added to any Questionnaire. Authors of such articles are encouraged to discuss both the historical context for the development of the Questionnaire and its impact on the field.

These articles can be written by scholars who were not involved in the Questionnaire's development although ideally, for Questionnaires developed in the last few years, it would be particularly useful to benefit from the insights of the designers themselves on what they were trying to achieve, how their design was influenced by such goals, and on the quality of the data collected and the impact of the tool. In many cases, it is unreasonable to hope that complete data of this type will be collected from the authors of Questionnaires, and it is thus our hope that the short texts entered along with Questionnaire meta-data, describing the goals, usage protocol, and development context, will provide some clues for historians of linguistics who may some day wish to study a particular Questionnaire in the archive.

3.2.3 Adding a Review

Another type of file that can be associated with a Questionnaire file is a Review, in other words a critical analysis of the Questionnaire. In some cases, this Review section is used to associate material that appeared independently of the archive on a particular Questionnaire, such as a review of the Questionnaire and associated work in the linguistics literature for example. In other cases, the review can be written directly into the appropriate file in the archive. In both cases, the review file provides a theoretical analysis of the Questionnaire, evaluating its success as a tool for collecting data from speakers or from linguists. In this sense, the review is related to User comments (see §3.2.5), but takes the form of a more analytical document.

3.2.4 Adding a Revision

One aspect of Questionnaires which we have attempted to address through the archive is their dynamicity: rather than being the stable tools they may appear to be at surface-level, in actual usage they are often re-adapted to the particular requirements of the linguist using them. In order to highlight this dynamic quality, the archive makes it possible to connect Questionnaires that are adapted from an original back to their source. This can be done in one of two ways, depending on the intellectual distance the reviser considers there to be between the adapted version and the original:

- a) If the linguist creating an adaptation of an original Questionnaire feels that the new Questionnaire represents something independent enough to deserve its own unique file in the archive, it can be entered as a new Questionnaire, using the metadata file discussed in §3.2.1. In this case, instead of appearing within the file for the original Questionnaire, it will have its own independent file – with metadata, categories, goals, development context, and protocol – but it can be linked to the original Questionnaire that inspired it by entering the original's ID¹¹ in the metadata formula. When this option is selected, an additional line of text will appear in the Questionnaire file in the archive, alongside the metadata, with a link to the original Questionnaire's file within TULQuest, thus ensuring that the connection between the two Questionnaires can be traced. An illustration of this is seen in Figure 3.

STEDT questionnaires: Wordlists for South-East and East Asian languages

[View](#) [Edit](#)

Author : James Matisoff

Publication date : 1989

Original Questionnaire : [node/7](#)

Bibliographical references :

Matisoff, James, 1989. STEDT Questionnaires.

Do not forget to cite the questionnaire when you use it.

To cite this questionnaire :

- Matisoff, James, 1989. STEDT Animal Questionnaire
- Matisoff, James, 1989. STEDT Body Parts Questionnaire
- Matisoff, James, 1989. STEDT Kinship Terms and Terms referring to People Questionnaire
- Matisoff, James, 1989. STEDT Natural Objects Questionnaire
- Matisoff, James, 1989. STEDT Plants Questionnaire

Files

- [STEDT Animals.txt](#)
- [STEDT Body parts.txt](#)
- [STEDT Kinship.txt](#)
- [STEDT Natural objects.txt](#)
- [STEDT Plants.txt](#)

Figure 3. Screenshot of a Questionnaire file with active link to original Questionnaire

- b) If the distance between the two Questionnaires is considered to be closer, then one can opt to set up the revised Questionnaire as an adaptation of an original by using the Revision file. The Revision file will allow the inputter to assign a new title to the adaptation, to select the original via a drop-down menu listing all Questionnaires in the archive, to complete a text field listing the changes that were made, and to attach the adapted document, along with a revision date. The Revision to the Ques-

¹¹ In the text box labeled "Original questionnaire", enter the number at the end of the URL for the Questionnaire: e.g. the number '39', found at the end of URL <http://tulquest.humanum.fr/en/node/39> for Chevrier's Questionnaire on lexical elicitation for Costa Rica.

tionnaire will not have its own independent file in the archive, but rather will appear on the file for the original Questionnaire, along with the new title, the attached document, and associated with another document listing the changes that were made and the date.

We believe that this feature of the website, with two different ways of connecting revisions to source Questionnaires, is unique in making it possible to reflect the dynamic nature of Questionnaires in actual use.

3.2.5 Adding a User comment

For reviews of the Questionnaire of a more casual nature than those discussed in §3.2.3, we have included a user comment section directly on the Questionnaire file. The author of these comments is identified through their registration on the website (obligatory in order to be able to use this feature), and this section is intended as a space for sharing usage or adaptation tips by users who have tested the Questionnaire in real conditions. It can also be used to document any comments on the Questionnaire.

4. Conclusion

The TULQuest archive is a work in progress, this progress being entirely dependent on cooperation from linguists far and afield to enter material,¹² and as new Questionnaires are entered, the archive is made to evolve to accommodate whatever specific and particular needs arise with the new material. The archive too is thus, like Questionnaires, somewhat more dynamic than static, and the description above is bound to change with future modifications to the input format and Questionnaire display.

The main things to be noted are that we have attempted to design and implement an architecture reflecting the basic dynamic nature of Questionnaires, allowing adaptations of original Questionnaires to be connected in order to trace their evolution. The taxonomy we have devised for the categorization of Questionnaires contains some expected types and others which are less so, making it possible to capture the main characteristics of all the Questionnaires we have entered into the archive thus far, from the type of information they generate, to the medium they use to do so.

Another innovative feature of the TULQuest archive is the possibility of associated peripheral materials with Questionnaires, surrounding them by critical reviews and information about the historical context for their development, and thus providing a richer,

¹² Note that there is also a contact form on the site which can be used to provide feedback.

more complete picture of these tools that for so long were considered off-shoots of linguistics research without any serious scientific value. We hope that researchers developing Questionnaires are now able to cite them and to get feedback on their tools, and that this collection will also make it possible to carry out serious epistemological and historical studies of Questionnaires in the future.

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I am most grateful to the members of the TULQuest project team (listed on the TULQuest site) for interesting discussions and brain-storming sessions during official meetings from 2014-2018, and for more informal conversations ever since. I also wish to thank Stéphane Robert, former director of TUL, and Isabelle Bril, the most recent director of TUL, for their stewardship of an infrastructure that made it possible to collaborate fruitfully with so many researchers across France.

References

- Bowern, Claire. 2008. *Linguistic Fieldwork. A practical Guide*. London: Palgrave Macmillan.
- Carroll, Alice & Kelly, Barbara & Gawne, Lauren. 2011. *The jackal and crow picture task. Designed for use by the Social Cognition and Language Project*. A collaboration of The Australian National University, Griffith University, University of Melbourne and the Max Planck Institute for Psycholinguistics.
- Chelliah, Shobhana & de Reuse, Willem. 2011. *Handbook of descriptive linguistic fieldwork*. Dordrecht: Springer.
- Comrie, Bernard & Smith, Norval. 1977. Lingua descriptive studies: questionnaire. *Lingua* 42. 1-72.
- Dahl, Östen (ed.). 2000. *Tense and aspect in the languages of Europe*. (Empirical approaches to language typology.) Berlin & New York: Mouton de Gruyter.
- Dollinger, Stefan. 2015. *The written questionnaire in social dialectology. History, theory, practice* (IMPACT Studies in Language and Society 40.) Amsterdam & Philadelphia: John Benjamins.
- Dotte, Anne-Laure. 2012. Kit de stimuli iconographiques pour élicitation de classificateurs possessifs (en iaai, langue océanienne, famille austronésienne). <http://tulquest.humanum.fr/en/node/27>
- Du Feu, Veronica. 2010. *Rapanui*. (Routledge Descriptive Grammar Series.) London & New York: Routledge.
- François, Alexandre. 2019. A proposal for conversational questionnaires. In Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 155-196.

- Hellwig, Birgit. 2006. Field semantics and grammar-writing: Stimuli-based techniques and the study of locative verbs. In Ameka, Felix & Dench, Alan & Evans, Nicholas (eds.), *Catching language: the standing challenge of grammar writing (Trends in Linguistics 167)*, 321-358. Berlin & New York: Mouton de Gruyter.
- Ishibashi, Miyuki & Kopecka, Anetta & Vuillermet, Marine. 2006. *Trajectoire : matériel visuel pour élicitation des données linguistiques*. Laboratoire Dynamique du Langage, CNRS / Université Lyon 2. Projet de Fédération de recherche en Typologie et Universaux Linguistiques. <http://tulquest.huma-num.fr/fr/node/132>.
- Jacques, Guillaume. 2016. Subjects, objects and relativization in Japhug. *Journal of Chinese Linguistics* 44(1). 1–28. <http://tulquest.huma-num.fr/fr/node/28>
- Lüpke, Frederike 2009. Data collection methods for field-based language documentation. In Austin, Peter (ed.), *Language Documentation and Description*, vol 6, 53-100. London: SOAS
- Lovick, Olga & Tuttle, Siri G. 2019. Video elicitation of negative directives in Alaskan Dene languages: reflections on methodology. In Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 125-154.
- Majid, Asifa. 2014. A Guide to Stimulus-Based Elicitation for Semantic Categories. In Thieberger, Nicholas (ed.), *The Oxford Handbook of Linguistic Fieldwork*, 54–71. Oxford: Oxford University Press
- Matisoff, James. 1978. *Variational Semantics in Tibeto-Burman: the 'organic' approach to linguistic comparison*. (Wolfenden Society on Tibeto-Burman Linguistics. Occasional papers 6). Philadelphia: Institute for the Study of Human Issue.
- Mosel, Ulrike. 2014. Morphosyntactic analysis in the field: A guide to the guides. In Thieberger, Nicholas (ed.), *The Oxford Handbook of Linguistic Fieldwork*, 72-89. Oxford: Oxford University Press
- Rose, Françoise, 2013. Questionnaire on genderlects, CNRS. (English version). <http://tulquest.huma-num.fr/en/node/136>
- Samarin, William. 1967. *Field Linguistics. A guide to Linguistic Field Work*. New York: Holt, Rinehart and Winston.
- San Roque, Lila & Gawne, Lauren & Hoenigman, Darja & Miller, Julia Colleen & Rumsey, Alan & Spronck, Stef & Carroll, Alice & Evans, Nicholas. 2012. Getting the story straight: Language Fieldwork Using a Narrative Problem-Solving Task. *Language Documentation & Conservation* 6. 135- 174.
- Swadesh, Morris. 1955. Towards greater accuracy in lexicostatistic dating. *International Journal of American Linguistics* 21. 121-137.
- Vuillermet, Marine & Desnoyers, Antoine. 2013. A hunting story--Yendo a cazar: A visual stimulus for eliciting constructions that associate motion with other events. Linguistics department, UC Berkeley, ms. <http://tulquest.huma-num.fr/en/node/46>
- Vuillermet, Marine & Kopecka, Anetta. 2019. *Trajectoire*: a methodological tool for eliciting Path of motion. In Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 97-124.

Automatic construction of lexical typological Questionnaires

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Questionnaires constitute a crucial tool in linguistic typology and language description. By nature, a Questionnaire is both an instrument and a result of typological work: its purpose is to help the study of a particular phenomenon cross-linguistically or in a particular language, but the creation of a Questionnaire is in turn based on the analysis of cross-linguistic data. We attempt to alleviate linguists' work by constructing lexical Questionnaires automatically prior to any manual analysis. A convenient Questionnaire format for revealing fine-grained semantic distinctions includes pairings of words with diagnostic contexts that trigger different lexicalizations across languages. Our method to construct this type of a Questionnaire relies on distributional vector representations of words and phrases which serve as input to a clustering algorithm. As an output, our system produces a compact prototype Questionnaire for cross-linguistic exploration of contextual equivalents of lexical items, with groups of three homogeneous contexts illustrating each usage. We provide examples of automatically generated Questionnaires based on 100 frequent adjectives of Russian, including *veselyj* 'funny', *ploxoj* 'bad', *dobryj* 'kind', *bystryj* 'quick', *ogromnyj* 'huge', *krasnyj* 'red', *byvsij* 'former' etc. Quantitative and qualitative evaluation of the Questionnaires confirms the viability of our method.

Keywords: lexical typology, adjectives, distributional semantic models, hierarchical clustering, questionnaire

1. Introduction

Until recently, the lexicon was regarded to be an unsystematic and highly idiosyncratic part of a natural language, escaping any kind of a strict cross-linguistic comparison. This vision changed drastically when the seminal work on the typology of color terms by P. Kay and B. Berlin appeared in 1969. Since then, a growing body of research in so-called lexical typology (see Koptjevskaja-Tamm et al. 2016 for a recent overview) has consistently shown that a comparative study of words from different languages is a meaningful approach, but is fruitful only if there is a very well-defined *tertium comparationis* – a typological Questionnaire.¹

Indeed, data extracted from different dictionaries are not in most cases directly comparable with each other, due to the lack of a single tradition and a unified metalanguage of dictionary entry representation. Monolingual and especially parallel corpora sometimes help to overcome the problem of data comparability (cf. Östling 2016; Wälchli & Cysouw 2012), but well-balanced corpora of a considerable size are only available for a very limited number of languages. In this situation, Questionnaires play a crucial role in typological research. Beside their main function, which is to provide uniform cross-linguistic data for a comparative study of a lexical domain, such Questionnaires can be also used in fieldwork as a tool for a typologically-oriented description of the lexicon in understudied, and especially endangered, languages.

There are several types of Questionnaires used in lexical typological studies: wordlists, checklists, translation-based questionnaires, sets of extralinguistic stimuli (pictures, video and audio clips, etc.). Construction of a Questionnaire of any of these types is time-consuming. Consequently, Questionnaires, especially those built with the goal of revealing fine-grained semantic distinctions, are usually designed for a very limited semantic domain, such as verbs of cutting and breaking (Majid & Bowerman 2007) or adjectives of speed (Plungian & Rakhilina 2013). To compensate for this and to describe the vocabulary of a low-resourced language, one needs a whole range of Questionnaires covering at least the core part of the lexicon.

In the present paper, we suggest a methodology to construct analytical questionnaires (which could also serve as translational ones; we elaborate on their possible uses in Section 2) for typologically-oriented lexicographic studies of words denoting qualitative features (corresponding to qualitative adjectives in English: *sharp*, *wet*, *warm*, and so on). Our technique is based on computational processing of a monolingual corpus. On the one hand, this method is fully automatic, and hence makes it possible to produce many

¹ We adopt here the terminology of the TULQuest project (cf. Lahaussais (2019) in this volume) and use the term “Questionnaire” (with the capital Q) to refer to any kind of written-based or extralinguistic stimuli used to collect linguistic data.

questionnaires very quickly. On the other hand, it is grounded in our experience of manual typological research, and we have tested our model on manually collected data from several semantic domains.

The paper is organized as follows. In Section 2, we present a brief overview of the existing types of lexical typological Questionnaires, analyse their advantages and shortcomings, and discuss in detail special Questionnaires that we seek to create automatically. In Section 3, we introduce the distributional semantic modeling framework, and in Section 4 we describe the results of our preliminary experiments of its application to the task of Questionnaire construction. Section 5 gives an overview of the 100 Questionnaires for adjectival lexicon produced automatically following the proposed methodology. Concluding discussion follows in Section 6.

2. Lexical Questionnaires

The most natural Questionnaires for lexical data collection, especially in the primary language documentation scenario, are wordlists of various kinds: the Swadesh list of core vocabulary and its versions adapted to specific regions (cf. Abbi 2001 for South Asia, Sutton & Walsh 1987 for Australia), the Intercontinental Dictionary Series (IDS) wordlist (Key & Comrie 2007), and others.

Despite the fact that the wordlists are primarily used to compile a dictionary for a particular language, data from different languages collected on the basis of one and the same set of concepts is used for typological studies as well. For example, the Database of Cross-Linguistic Colexifications (CLICS, List et al. 2014) is built primarily on data from the IDS, and the same list of concepts forms the basis of the World Loanword Database (WOLD, Haspelmath & Tadmor 2009).

Wordlists, however, are mostly oriented to nominal vocabulary. The IDS set of concepts is divided into twenty-four sections (kinship, animals, the body, the house, clothing and grooming, agriculture and vegetation, etc.), and only a few of them contain primarily verbal (motion) or adjectival (sense perception) notions. Words referring to concrete objects are easier to study and to elicit, because one can simply point a finger at their referents and ask a consultant to name every item, exactly as linguistic fieldwork guidelines recommend (cf. Bowern 2015). Differences within verbal and adjectival (or, more precisely, qualitative) semantic domains are much subtler and in most cases require additional typological research. As a result, the nominal lexicon is better elaborated and presented in more detail in lexical databases (cf. the very fine-grained representation of the domain ‘earth – ground / soil – dust – mud’ in the CLICS database), while the data on concepts that are usually expressed by verbs and adjectives is much poorer. Many such

concepts are completely absent (e.g., ‘swing’ / ‘sway’ / ‘oscillate’), and many others are too general (e.g. ‘sharp’, which in many languages is divided lexically into at least two sub-domains: ‘sharpness of cutting instruments’ vs. ‘sharpness of piercing instruments’, cf. *tranchant* vs. *pointu* in French).

Typologists who focus on a particular lexical domain enjoy the opportunity to prepare a more detailed Questionnaire for the chosen semantic field. The best-known and most widespread lexical typological tradition is that of the research group at Max Planck Institute for Psycholinguistics in Nijmegen (Majid 2015). This approach is denotation-based: Questionnaires consist of carefully prepared extralinguistic stimuli of various kinds (pictures, video clips, sounds, etc.), and are hence easy to use in elicitation. A so-called “etic grid” forms the basis of every Questionnaire, i.e. sets of stimuli include all combinations of several parameter values. For example, the Munsell color chart is used to study color terms (cf. Berlin & Kay 1969; Kay et al. 2007), and video clips representing various combinations of subjects, objects (including also their possible final states) and instruments are designed for the analysis of verbs of cutting and breaking (Majid & Bowerman 2007).

This methodology allows for a very fine-grained analysis of certain semantic fields, with Questionnaires freely accessible and widely used in fieldwork. The main restriction of denotation-based Questionnaires concerns the range of lexical domains to which they can be applied: some concepts are hardly represented unambiguously with an extralinguistic stimulus, cf. evaluative meanings (good films, tasty food) or pain predicates. In order to take into account metaphorical extensions (cf. blue mood) and specific contextual constraints (e.g., the English colour term orange does not normally apply to hair color), additional techniques of data collection and analysis are required.

The frame approach to lexical typology, elaborated by the Moscow Lexical Typology group (Rakhilina & Reznikova 2016), relies on the linguistic behavior of the lexemes constituting a semantic domain and extends the Moscow Semantic School tradition of distinguishing between near-synonyms based on differences in their distribution (Apresjan 2000) to cross-linguistic comparison of translational equivalents. Within this methodology, groups of contexts referring to various types of extralinguistic situations (“frames”) form a typological Questionnaire and serve as the *tertium comparationis* for the field in question. For example, the following situations are relevant for the domain ‘sharp’: ‘sharpness of cutting instruments’ (sharp knife, sharp blade), ‘sharpness of piercing instruments’ (sharp arrow, sharp spear), ‘pointed form’ (sharp / pointed nose, shoe toe), etc.

Frame-based Questionnaires are primarily analytical: they list possible usage patterns and predict potential lexical oppositions. They are intended for language experts who are supposed to fill them with language data from dictionaries, corpora and fieldwork, i.e. to

find out what lexemes cover the semantic domain in question and what their contextual restrictions are. A list of minimal contexts that serve as illustrations for frames can be treated as a translation-based questionnaire, useful when working with bilingual consultants. However, it is recommended that language experts extend short diagnostic phrases to complete sentences or even paragraphs in order to provide a natural usage context example.

This methodology is applicable to any semantic domain, and allows for typological analysis of both direct and figurative senses of words. However, it comes at the price of the very time-consuming procedure of Questionnaire preparation. To reveal all the context types relevant to the field, one has to conduct a thorough investigation of contextual preferences of the lexemes from the chosen domain in at least 3-5 languages, based on dictionary and corpus data, as well as on native speaker judgments.

In the remainder of the paper we will present an algorithm inspired by the Frame approach procedure of Questionnaire construction that designs Questionnaires for words of qualitative features automatically. We highlight that our algorithm only uses data from one language (in our experiments we use Russian) as the input to typological predictions.

3. The approach taken: distributional models for semantic representations

Research in language typology suggests that typologically attested lexical distinctions are largely semantically motivated rather than idiosyncratic. If this is the case, one can find indications of potential semantic distinctions in any language, provided that different languages have comparable expressive power. One can therefore construct a lexical Questionnaire listing potentially distinct sets of word usages based on semantic representations for a single language. Such a monolingual Questionnaire might be approximate, in particular it may draw more potential distinctions than are attested in the lexica of actual natural languages (this can be treated as an additional bonus, unless these fine-grained oppositions are too numerous), or it may overlook some word usages that show a peculiar behavior in some languages. These potential drawbacks are compensated by the fact that such a Questionnaire can be built prior to any typological work.

One further advantage compared to the traditional typological research emerges if Questionnaires can be constructed automatically on the basis of computational semantic models. Here, we rely on distributional semantics (Lenci 2008).

The distributional approach to meaning represents each meaningful unit, typically a word, as a multidimensional vector (one can think of it as a point in a multidimensional

space). The vector for each word is obtained from the statistics of the word's distribution in text corpora. While sharing these basic properties, distributional semantic models (DSM) come in different flavors that vary in their details. In some models, the dimensions of the vectors correspond directly to contexts (i.e. to the words that occur within a window of a certain size in relation to the target item), so that the value of a particular vector dimension is interpreted as a measure of association between the target word and the context. For instance, if dimension 537 corresponds to the context word *hand*, the value of dimension 537 for the vector of *bracelet* encodes the statistical association between the words *bracelet* and *hand*. More often, distributional models use latent vector representations from which one can predict the association between a word and its contexts but where the individual dimensions do not necessarily have such an immediate interpretation. Further, contexts can be collocates of a given word (e.g. *hand* as a context for *bracelet*) as in Lund & Burgess 1996, or documents in which the word appears, as in Landauer & Dumais 1997. A further dimension of variation within distributional models is the method used for obtaining the latent vector representations; this ranges from various analytical matrix decomposition methods, some of which are claimed to have greater interpretability than others (Griffiths et al. 2007), to neural models that learn semantic representations stochastically (e.g. Skip-gram and Continuous Bag of Words models, see Mikolov et al. 2013).

Distributional semantic models have shown good performance in various tasks and are generally known to contain a wealth of lexical semantic information. For example, a DSM can reliably predict human judgments about the semantic relatedness of words, and moreover it encodes cues about the properties of the words' referents (Herbelot & Vecchi 2015).

Distributional semantic representations have been extended beyond the meanings of words to larger meaningful units. In particular, multiple models for compositionality on word vectors and for their contextualization have been developed over the last decade. In the case of compositionality, the goal is to create a representation of a larger unit, such as the phrase *warm milk*, from representations of its parts, in this case from vectors of the words *warm* and *milk*. In the task of contextualization, on the other hand, the goal is to create a representation of a word meaning in a particular context, e.g. a representation of the meaning of *warm* when it occurs in the phrase *warm milk*. In practice, similar computational models have been applied to both tasks, with the simple vector addition serving as a good enough approximation of both compositionality and contextualization in many cases. There are mathematical reasons for the success of the additive model (Paperno & Baroni 2016), but its popularity derives mainly from the fact that increases in performance over addition come at the expense of considerably greater model complexity. This makes addition an obviously practical first choice for a compositionality model.

In our previous work² (Ryzhova et al. 2016) we proposed a new application of compositional distributional semantic models: predicting typological similarities between word usages, for example. We took usages of adjectives related to sharpness and smoothness as attested in the Moscow Database of Qualitative Features (Kyuseva et al. 2013). The Database stores data on lexicalization for approximately 20 semantic domains of physical qualities in an average of 15 languages. Language samples differ for different domains, but most of them include some Slavic, Germanic, Romance, Celtic and Finno-Ugric languages, as well as Mandarin Chinese, Japanese, Korean and some minor languages from the North Caucasus area. The Database contains a frame-based Questionnaire for every domain filled with data from the languages of the sample. Each usage type (*frame*) is represented by one or more diagnostic contexts which are nouns triggering a specific cross-linguistically invariant reading of the adjective when combining with it; for example, *nose* is one of the diagnostic contexts strongly associated with the ‘pointed shape’ reading of *sharp*.

Based on the data in the Moscow Database of Qualitative Features, we computed a measure of *typological closeness* for each pair of diagnostic contexts. Typological closeness ranges from 0 to 1 and characterizes the extent to which two contexts trigger the same lexicalizations of a property cross-linguistically. For example, the contexts *_knife* and *_blade* have a typological closeness of 1 for the property of sharpness, since sharpness of knives and blades is consistently lexicalized identically across languages. In comparison, while still falling within the same semantic field, in some languages there are distinct ways of expressing the sharpness of a stick and the pointed shape of a nose. Consequently, the typological closeness we estimated between the contexts *_stick* and *_nose* for the property of sharpness is only 0.82³ (see an illustration in Table 1).

	English	French	Russian	Chinese	Besleney Kabardian (Circassian)
<i>__knife</i>	<i>sharp</i>	<i>tranchant</i>	<i>ostryj</i>	<i>fēnglì, kuài</i>	<i>ž’an</i>
<i>__blade</i>	<i>sharp</i>	<i>tranchant</i>	<i>ostryj</i>	<i>fēnglì, kuài</i>	<i>ž’an</i>
<i>__stick</i>	<i>sharp</i>	<i>pointu, aigu</i>	<i>ostryj</i>	<i>fēnglì, jiānlì, jiān</i>	<i>pamçe</i>
<i>__nose</i>	<i>pointed, sharp</i>	<i>pointu</i>	<i>ostryj</i>	<i>jiān</i>	<i>pamçe</i>

Table 1. Fragment of a Questionnaire for the domain ‘sharp’ filled with English, French, Russian, Chinese, and Besleney Kabardian data.

² An approach going in a similar direction is presented in (Koptjevskaja-Tamm & Sahlgren 2014).

³ For the exact formula of typological closeness and other technical details see (Ryzhova et al. 2016).

Typological closeness of contexts was then compared against the vector similarity for compositional representations of corresponding Russian phrases, for example, the vectors for *ostraja palka* ‘sharp stick’ and *ostryj nos* ‘sharp nose’. We rely on the standard measure of vector similarity, the cosine, which measures how close the directions in which the two vectors point are. We found that already the basic additive model of composition that simply adds the vectors *ostryj* ‘sharp’ and *palka* ‘stick’ to produce a representation of *ostraja palka* ‘sharp stick’ gives a high correlation between typological closeness and distributional vector similarity (65% Pearson correlation for the non-metaphorical usages of *sharp* and 74% for the non-metaphorical usages of *smooth*).

4. The algorithm

Our algorithm of Questionnaire construction rests upon two main assumptions. First, following the Frame approach to lexical typology, we believe that a Questionnaire for lexical typological research should contain types of contexts illustrating different types of word usage (frames). Second, based on the results of our previous research reported in Section 3 and additional experiments that we briefly review below, we assume that we can rely on the distributional semantic modeling technique to reveal the relevant context types automatically on the basis of a single language. We use Russian data in the experiments reported in this paper, but we assume that the language chosen should not affect the result in a major way.

We elaborated and tested the algorithm on typological data for several semantic domains of qualitative features (‘sharp’, ‘straight’, ‘smooth’, and ‘thick’) that were manually collected by experts from the Moscow Lexical Typology group (Luchina 2014; Kashkin & Vinogradova in print; Kozlov & Privizentseva in print; Kyuseva et al. in print). Previous research in the field demonstrates that the types of objects to which these qualities apply are in most cases responsible for cross-linguistic variation in the domains at hand. For example, a language can possess different lexical means to express the thickness of elongated vs. flat objects (‘thick stick’ vs. ‘thick layer’), or to describe the age of human beings vs. artefacts (‘old man’ vs. ‘old clothes’). Hence, the diagnostic contexts that form a Questionnaire are basic constructions consisting of the word denoting the qualitative feature and a nominal expression that it modifies. Similarly to English, qualitative features in Russian are usually expressed with adjectives, and the basic constructions take the form of noun phrases of the type “adjective + noun”, with the adjective usually preceding the noun.

The algorithm that we propose to automatically design Questionnaires for qualitative features takes a list of Russian adjectives as an input and runs separately for every adjective from the list. The algorithm comprises the following steps:

1. collecting a set of nouns appearing no less than ten times next to the adjective in question in the main subcorpus of the Russian National Corpus (RNC, <https://ruscorpora.ru>);
2. computing a vector representation for every noun phrase (“adjective + noun” from the list collected at the previous stage);
3. clustering the distributional space of noun phrase vectors;
4. extracting three core elements from every cluster and eliminating all groups containing fewer than three elements.

Because Russian has a rich inflectional morphology, we use lemmas instead of word forms to collect a list of nouns and to compute all vector representations. We compose vectors for noun phrases from the co-occurrence vectors for every constituent using the simple additive composition model (Mitchell & Lapata 2010). To compute co-occurrence vectors, we count the occurrences of the 10 000 most frequent (according to the Russian National Corpus (RNC main subcorpus)) content words near the target lemma (within the context window of ± 5 content words) in the RNC. To these raw co-occurrence vectors we apply the positive pointwise mutual information weighting scheme and reduce the dimensionality of the vector space from 10 000 to 300 dimensions using the singular value decomposition technique. We cluster the resulting distributional space with the hierarchical clustering algorithm that determines the optimal number of clusters automatically. To extract the core elements, we compute an average vector for every cluster and choose three noun phrases whose vector representations are the closest to the class centroid according to the cosine similarity metric.

To evaluate the resulting Questionnaires, we manually marked up the lists of noun phrases collected in the first stage of the algorithm’s performance. For every noun phrase we indicated the frame it represented and then computed precision and recall for automatically designed Questionnaires. The recall values range from 0.733 to 1 for different semantic fields, implying that the Questionnaires included the vast majority of context types relevant for a domain. The precision values were in the 0.675 - 0.884 interval, showing that the clusters were quite homogeneous. See Ryzhova & Paperno (in print) for more details.

Since the results of the quantitative evaluation are sufficiently high, we assume that this methodology can help to create typological Questionnaires for a wide range of lexical domains, and the resulting Questionnaires should be more fine-grained and more useful for cross-linguistic semantic comparison of lexical data than existing wordlists.

5. Resulting Questionnaires: overview and error analysis

5.1 Overview

Following the method outlined above, we produced Questionnaires of adjective meanings based on the 100 most frequent adjectives in Russian. Adjective frequencies used for selection were taken from the fiction subcorpus⁴ of the Russian National Corpus, as reported in (Lyashevskaya & Sharov 2009).

In the Questionnaires released with this paper, we list classes of usages for each input adjective of Russian. Each class is assigned an arbitrary identifying number and illustrated by three phrases along with the phrases' typicality scores for the given class. The typicality scores were computed as cosine similarity between the phrase vector and the class centroid. Each phrase is represented by lemmatized forms of the adjective and the noun separated by an underscore symbol (" _"). Note that lemmatization breaks the expression of agreement since the dictionary form of all adjectives is masculine. For example, the Questionnaire for *ščastlivyj* 'happy' contains a lemmatized entry *ščastlivyj_vstreča* 'happy encounter' with the adjective in a masculine form; of course, any natural texts will only use patterns with full agreement, such as *ščastlivaja* [nominative singular feminine] *vstreča*.

To make the set of Questionnaires easier to use, we divided the adjectives into several classes, using an automated clustering of adjective vectors followed by manual adjustments. The classes include adjectives of age, size, color, comparison, direction, location properties, order, social value, personality, emotional value, time, speed, temperature, and weight. Within the adjectives of size, we additionally group those that correspond to specific dimensions: depth, height, length, and width, as opposed to those qualifying size in general (e.g. *bol'šoj* 'big'). There are also 13 adjectives that do not fit well into any of these natural classes and are classified as 'other'. We naturally find borderline cases where some usages of an adjective could be attributed to a different semantic class than most usages. The semantic classification is therefore not intended to bear an independent scientific value and is applied only for the ease of use of our automatically constructed Questionnaires, as adjectives with related meanings are grouped in the same class.

Our work is intended to be evaluated where possible against reference data on lexical typology from the Moscow Database of Qualitative Features with Russian adjectives and context words used as keys. To enable an accurate comparison, we based our work on Russian corpora, and the Questionnaires contain Russian vocabulary in their entries. For

⁴Non-fiction is much less representative of everyday language usage than fiction. Word frequencies in non-fiction texts are skewed towards the official register, with *rossijskij* 'Russian' and *gosudarstvennyj* 'belonging to the state' being among the most common adjectives, making it to the top 15 list. Fiction gives a more natural frequency distribution.

illustrative purposes and to facilitate the adoption of our work for typological and lexicographic practice, we translated several of the Questionnaires (specifically, the *age* group) into English. The generated Questionnaires are available online:

→ <https://sites.google.com/site/denispaperno/papers/questionnaires.zip>.

5.2 Known errors

Both the selection of the adjectives and Questionnaire construction were carried out without manual intervention. Inevitably, the automatic procedure leads to some errors; for instance, the inclusion of adjectives ‘Soviet’ and ‘Russian’ in our list of frequent adjectives is an artifact of the reference corpus. The Questionnaires generated for them can nonetheless be useful for typological or lexicographic work. For example, one can think of *ruskij* ‘Russian’ as a placeholder for the ethnonym adjective ‘X’ in language X. In this case different contexts in the Questionnaire for ‘Russian’ can be useful to reveal restrictions in usage of other ethnonym adjectives. To cite one distinction highlighted by the ‘Russian’ Questionnaire and relevant for the non-equivalent analogs of ‘Russian’, it is an enlightening semantic fact that an army or a fleet can be British but a language or a dress can only be English.

Some errors were introduced during Questionnaire construction, especially at preprocessing steps. We note multiple instances of incorrect lemmatization such as the missing ending in *duš* instead of the correct *duša* ‘soul’. These cases should not constitute a major issue in practice since any linguist with knowledge of Russian will be able to immediately spot and correct them. We therefore warn future users about the existence of such glitches in our Questionnaires.

5.3 Initial qualitative analysis of the questionnaires

The Questionnaires created by our system tend to be quite fine-grained. For example, the Questionnaire produced for ‘warm’ (Russian *teplyj*) distinguishes 9 different classes of usages, presented in Table 2. These groups of contexts detect many situations that are known to be typologically distinct. The method captures two frames of temperature evaluation out of the three suggested in (Koptjevskaja-Tamm 2015): the TACTILE (water, food and drinks, body parts) vs. the AMBIENT temperature (weather objects, seasons, times of day). As for the third domain, that of the PERSONAL-FEELING temperature (cf. the English *I am hot*), it is quite expectedly absent from our list, because the related meanings cannot be expressed with an attributive construction in Russian. However, cluster 7 (clothes) relates to this frame in a metonymic fashion: applied to the nouns denoting

clothes, the Russian *teplyj* means ‘helping to keep a comfortable PERSONAL-FEELING temperature when the ambient is cold’. In addition to the frames of temperature terms’ direct usages, the method captures their most common extended meanings, such as metaphorical social and emotional warmth, clusters 3 (‘warm company’, ‘kind (literally ‘warm’) concern’) and 9 (‘heart’ and ‘soul’) respectively. To compare, the Intercontinental Dictionary Series wordlist (Key & Comrie 2007) contains only one concept representing the whole ‘warm’ domain.

1: substances	<i>struja</i> ‘flow’	<i>vozdux</i> ‘air’	<i>voda</i> ‘water’
2: weather objects	<i>solnce</i> ‘sun’	<i>nebo</i> ‘sky’	<i>tuman</i> ‘mist’
3: social warmth	<i>kompanija</i> ‘company’	<i>no</i> ‘but’	<i>učastie</i> ‘concern’
4: food	<i>moloko</i> ‘milk’	<i>xleb</i> ‘bread’	<i>vodka</i> ‘vodka’
5: times of day	<i>utro</i> ‘morning’	<i>večer</i> ‘evening’	<i>noč</i> ‘night’
6: seasons	<i>vesna</i> ‘spring’	<i>osen</i> ‘autumn’	<i>zima</i> ‘winter’
7: clothes	<i>pal'to</i> ‘coat’	<i>kofta</i> ‘blouse’	<i>kurtka</i> ‘jacket’
8: human body parts	<i>ladon</i> ‘hand’	<i>palec</i> ‘finger’	<i>plečo</i> ‘shoulder’
9: human body parts (metaphorical)	<i>serdce</i> ‘heart’	<i>duša</i> ‘soul’	<i>sleza</i> ‘tear’

Table 2. Example of a generated Questionnaire with usage classes for *teplyj* ‘warm’.

The Questionnaires largely reflect the taxonomy of objects that the adjectives can describe, and for adjective meanings that have been studied cross-linguistically, our Questionnaires do make typologically attested distinctions between usages. To give one more example, the Questionnaire for *tolstyj* ‘thick’ differentiates the thickness of flat objects, long objects and fat humans, and these distinctions are indeed typologically relevant (Kozlov & Privizentseva in print).

We note that, somewhat surprisingly, a meaningful Questionnaire was also constructed for the adjective *nužnyj* ‘necessary’. This was not expected because *nužnyj* is predominantly used predicatively and differs in its distribution from most adjectives. Still, the algorithm managed to separate usages that seem to trigger different translation equivalents of *nužnyj* in English, distinguishing among others between usages such as *nužnaja vera* ‘(much-) needed faith’, *nužnyj dokument* ‘required document’, *nužnaja minuta* ‘right minute’, and *nužnoe dokazatel'stvo* ‘necessary evidence’.

Sometimes the classification of the adjective usages in a Questionnaire is too fine-grained and contains more classes than can be reasonably expected to show cross-linguistic differences in lexicalization. The extreme example here is ‘new’ (Russian *novyj*), for which our algorithm predicted 91 different classes of usage; among other things, the generated Questionnaire can be interpreted as distinguishing between novel church

officials, new bosses, new hired managers, new monarchs, newly appointed military officials, and new judicial officials as all potentially requiring different lexicalizations of novelty. There is at least some truth to these hypothesized distinctions, as suggested by the existence of specialized adjectives such as the Russian *novopomazannyj* ‘newly crowned’, *novorukopoložennyj* ‘newly ordained’ and *novonaznačennyj* ‘newly appointed’ - all morphologically complex but lexicalized. We note however that the case of *novyj* is unique, probably due to the high frequency and extremely general semantics of ‘new’, and that all other adjectives have considerably fewer classes in our Questionnaires. An average Questionnaire contains 33 classes and the median number of classes in a Questionnaire is only 13. Three quarters of our Questionnaires include 20 or fewer classes of usages. For three adjectives, *poxožij* ‘similar’, *pozdnij* ‘late’, and *uverennyj* ‘sure’ the algorithm managed to identify only one class of usages.

6. Conclusion

We have presented an account of 100 automatically generated lexical Questionnaires for studying diverse usages of common quality-denoting vocabulary, as expressed by adjectives in English, Russian, and similar languages.

We believe that the Questionnaires presented will be immediately useful for linguists working on lexical data. In lexicography, they can provide input for typologically oriented dictionaries whose creation is of special importance for low-resourced and endangered languages. In turn, such dictionaries could become a basis for extensive cross-linguistic research in the future. For lexical typologists, our Questionnaires could be an insightful starting point saving much time and effort that are typically spent in the process of Questionnaire construction.

Of course, the resulting Questionnaires are not absolutely free from drawbacks. First, overly detailed clusterings could cause practical difficulties during fieldwork, as a Questionnaire for an interview with a consultant should be as short as possible. In future research, we plan to improve our method to reduce the number of context classes in overly long Questionnaires. Second, context-based Questionnaires require a non-trivial amount of work as they have to be translated into the languages studied. The translation process could also be automatized at least for languages with sufficient resources (see Ryzhova et al. 2018), but the translation algorithms we have tried so far require further improvements. Finally, our Questionnaires reflect some peculiarities of the Russian language and culture. From the lexical point of view, some nouns that appear in the final clusterings are culture specific (cf. *vodka* ‘vodka’ or *pal'to* ‘coat’ in Table 2), though the classes themselves are typologically relevant. From the syntactic point of view, the method

in its current version is restricted to the meanings that can be expressed in Russian with an attributive construction. We will address both issues in our future research.

We hope that our automatically produced Questionnaires will be adopted by the linguistic community and will prove useful for lexical research of various kinds.

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Appendix A. Adjectives used for the creation of Questionnaires

age: *molodoj* ‘young’, *staršij* ‘elder’, *novyj* ‘new’, *staryj* ‘old’

color: *belyj* ‘white’, *sinij* ‘blue’, *želtij* ‘yellow’, *černyj* ‘black’, *seryj* ‘grey’, *zelenyj* ‘green’, *krasnyj* ‘red’, *temnyj* ‘dark’.

comparison: *ravnyj* ‘equal’, *raznyj* ‘different’, *poxožij* ‘similar’, *podobnyj* ‘analogous’

direction: *levyj* ‘left’, *pravyj* ‘right’

emotional evaluation: *čužoj* ‘foreign’, *krasivyj* ‘beautiful’, *prekrasnyj* ‘wonderful’, *dobryj* ‘kind’, *milyj* ‘nice’, *rodnoj* ‘native’, *dorogoj* ‘dear’, *nastojščij* ‘real’, *ščastlivyj* ‘happy’, *xorošij* ‘good’, *nužnyj* ‘necessary’, *strašnyj* ‘horrible’, *jasnyj* ‘clear’, *ploxoj* ‘bad’

location properties: *blizkij* ‘close’, *dalekij* ‘faraway’, *tixij* ‘quiet’

order: *poslednij* ‘last’, *sledujuščij* ‘next’

personality: *spokojnyj* ‘calm’, *uverennyj* ‘confident’, *veselyj* ‘funny’

size: *bolšoj* ‘big’, *krupnyj* ‘large’, *nebolšoj* ‘small’, *ogromnyj* ‘huge’, *malen'kij* ‘little’

depth: *glubokij* ‘deep’, *melkij* ‘shallow’

height: *nizkij* ‘low’, *vysokij* ‘high’

length: *dlinnyj* ‘long’, *korotkij* ‘short’

width: *širokij* ‘wide’, *tolstij* ‘thick’, *tonkij* ‘thin’

social value: *čelovečeskij* ‘human’, *strannyj* ‘strange’, *detskij* ‘childish’, *osobyj* ‘special’, *svobodnyj* ‘free’, *glavnyj* ‘main’, *vажnyj* ‘important’, *interesnyj* ‘interesting’, *prostoj* ‘simple’, *velikij* ‘great’, *izvestnyj* ‘well-known’, *ruskij* ‘Russian’, *voennyj* ‘military’, *ser'eznyj*

‘serious’, *živoj* ‘living’, *lučšij* ‘best’, *sobstvennyj* ‘own’, *ženskij* ‘feminine’, *obščij* ‘common’, *sovetskij* ‘Soviet’

speed: *bystryj* ‘quick’, *skoryj* ‘fast’

temperature: *gorjačij* ‘hot’, *bolodnyj* ‘cold’, *teplyj* ‘warm’

time: *byvšij* ‘former’, *pozdnij* ‘late’, *nočnoj* ‘happening at night’, *rannij* ‘early’, *dolgij* ‘long’

weight: *legkij* ‘light’, *tjaželyj* ‘heavy’

other: *čistyj* ‘clean’, *polnyj* ‘full’, *celyj* ‘whole’, *golyj* ‘naked’, *pustoj* ‘empty’, *železnyj* ‘iron’, *gotovyj* ‘ready’, *znakomyj* ‘familiar’, *mokryj* ‘wet’, *edinstvennyj* ‘only’, *zolotoj* ‘golden’, *sil’nyj* ‘strong’, *obyčnyj* ‘usual’.

References

- Abbi, Anvita. 2001. *A manual of linguistic field work and structures of Indian languages*. Vol. 17. München: Lincom Europa.
- Apresjan, Juri. 2000. *Systematic lexicography*. Translated from Russian by K. Windle. Oxford: Oxford University Press.
- Berlin, Brent, & Kay, Paul. 1969. *Basic color terms: Their universality and evolution*. Berkeley: University of California Press.
- Bowern, Claire. 2015. *Linguistic Fieldwork: A Practical Guide*. Basingstoke & New York: Palgrave Macmillan.
- Griffiths, Thomas & Steyvers, Mark & Tenenbaum, Joshua. 2007. Topics in semantic representation. *Psychological Review*, 114(2), 211-244.
- Haspelmath, Martin & Tadmor, Uri (eds.). 2009. *Loanwords in the World’s Languages: A Comparative Handbook*. Berlin: Walter de Gruyter.
- Herbelot, Aurélie & Vecchi, Eva Maria. 2015. Building a shared world: Mapping distributional to model-theoretic semantic spaces. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, 22-32.
- Kashkin, Egor & Vinogradova, Olga. (in print). The domain of surface texture. In Rakhilina, Ekaterina & Reznikova, Tatiana (eds.). *The Typology of Physical Qualities*. Amsterdam: John Benjamins Publishing Company.
- Kay, Paul & Berlin, Brent & Maffi, Louisa & Merrifield, William R. & Cook, Richard. 2007. *World Color Survey*. Stanford: Center for the Study of Language and Information.
- Key, Mary Ritchie & Comrie, Bernard. 2007. *Intercontinental dictionary series*. Online version: <http://lingweb.eva.mpg.de/cgi-bin/ids/ids.pl>.
- Koptjevskaja-Tamm, M. (ed.). 2015. *The Linguistics of Temperature*. John Benjamins Publishing Company.
- Koptjevskaja-Tamm, Maria & Rakhilina, Ekaterina & Vanhove, Martine. 2016. The semantics of lexical typology. In Riemer, Nick (ed.), *The Routledge Handbook of Semantics*, 434–454.
- Koptjevskaja-Tamm, M., & Sahlgren, M. 2014. Temperature in the Word Space : Sense exploration of temperature expressions using word-space modeling. In Szmrecsanyi, Benedikt & Wälchli, Bernhard (eds.), *Linguistic variation in text and speech, within and across languages*, 231–267. Berlin/Boston: Walter de Gruyter.

- Kozlov, Alexey & Privizentseva, Maria (in print). Typology of dimensions. In Rakhilina, Ekaterina & Reznikova, Tatiana (eds.). *The Typology of Physical Qualities*. Amsterdam: John Benjamins Publishing Company.
- Kyuseva, Maria & Parina, Elena & Ryzhova, Daria. (in print). Methodology at work: semantic fields «sharp» and «blunt». In Rakhilina, Ekaterina & Reznikova, Tatiana (eds.). *The Typology of Physical Qualities*. Amsterdam: John Benjamins Publishing Company.
- Kyuseva, Maria & Reznikova, Tatiana & Ryzhova, Daria. 2013. Tipologičeskaja baza dannyx adjektivnoj leksiki [A typologically oriented database of qualitative features]. In Selegei, V. P. & Belikov, V. I. & Boguslavskij, I. M. & Dobrov, B. V. & Dobrovolskij, D. O. & Zakharov, L. M. & Iomdin, L. L. & Kobozeva, I. M. & Kozerenko, E. B. & Krongauz, M. A. & Laufer, N. I. & Lukashevich, N. V. & McCarthy, D. & Nivre, J. & Osipov, G. S. & Raskin, V. & Segalovich, I. V. & Hovy, E. & Sharov, S. A. (eds.). *Kompjuternaya lingvistika i intellectual'nyye tehnologii* [*Computational Linguistics and Intellectual Technologies*]. Volume 1. 419–430. Moscow: Russian State University of Humanities.
- Lahaussais, Aimée. 2019. The TULQuest linguistic questionnaire archive. In Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 31-44.
- Landauer, Thomas K. & Dumais, Susan T. 1997. A solution to Plato's problem: The latent semantic analysis theory of acquisition, induction, and representation of knowledge. *Psychological Review*. 104 (2). 211-240.
- Lenci, Alessandro. 2008. Distributional semantics in linguistic and cognitive research. *Rivista di Linguistica* 20.1. 1-31.
- List, Johann-Mattis & Mayer, Thomas & Terhalle, Anselm & Urban, Matthias. 2014. CLICS: Database of Cross-Linguistic Colexifications. Marburg: Forschungszentrum Deutscher Sprachatlas (Version 1.0, online available at <http://CLICS.lingpy.org>, accessed on 2018-6-23).
- Luchina, Elena. 2014. Puti grammatikalizacii leksem so značeniem 'prjamoj' [Grammaticalization paths of lexemes with the meaning 'straight'] (Diploma paper). Lomonosov Moscow State University, Moscow.
- Lund, Kevin & Burgess, Curt. 1996. Producing high-dimensional semantic spaces from lexical co-occurrence. *Behavior Research Methods, Instruments, & Computers*, 28 (2), 203–208.
- Lyashevskaya, Olga & Sharov, Sergey. 2009. *The frequency dictionary of modern Russian language*. Moscow: Azbukovnik.
- Majid, Asifa. 2015. Comparing lexicons cross-linguistically. In Taylor, John R. (Ed.), *The Oxford Handbook of the Word*. Oxford: Oxford University Press. 364–379. <https://doi.org/10.1093/oxfordhb/9780199641604.013.020>
- Majid, Asifa & Bowerman, Melissa & Van Staden, Miriam & Boster, James S. 2007. The semantic categories of cutting and breaking events: A crosslinguistic perspective. *Cognitive Linguistics* 18, no. 2. 133-152.
- Mitchell, Jeff & Lapata, Mirella. 2010. Composition in Distributional Models of Semantics. *Cognitive Science* 34(8). 1388–1429. <https://doi.org/10.1111/j.1551-6709.2010.01106.x>
- Östling, Robert. 2016. Studying colexification through massively parallel corpora. In Koptjevskaja-Tamm, Maria & Juvonen, Paeivi (eds.). *The Lexical Typology of Semantic Shifts*. Berlin/Boston: Walter de Gruyter GmbH. 157–176.
- Paperno, Denis & Baroni, Marco. 2016. When the whole is less than the sum of its parts: How composition affects PMI values in distributional semantic vectors. *Computational Linguistics* 42, no. 2. 345-350.

- Plungian, Vladimir & Rakhilina, Ekaterina. 2013. Where do speed adjectives come from? *Russian Linguistics*, 37(3). 347–359. <https://doi.org/10.1007/s11185-013-9117-7>.
- Rakhilina, Ekaterina & Reznikova, Tatiana. 2016. A frame-based methodology for lexical typology. In Koptjevskaja-Tamm, Maria & Juvonen, Paeivi (eds.). *The Lexical Typology of Semantic Shifts*. Berlin/Boston: Walter de Gruyter GmbH. 95–129.
- Ryzhova, Daria & Kyuseva, Maria & Paperno, Denis. 2016. Typology of Adjectives Benchmark for Compositional Distributional Models. In *Proceedings of the Language Resources and Evaluation Conference*. Paris: European Language Resources Association (ELRA). 1253-1257
- Ryzhova, Daria & Melnik, Anastasia & Yershov, Iliya & Panteleeva, Irina & Paperno, Denis & Singh, Yajuvendra & Sobolev, Mark. 2018. Automatic data collection in lexical typology. In *Proceedings of the international conference on Computational Linguistics and Artificial Intelligence "Dialog-2018"*. [Electronic publication: http://www.dialog-21.ru/media/4259/ryzhova_ershov_melnik.pdf]
- Ryzhova, Daria & Paperno, Denis. (in print). Constructing typological questionnaire with distributional semantic models. In Rakhilina, Ekaterina & Reznikova, Tatiana (eds.). *The Typology of Physical Qualities*. Amsterdam: John Benjamins Publishing Company.
- Sutton, Peter & Walsh, Michael. 1987. *Wordlist for Australian languages*. Canberra: Australian Institute of Aboriginal Studies.
- Wälchli, Bernhard, & Cysouw, Michael. (2012). Lexical typology through similarity semantics : Toward a semantic map of motion verbs. *Linguistics* 50(3). 671–710.

Using questionnaires as a tool for comparative linguistic field research: Two case studies on Javanese

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In this paper, we discuss how written questionnaires for targeted constructions can be a beneficial tool for comparative linguistic field research through two case studies on Javanese (Austronesian; Indonesia). The first case study is based on a questionnaire designed to elicit how a language or a dialect expresses the semantic meaning of modality (Vander Klok 2014); we show how it can be implemented in three different ways for comparative linguistic field research. The second case study is based on a questionnaire which investigates the morphosyntax of polar questions across four Javanese dialects; we show how items can be designed to maximize direct comparison of features while still allowing for possible lexical, phonological, or morphosyntactic variation. Based on these two studies, we also address methodological challenges that arise in using questionnaires in comparative linguistic field research and offer best practices to overcome these challenges.

Key words: Fieldwork methodology; Questionnaires; Comparative linguistic studies; Javanese

1. Introduction

The field linguist today has a wide variety of tools to draw on in assembling a toolkit; these tools include participatory observation, recordings of narratives or natural conversation, interviews, focus groups, elicitation, storyboards, questionnaires, and their variants.¹ Depending on the subfield of linguistics or type of research questions being investigated, the field linguist might also include various physiological experimental methods such as eye tracking, ERPs (event-related potentials) or ultrasound.² Given the relative affordability and portability of high-quality equipment to implement all of these tools, the field linguist is then faced with the selection of the most appropriate tool(s) for data collection at hand based on the research question, the research location and timing. Various factors will play a role in this decision: what the research project is targeting; how many speakers it is possible to work with; the time-frame of the project, among others.

The focus of this paper is to address how and when *written questionnaires for targeted constructions* can be the right tool, at the right place and the right time in a fieldwork setting. The term ‘questionnaires’ in this paper refers to a set of questions designed to elicit a constrained set of answers from multiple respondents. We use ‘targeted constructions’ in the sense of Burton and Matthewson (2015) whereby the written questionnaire is designed to target a specific linguistic phenomenon or a set of linguistic phenomena. This is further discussed in Section 2 in the context of situating the use of questionnaires for targeted constructions in comparative linguistic field research within a typology of written questionnaires.

We propose that questionnaires can be a particularly useful tool when the research engages with comparative linguistic fieldwork. We investigate this issue in Section 3 through two case studies on Javanese, an Austronesian language spoken mainly in Java, Indonesia, known for a high degree of dialectal variation (e.g., Hatley 1984). The first case study concerns a questionnaire designed to elicit how a language or a dialect expresses the semantic meaning of modality (Vander Klok 2014); we show how it can be implemented in three different ways. The second case study is based on a questionnaire which

¹This list is not exhaustive, nor do we assume that these tools are necessarily discrete. For instance, written questionnaires can be used orally as elicitation. Further, some methods such as storyboards, combine the use of narration and elicitation (see Burton and Matthewson 2015 for details on storyboard methodology).

²An excellent introduction to experimental methods for linguists is Arunachalam (2013) as well as articles in Podesva & Sharma (2013). While they do not explicitly address using these methods in a fieldwork setting, one can see how they can be adapted. See also Krifka (2011) for an overview of experimental methods from a semantics perspective and Gick (2004) for ultrasound use for phonetic studies.

investigates the morphosyntax of polar questions in different Javanese dialects (Vander Klok, Ahsanah & Sayekti 2017).³

Conducting fieldwork with any tool is never without challenges. In Section 4, we address some challenges with conducting comparative linguistic fieldwork, including maximizing direct comparison of features while still allowing for lexical, phonological, or morphosyntactic variability across dialects; determining which language or dialect is best included at different stages of the questionnaire; and recruiting participants of said dialect or variety. In Section 5, we discuss ways in which field linguists can prepare for and overcome the above challenges for comparative linguistic field research, covering the design, metadata, language/variety selection, instructions, and implementation of questionnaires for such purposes. This section will be most useful for either new field linguists or those working specifically on comparative linguistic studies. However, since these suggestions for best practices are broadly applicable to most fieldwork settings, we also refer the reader to other current resources. Section 6 concludes.

2. The place of written questionnaires for targeted constructions within a typology of questionnaires

Questionnaires represent an important tool utilized not only by field linguists when collecting primary linguistic data from a range of speakers (Bower 2015:92), but also by researchers across a variety of linguistic subdisciplines (cf. Dollinger 2015:12). The aim of this section is to underline the inherent advantages and disadvantages of questionnaires (Section 2.1) and then contextualize how *written questionnaires for targeted constructions* fit into a typology of written questionnaires (Section 2.2).

A brief note is first necessary on the use of the terms ‘survey’ vs. ‘questionnaire’. While some researchers, such as Dollinger (2015), use *questionnaire* exclusively, others such as Shilling (2013) use the term *survey* exclusively. We suggest that it is useful to make a distinction between written *surveys* and *questionnaires*. Overall, our view is that the main goal of written questionnaires is to gather linguistic data, whereas the primary goal of *surveys* is to collect information on language demographics, use, attitudes, and language backgrounds. This distinction is in line with how the term ‘survey’ is used by SIL (e.g., Nahhas 2007), the ILI (Indigenous Language Institute; Linn 2004), or the FPCC in Canada (First Peoples’ Cultural Council; Franks & Gessner 2013). These organizations

³ These case studies focus on the use of questionnaires as a tool for comparative field research; as such the results are not discussed in detail. See Vander Klok (2013b) for results of the modal questionnaire in Paciran Javanese, and the results of the questionnaire of polar questions are partially presented in Vander Klok (2017).

have developed surveys primarily on language attitudes and use for the purposes of language planning and obtaining funding. Of course, some questionnaires that focus on collecting data on linguistic phenomena might also necessarily gather information on the participants and/or their language use or attitudes; thus, what we consider to be typical ‘survey’ data is not excluded from questionnaires.⁴

2.1 Inherent advantages and disadvantages of questionnaires

Questionnaires have a number of inherent advantages, including an easy setup for comparative studies, the possibility of gathering data from multiple participants/respondents, and options for different types of implementation. Concerning the latter, a *written questionnaire for targeted constructions* can, for instance, be implemented as an acceptability judgment task (i.e., yes-no task, Likert scale rating task, Magnitude Estimation task, Thermometer task; see e.g., Schütze & Sprouse 2013), a fill-in-the-blank task, a translation task, or a correction task. We will discuss some of these implementations in Section 3.

One inherent disadvantage of written questionnaires is that they are written, therefore only reflecting one ‘mode’ of language use, and limiting the collection of data for phonetic or phonological studies. This can be solved by recording the sessions and by using the questionnaire as the basis for an oral elicitation task.⁵ Other possible limitations discussed in Schilling (2013:102-103)—such as ordering effects; the fact that participants could confound grammaticality with ‘correctness’; the fact that the questionnaire could create an artificial setting where respondents do not respond in the way they truly use language—are not viewed as inherent disadvantages, but rather methodological challenges. We discuss some of these in Section 4.

What we aim to show in this paper is that questionnaires can be productively used to collect data in the field for comparative linguistic research. Overall, whether the goal is typological comparison, dialectology, theoretical inquiry, or descriptive documentation, questionnaires are useful field tools, as long as care is taken in their development, implementation, and interpretation.

⁴ We do not go into detail regarding surveys on individual language speaker metadata, but we do outline the relevant metadata we consider to be required for comparative research from a cross-dialectal perspective in Section 5.5.

⁵ In sociolinguistics, questionnaires were traditionally conducted as face-to-face interviews, since for instance the *Atlas linguistique de la France* by Gilliéron & Edmont (1901-1910); see Dollinger (2015: Chapter 2) for a historical overview.

2.2 How do written questionnaires for targeted constructions fit into a typology of questionnaires?

Concerning a typology of questionnaires, Dollinger (2015:12) identifies three criteria whereby questionnaires can be classified: by type of reporting, type of information sought, and subject area, as summarized in (1). For Dollinger's research focus, the classification by subject area is based on questionnaires directly relevant to social dialectology and the use of written questionnaires.

(1) Typology of written questionnaires based on Dollinger (2015:12)

Classification 1. Type of reporting

- i. Community-reporting
- ii. Self-reporting

Classification 2. Type of information sought

- i. Language attitudes and perceptions
- ii. Linguistic behaviour

Classification 3. Type of subject area

- i. Questions concerning language attitudes and perceptions
- ii. Questions concerning regional language variation and social language variation
- iii. Questions using acceptability judgments of grammaticality

According to this typology, although Dollinger presents each classification as distinct, it is clear that Classifications 2 and 3 overlap considerably. For instance, questionnaires concerning regional language variation and social language variation could easily involve both types of information sought in (1). Additionally, the third type within Classification 3, 'Questions using acceptability judgments of grammaticality', does not fit well within the classification by 'subject area', as acceptability judgments are an implementation type rather than a subject area.⁶ Note further that under the proposed distinction between *questionnaires* and *surveys*, the subject area relating to questions concerning language attitudes and perceptions could be considered a survey.

We return to *written questionnaires for targeted constructions* as defined in this paper to see how these questionnaires fit into Dollinger's typology. *Written questionnaires for targeted constructions*, as stated above in Section 1, are a set of questions designed to elicit

⁶ Dollinger's (2015:12) description of 'Questions using acceptability judgments of grammaticality' underlines the implementation and not the 'subject area' of questionnaires. He writes: "...originally a mainstay in generative linguistics on a binary scale, WQs [written questionnaires] have come to be used on gradient scales outside the generative domain since Bard et al.'s (1996) Magnitude Estimation Method."

a set of answers from multiple respondents based on a particular linguistic research question or hypothesis. According to Dollinger's typology in (1), using a questionnaire in this manner would potentially satisfy either sub-type of reporting under Classification 1 and would be classified under 'linguistic behavior' in terms of the type of information sought in Classification 2. However, this type of questionnaire does not appear under the 'Classification 3, type of subject area' since it is not required to be implemented using acceptability judgments, nor is it appropriate to leave this classification open. Concerning the implementation, we purposely leave this choice open, as it one of the inherent advantages of using a questionnaire.

Given the above issues, we propose a revised typology of questionnaires in (2). A new addition is 'type of implementation' as a separate classification, in line with this being an inherent advantage of written questionnaires. Further, given the considerable overlap between 'information sought' and 'subject type', we collapse these two into one criterion as 'type of information sought', now under Classification 2. We also allow for the type of self-reporting to be mediated (e.g. by a research assistant), or non-mediated (the respondent directly fills out the questionnaire without any assistant present, such as online). Finally, we acknowledge that a written questionnaire could be identified with one or more of the subtypes within each of these classifications. For example, the same questionnaire could inquire about language attitudes as well as linguistic phenomena or it could be implemented using different types of implementation (as long as the content is the same); see our first case study in Section 3.3 for an example.

(2) Revised typology of written questionnaires

Classification 1. Type(s) of reporting

- i. Community-reporting
- ii. Self-reporting (Mediated vs. Non-mediated)

Classification 2. Type(s) of information sought

- i. Language attitudes and perceptions
- ii. Social language variation
- iii. Linguistic phenomena, including descriptive documentation

Classification 3. Type(s) of implementation (non-exhaustive list)

- i. Acceptability judgments of grammaticality or felicity
- ii. Fill-in-the-blank
- iii. Translation
- iv. Correction, etc.

Lastly, while our focus is on questionnaires, we take it that no single tool in the toolkit can satisfy every research situation and every researcher's needs. For instance, in response to Featherston's (2007) position paper that experimental methods such as acceptability

judgment tasks are necessary beyond data collected from introspection, Bornkessel-Schlesewsky & Schlewsky (2007:331) offer additional experimental methods and write:

“From an empirical perspective, there cannot be ‘one perfect method’ for the investigation of linguistic knowledge. It is important to recognize the limitations of individual methods and to capitalize upon the insights that can be gained from their combination.”

Bowern (2015:85) also argues in her comprehensive fieldwork manual for the merits of elicitation beyond text collections:

“...some aspects of a language are only discoverable through elicitation—they will appear in texts so seldom that it will be almost impossible to get enough information about them”.

A final example from Dollinger (2015:53), who advocates for the use and validity of written questionnaires in social dialectology, underlines the practicality of having multiple methods at our disposal. He argues that,

“...a combination of methodologies would possibly lead to the most reliable results as the advantages and disadvantages of each method would become apparent and, ideally, balanced by another method”.

In line with these perspectives, our main goal is to show how and when questionnaires can be useful in conducting fieldwork.

3. Two case studies on the use of questionnaires for comparative linguistic field research

We discuss in this section two case studies on Javanese (Austronesian) which use questionnaires as the methodology for comparative linguistic field research. The first case study uses a questionnaire on modality (Vander Klok 2013b) and discusses three ways we have implemented this questionnaire for comparative research across two Javanese varieties. The second case study is based on a questionnaire that investigates the morphosyntax of polar questions in four different Javanese varieties (Vander Klok, Ahsanah & Sayekti 2017). These written questionnaires target specific linguistic phenomena: the first targets how the semantics of modality is lexically expressed for any language, and the second targets how polar questions are morphosyntactically well-formed in Javanese.

Before discussing the case studies themselves in Sections 3.3 and 3.4, we first provide a brief background of the relevant details on Javanese in Section 3.1. We further specify why questionnaires are an advantageous method to use with this language for comparative linguistic research in Section 3.2.

3.1 Javanese (Austronesian)

Javanese is an Austronesian language spoken primarily on the island of Java, Indonesia by some 70 million people.⁷ Javanese has a high degree of variation across dialects in all areas of the grammar (e.g. Hatley 1984; Wedhawati et al. 2006; Hoogervorst 2010). Even though it is the Austronesian language with one of the highest number of native speakers, it remains underdocumented and understudied, particularly with respect to its dialectal variation (Conners & Vander Klok 2016). It is mainly spoken in the provinces of Central Java and East Java and can be divided into three broad dialectal groups: West, Central, and East Javanese (e.g. Hatley 1984). Figure 1 shows the languages spoken on the island of Java and neighboring islands: Sundanese in West Java; Madurese in Madura and East Java; and Balinese in Bali. Indonesian, the national language, is spoken throughout Java and especially in Jakarta, the capital city. Figure 1 also shows Osing and Tenggerese in East Java, Banyumasan in Central Java, and Banten in West Java, which are considered by many to be languages distinct but closely related to Javanese. The dialect spoken in the royal court centers of Yogyakarta and Surakarta/Solo can be referred to as the prestige variety or Standard Javanese given its (historical) influence as well as the fact that it is sanctioned and used across Java in the educational system.⁸

Javanese also has an extensive speech level system – a system of potentially asymmetrical exchange where selection of linguistic features (lexicon, morphology, morphosyntax) is dependent on the relative social status of interlocutors. There are three ‘basic’ levels: *ngoko* ‘low Javanese’, *madya* ‘mid Javanese’, and *krama* ‘high Javanese’ (Poedjosoedarmo 1968; Errington 1988), although *krama* is currently endangered due to a changing socio-cultural environment and influence from Indonesian (see, e.g., Oetomo 1990; Errington 1998; Conners 2010; Zentz 2015).⁹

⁷ According to the 2010 census report, there are 68,044,660 Javanese speakers from age 5 years and above, from a population of 95,217,022 self-identified Javanese people (Kewarganegaraan, Suku Bangsa, Agama dan Bahasa Sehari-hari Penduduk Indonesia – Hasil Sensus Penduduk 2010. Badan Pusat Statistik. 2011. ISBN 978-979-064-417-5). Note that these numbers are based on self-reporting and have been going down (see Abtahian et al. 2016).

⁸ Pertaining to terms concerning language, some use ‘dialect’ to refer to a variety of a language that is characterized by different grammatical features, while ‘variety’ is associated with a group according to some external factor, perhaps geographical or social (e.g., Wardhaugh 2015). For instance, in reference to the external factor of prestige, it may be more appropriate to say “prestige variety” instead of “prestige dialect”. In the Indonesian context, however, these terms can often be used interchangeably since a different geographical area or social setting in Java typically results in different grammatical features. In this case, ‘variety’ or ‘dialect’ can refer to a variant of a language that is (somewhat) mutually intelligible with a variant of the same language.

⁹ Many current Javanese scholars use the term ‘speech level’ or ‘speech styles’ (e.g. Errington 1998) given that there are grammatical differences between the levels (e.g. Wolff & Poedjosoedarmo 1982). As such

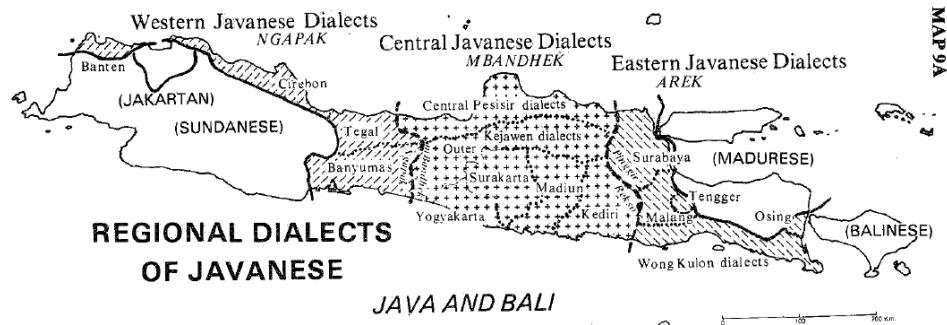


Figure 1. Map of languages and some Javanese dialects spoken on Java, Indonesia. (Hatley 1984: 24, Map 9A)

Among Javanese speakers, there is now widespread bilingualism with Indonesian, which has become—especially in city settings—the language of administration and education. As this is not a case of stable bilingualism (see Abtahian et al. 2016), any linguistic research on Javanese must also consider the role of Indonesian and the language profile of the speakers.

Research on Javanese dialects must therefore take into account a number of linguistic and social layers: Indonesian as the national language; Standard Javanese as the prestige variety; geographical distance from the courtly centers; and an intricate speech level system.

3.2 Why are questionnaires useful in the context of field research on Javanese?

Beyond the inherent advantages of questionnaires as discussed in Section 2, in the case of conducting fieldwork on Javanese specifically, using questionnaires is an advantageous tool for at least two reasons. First, it is fairly easy to run numerous participants given the high number of speakers available and the general willingness of participants. Furthermore, from a comparative linguistic research perspective, questionnaires make it possible to collect comparable sets of answers, or at least always involve the same questions (cf. Bown 2015:92), a necessary condition when studying linguistic phenomena across dialects or varieties of a language.

the speech level system is not simply a socially stratified system, and the terms ‘basi-, meso-, or acrolectal’ as suggested by a reviewer are not appropriate.

3.3 First case study: Questionnaire on modality

The first case study concerns a questionnaire on modality (Vander Klok 2013b, 2014), which was conducted on two East Javanese varieties, one spoken in the village of Paciran, Lamongan Regency, and the other spoken in the city of Malang, Malang Regency. Before discussing how the questionnaire was used as a tool for comparative semantic research across Javanese dialects, we first briefly situate our study within the Javanese language and the linguistic expression of modality.

Javanese is not a heavily inflected language overall (Conners, *In press*). In the verbal paradigm, verbs are marked for voice or focus through prefixation, and there are two inflecting applicative suffixes with a range of functions (Robson 2014:38-54;74-78). Verbs are not grammatically marked for tense, aspect or modality; instead, there is a relatively rich inventory of auxiliaries and adverbs that optionally mark aspect and modality (Robson 2014:54).¹⁰ For instance, the verb *mateni* in (3) does not indicate tense, aspect or mood; it includes information about argument structure including the actor voice prefix *m-* (assimilated in place of articulation to the root *pate* ‘die’) and the applicative suffix *-(n)i*. Instead, the marker *wes* ‘already’ gives information about when this event has taken place relative to a contextually salient reference time.¹¹

- (3) *Pak Suwanan wes mate-ni lampu.* PACIRAN JAVANESE
Mr. Suwanan already AV.die-APPL light

‘Mr. Suwanan has turned off the light.’ (Vander Klok 2012:57)

As for modality, few careful semantic studies have been conducted on Javanese. Research on modality shows that modals in natural language lexically differ in expressing three dimensions: *modal force*, expressing a possibility or necessity modal claim; *modal flavor*, such as epistemic, based on the speaker or agent’s knowledge or deontic, based on a body of rules or regulations; and *modal strength*, expressing a modal claim weaker or stronger than possibility or necessity, such as ‘weak necessity’ (*should* or *ought to* in English).¹²

To our knowledge, Ekowardono et al. (1999) is the most complete study of modals in Standard Javanese. Beyond this study, no formal semantics study exploring both the force and flavor of modals had been conducted prior to our fieldwork. This is likely due to the

¹⁰ The following glosses are used in this paper: AV ‘actor voice’, APPL ‘applicative’, CIRC ‘circumstantial modality’, DEF ‘definite’, DEM ‘demonstrative’, DEON ‘deontic modality’, EPIS ‘epistemic modality’, FUT ‘future’, KE ‘accidental or adversative passive’, NEC ‘necessity’, NMLZ ‘nominalizer’, POS ‘possibility’, PRT ‘particle’, PST ‘past tense’, ROOT ‘root modality’.

¹¹ See Vander Klok and Matthewson (2015) for an account of *wes* as ‘already’ and not the perfect aspect.

¹² For introductions to these dimensions of modality, see, e.g., Palmer (1986), Portner (2009), Hacquard (2011).

difficulty in eliciting nuanced, contextualized semantic judgments. Instead of simply collecting an inventory of occurring lexical terms, we were interested in exploring the lexicalization of the semantic space encoded by those forms, particularly given the importance of modals in the language. Since documentation had already suggested that modality lexically varies considerably across Javanese dialects (e.g. Ekowardo et al. 1999; Robson 2014; Cole et al. 2008), we were also interested in whether other dialects also showed similar variation with Standard Javanese.¹³

In order to facilitate data collection on modality in Javanese, Vander Klok (2013b, 2014) developed a questionnaire designed to elicit how modality is semantically expressed in natural language.¹⁴ The questionnaire on modality has a total of 41 items (33 target and 8 fillers), which are contextualized for semantic (felicity) judgments. This follows the methodology advocated in Matthewson (2004) for semantic fieldwork, which argues that felicity or truth value judgments must be contextualized and that translations cannot be interpreted as linguistic evidence for semantic meaning.

The modal questionnaire was implemented in two different ways for comparative linguistic field research: as an acceptability rating task and a semi-forced choice task in Paciran by the first author; and as a semi-forced choice task in Malang by the second author. We also used elicitation first in a pilot study in Paciran and then as a supplement to the semi-forced choice task in Malang.¹⁵ We outline how these types of implementation were conducted in the following three subsections.

3.3.1 Questionnaire on modality: Elicitation task

The elicitation implementation was used at two different times. In the first case, Vander Klok worked with one native speaker in one instance and a group of three native speakers in a second instance in Paciran in the initial stages of research on the modal questionnaire

¹³ It is beyond the scope of this paper to provide a full inventory of modals in Paciran and Malang Javanese. The most frequent modals in both varieties include: *mesthi* 'EPIS.NEC', *kudu* 'ROOT.NEC', *paleng/paling* 'EPIS.POS', *oleh* 'DEON.POS', and *iso* 'CIRC.POS' (See Vander Klok 2013a for a detailed study on the possibility and necessity modals in Paciran Javanese).

¹⁴ An English version is freely available online for cross-linguistic use, hosted on the Max Planck Institute for Evolutionary Anthropology (MPI EVA) website 'Typological tools for field linguistics' as well as on TULQuest. For MPI EVA, it is found under the sub-heading 'Modality' at <http://www.eva.mpg.de/lingua/tools-at-lingboard/questionnaires.php>; and at TULQuest: <http://tulquest.humanum.fr/fr/node/70>.

¹⁵ A reviewer points out that questionnaires implemented as elicitation sets seem to be no longer questionnaires since elicitation is implemented orally with a researcher and tends to be individual or with a small group, while questionnaires are written and can be either based on self-reporting or working with a researcher, and tends to be with a larger number of respondents. We agree that these are different implementations and can be called elicitation vs. questionnaires, but since the content is the same, we include the elicitation task under the discussion of how the modality questionnaire was conducted.

in 2011. The individual and group elicitation sessions were used as pilot studies in order to fine-tune the discourse contexts, to discard any items that were too confusing, and to ensure that all items were comprehensible. These pilot studies were crucial to make the questionnaire as clear as possible since it was relatively long (participants took between 20 and 45 minutes) and to only use the Paciran Javanese variety. For example, one outcome of these pilot studies was the decision to not include the markers that were identified as evidential markers in Paciran Javanese (*koyoke*, *ketoke*, *jekene* ‘direct evidentials’ and *watake*, *bonake* ‘indirect evidentials’; see Vander Klok 2012 for a description) since it would have made the questionnaire too long.

In the second case, the second author worked in 2015 with three native speakers from Malang, East Java after the questionnaire had been developed and used on Paciran Javanese. To illustrate the implementation as an elicitation set, we focus on Conners’ experience.

In Malang, the fieldworker met with each consultant individually, and then had a follow-up session with two of the speakers together where the fieldworker asked a series of clarifying questions. As the questionnaire was originally developed for a different dialect (Paciran Javanese), the fieldworker altered the prompts and discourse contexts to accurately reflect the Malang dialect. During the first elicitation session, these forms were first checked with the native speaker, and corrections were made. This is an important step in adapting a questionnaire for dialectal research, as naturalness beyond simple acceptability could be a confound when dealing with judgments on subtle semantic or pragmatic differences such as with modals.

The elicitations began with a general request for the participant to list and use in a series of sentences all of the modals that they could come up with (whether adverbs, auxiliaries or verbs). This was a fruitful task because each of the participants had had some linguistic training, and so could understand and successfully identify what a modal was. This was also an important preliminary step to ensure that the fieldworker did not proceed under the assumption that Malang has the same inventory of modals as Paciran Javanese. This initial step also allowed for newly discovered modals to be incorporated into the semi-forced choice task. For example, we uncovered the particle *lak*, a term not previously known to the fieldworker, which can be used to express near future certainty. It contrasts in degree with *bakalane*, a morphologically complex expression, previously known to the fieldworker, which also expresses future certainty. What was uncovered is that, according to the speakers, *lak* encodes a greater degree of certainty than *bakalane*, as shown in (4a) vs. (4b):

- (4) Elicitation with speakers of Malang Javanese
- a. Sesuk *bakal-an-e* *udan!*
 tomorrow **FUT-NMLZ-DEF** rain
 ‘It’s going to rain tomorrow!’ (lit. ‘As for tomorrow, the future is rain!’)
- b. Sesuk *lak* *udan!*
 tomorrow **FUT.PRT** rain
 ‘It’s [definitely] going to rain tomorrow!’

After the inventory of modals was collected along with examples, the fieldworker conducted a semi-forced choice task (described in Section 3.3.3) in Malang Javanese, adding new examples gathered from the elicitation.

3.3.2 Questionnaire on modality: Acceptability rating task

For the acceptability rating task, conducted for Paciran Javanese by the first author in 2011, participants were asked to rate the target sentence for acceptability under the given context on a scale from 1-5, where 1 was defined as *cocok 100%* ‘100% contextually appropriate’ and 5, as *gak cocok belas* ‘not at all contextually appropriate’. The procedure was as follows: the fieldworker first went over the written instructions verbally with the participants, who also read them. Then the participants completed four practice questions before turning to the main questionnaire. Participants were presented with a context and one target sentence on a laptop screen, and then circled a number between 1 and 5 on a separate piece of paper for the corresponding target sentence. There were 20 participants in total (10 participants for each of the two target sentences per context).¹⁶ This task was not conducted for Malang Javanese.

An example is given in (5), where the Paciran Javanese presentation is illustrated first, followed by the English translation of the context and the glossed target sentence with the results. This example tests whether the modal marker (*paleng* or *mesthi*) is compatible in a context that targets an epistemic possibility reading. The results suggest that the modal *paleng* in Paciran Javanese is compatible with epistemic possibility, with an average rating of 2.3. In comparison, the corresponding target sentence *Kalunge Dewi mesthi ilang* ‘Dewi’s necklace must be lost’ with the modal *mesthi* was rated as incompatible with epistemic possibility, with an average rating of 4.¹⁷

¹⁶ See Vander Klok (2014) for more details on the implementation of the acceptability rating task and the semi-force choice task of the modality questionnaire.

¹⁷ Vander Klok (2013a) analyzes *paleng* as a possibility modal that lexically specifies for epistemic modal flavor and *mesti* as a necessity modal that also lexically specifies for epistemic modal flavor.

- (5) Example of acceptability rating task for the modal questionnaire on Paciran Javanese (Vander Klok 2013a:351):

Dewi ewoh nggoleki kalunge. Dewi gak yakin kalunge iku ilang temenan toh mek lali ndeleh, soale Dewi gak eling nek endi terakhir ndeleh kalunge. Dewi wis nggoleki nek ndhuwure lemari, nek dhuwure tv, nek njero tase, tapi isek durung ketemu. Engko sek! Dewi durung nggoleki nek lemarine adikne...

	<i>Cocok 100%</i> [Appropriate]			<i>Gak cocok belas</i> [Inappropriate]	
	1	2	3	4	5
<i>Kalunge Dewi paleng ilang.</i>					

[Context in English: Dewi is looking for her necklace. She's not sure if she lost it or if it is still somewhere in the house because she doesn't remember the last time that she wore the necklace. She looks in her wardrobe and on top of the wardrobe. It's not there. She looks on top of the TV. It's not there. She looks in her backpack; it's not there. Wait! She didn't check her sister's wardrobe yet...]

Kalung-e Dewi paleng ilang.
necklace-DEF Dewi EPIS.POS lose

'Dewi's necklace might be lost.'

Result: 2.3 (average rating score)

3.3.3 Questionnaire on modality: Semi-forced choice task

For the semi-forced choice task, participants were asked to choose the target sentence(s) that was/were most appropriate given the context (and/or offer alternative(s)). This task is most similar to a yes-no task in acceptability judgments, where participants are asked to give a categorical answer (cf. Schütze & Sprouse 2013). The overall procedure for the semi-forced choice task was the same as for the acceptability rating task: participants first went over the instructions with the fieldworker, completed four practice questions, and then turned to the questionnaire. For this task, there were a total of fifteen participants for the Paciran study, and three participants in Malang.

This task differed from the acceptability rating task in that participants were presented with two target sentences per context, as in (6) for Paciran Javanese. They could then choose the target sentence (a) or (b), both, neither, and/or give an alternative sentence that is contextually appropriate. The example in (6) first gives what was presented in the original questionnaire, followed by the English translation and glossed target sentences with the results in (7). The context targets an epistemic reading; thus, of the two target sentences, the one with *mesthi* 'EPIS.NEC' is clearly compatible (13/15 participants), while *kudu* 'ROOT.NEC' is infelicitous in this context (with 0/15 participants having chosen

this sentence). Additionally, two participants independently and separately provided a third sentence with the modal *paleng* ‘EPIS.POS’ shown in (7c), suggesting that this modal is also felicitous in epistemic contexts.¹⁸

- (6) Example of a semi-forced choice task for the modality questionnaire on Paciran Javanese (Vander Klok 2013a:360):

Sirahmu ngelu gak wara-waras. Terus awakmu reng dokter. Wes diprekso tapekne gak ono penyakit opo-opo. Dadi...

- a. *Iku mesthi kakean pikiran.*
b. *Iku kudu kakean pikiran.*

- (7) [Context in English (inspired by Rullmann et al. 2008:321): You have a headache that won’t go away, so you go to the doctor. You were examined but no sickness whatsoever is revealed. So...]

- a. *Iku mesthi k-ake-an pikir-an.*
DEM EPIS.NEC KE-many-NMLZ think-NMLZ
‘It must be from stress.’ (chosen by 13/15 participants)
- b. *Iku kudu k-ake-an pikir-an.*
DEM ROOT.NEC KE-many-NMLZ think-NMLZ
‘It has to be from stress.’ (chosen by 0/15 participants)
- c. *Iku paleng k-ake-an pikir-an.*
DEM EPIS.POS KE-many-NMLZ think-NMLZ
‘It might be from stress.’ (offered by 2/15 participants)

Example (8), also Paciran Javanese, presents the semi-forced choice analog to the acceptability rating task illustrated in (5). This context, which targets an epistemic possibility interpretation, tests whether either *mesthi* or *paleng* (or both) is/are compatible with this type of modal force since both are compatible with epistemic modality. The results of the semi-forced choice questionnaire show that 14/15 participants chose the sentence with *paleng* and 1/15 participants chose sentence with *mesthi*. Additionally, one participant who chose the target sentence with *paleng* also offered a sentence with *durung mesthi* ‘not.yet EPIS.NEC’, demonstrating an alternative way to express epistemic possibility.

¹⁸ See Vander Klok (2013a) that *paleng* also only lexically specifies for epistemic modal flavor like *mesthi* in Paciran Javanese.

- (8) Context as in (5). Two target sentences in (a) and (b); (c) offered by a participant.
- a. *Kalung-e* *Dewi* *paleng* *ilang.*
 necklace-DEF Dewi EPIS.POS lose
 ‘Dewi’s necklace might be lost.’ (chosen by 14/15 participants)
- b. *Kalung-e* *Dewi* *mestbi* *ilang.*
 necklace-DEF Dewi EPIS.NEC lose
 ‘Dewi’s necklace must be lost.’ (chosen by 1/15 participant)
- c. *Kalung-e* *Dewi* *durung* *mestbi* *ilang.*
 necklace-DEF Dewi not.yet EPIS.NEC lose
 ‘It’s not certain yet whether Dewi’s necklace is lost.’ (offered by 1 participant)



Figure 2. Participant working on the modality questionnaire in 2011. (used with permission)

3.4 Second case study: Questionnaire on polar questions

The second case study concerns a questionnaire on yes-no (or polar) question strategies (Vander Kloek et al. 2017). Four Javanese varieties were investigated in total using this questionnaire: one Central Javanese variety as spoken in the city of Semarang, and three East Javanese varieties as spoken in Montong (Tuban Regency), Weru, and Blimbing (Lamongan Regency) villages. Due to the different locations, the first author engaged two

research assistants¹⁹ who were from those areas to administer the questionnaire.

This questionnaire was implemented as an acceptability rating task across all four varieties with 70 items for Montong, Blimbing, Weru, and 88 items for Semarang (partially because there was an additional strategy in Semarang Javanese, further discussed below). Because this questionnaire served as an initial exploration of the various strategies for yes-no questions across Javanese varieties, there were no contexts or fillers. There were 10 participants for each location and we aimed for gender parity.

The methodology for this questionnaire was the following: participants first went over the instructions in their local variety with the research assistant (explained in (9) below). They were instructed to rate each question from between 1 ('completely natural') to 5 ('completely unnatural'). They then completed four practice questions and asked any additional questions about the process before the start of the actual questionnaire. Once the participants completed the rating task, they were invited to give any additional written comments as feedback using a space designated for that purpose.

There were two versions of the questionnaire instructions. Specifically, we used one set of instructions for Semarang Javanese, a Central Javanese dialect, and another set for the three East Javanese varieties (all located along the north shore of Java), as illustrated in (9a-b) and the English version in (9c). It was determined beforehand through consultation with native speakers and the research assistant that the single set of instructions was clear for each of the East Javanese varieties under study.²⁰

(9) Dialectal group-specific instructions for the acceptability rating task on Javanese polar questions.

a. Semarang Javanese version (Central Javanese variety)

Wenebana biji marang ukara ngisor iki kanthi mbunderi angka 1-5 sing maksute 1 = lumrah/natural banget, dene 5 = ora lumrah/natural banget.

b. Montong, Blimbing, Weru version (East Javanese varieties)

Tulung keki biji nek kalimat tanya ngisor iki carane kluwengi pilih salah sijine ongko 1 sampek 5 sing maksute 1 = wes biasa, nek 5 = ora biasane.

c. English version (not used in the implementation)

Please rate each of the following by circling a number between 1-5 where 1 = completely natural and 5 = completely unnatural.

¹⁹ Wuri Sayekti conducted the questionnaire in Semarang, and Finatty Ahsanah in the three locations in East Java.

²⁰ Please see the Appendix for a partial example of the questionnaire for Semarang Javanese.

Javanese polar questions can be created by three different typologically attested strategies: intonation, word order, and particles (Vander Klok 2017). Since the questionnaire was written, it involved the latter two strategies. The items were carefully designed to minimize the lexical differences across dialects and maximize the comparison of the phenomenon under study. For instance, the test items used event predicates that were the same across dialects, such as *nyekel* ‘catch’, *mbayar* ‘pay’, *ketemu* ‘meet’, or *tuku* ‘buy’. We avoided lexical items which were different across dialects, such as *cublok* ‘fall down’ (Central Javanese) vs. *cicir* (some East Javanese varieties). Some differences were unavoidable, such as the proximate demonstrative *kuwi* in Central Javanese and *iku* in East Javanese, but we aimed to use the definite suffix $-(n)e$ instead, which is the same form across both dialectal groups.

The purpose of this study was mainly exploratory but based on previous research and fieldwork observations. First concerning word order, the test items for subject-auxiliary inversion included a number of auxiliaries which are grouped into two sets across at least three Javanese dialects: Peranakan Javanese (spoken by ethnic Chinese; Cole et al. 2008), Paciran Javanese and Standard Javanese (Vander Klok 2015). One set of auxiliaries, which includes *oleh* ‘DEON.POS’, can be fronted to form a polar question, while the other set, which includes *ape* ‘FUT’, cannot, as shown in (10).

- (10) a. *oleh* *aku* *cicip-i* *iwak* *panggang?* PACIRAN JAVANESE
 DEON.POS 1SG try-APPL fish grilled
 ‘May I try the grilled fish?’
- b. **ape* *mbak* *Nunung* *masak* *nastar?*
 FUT Miss Nunung AV.cook cookies
 (‘Will mbak Nunung bake cookies?’) (Vander Klok 2015:150)

Based on these previous findings (Cole et al. 2008; Vander Klok 2015), the hypothesis was that the differences in grammaticality between these two sets would be the same across the four Javanese varieties explored in this study. This same result was borne out. While the test items were held constant across the questionnaire variants, known lexical variation of auxiliaries across dialectal groups was accounted for. For example, the Semarang Javanese questionnaire included both *entuk* and *oleh* as possibility deontic modals (with *entuk* as the preferred marker), while only *oleh* for the East Javanese varieties. Additionally, Semarang Javanese included the auxiliary *nate*, the *krama* ‘high Javanese’ counterpart to *tau* ‘PST’ in *ngoko* ‘low Javanese’, as this marker was noted in fieldwork to be used as a *ngoko* ‘low Javanese’ marker. Finally, Semarang Javanese included two future auxiliaries *arep*, a volitional future, and *bakal*, a non-volitional future, while the East

Javanese varieties only included *ape*, as illustrated in (11).²¹ These were all judged as ungrammatical.

- (11) Test items for subject-auxiliary inversion with auxiliaries marking the future across Javanese dialect groups
- | | | | | | | |
|----|-------------------------------------|-------------------|---------------|----------------|-------------------------|----------|
| a. | <i>*Arep</i> | <i>Nunung</i> | <i>nggawe</i> | <i>nastar?</i> | SEMARANG | |
| b. | <i>*Ape</i> | <i>Nunung</i> | <i>nggawe</i> | <i>nastar?</i> | MONTONG, WERU, BLIMBING | |
| | PROSP/FUT | Nunung | AV.make | cookie | | |
| | 'Will Nunung make cookies?' | | | | | |
| c. | <i>*Bakal</i> | <i>Pak polisi</i> | <i>nyekel</i> | <i>maling</i> | <i>kuwi?</i> | SEMARANG |
| | FUT | Mr. police | AV.catch | thief | DEM | |
| | 'Will Mr. Police catch that thief?' | | | | | |

Second, concerning deriving polar questions with particles, we explored sentence-initial and sentence-final particles, as well as some combinations. There is only one sentence-initial particle in Semarang Javanese (*apa* [ɔpɔ]) and across the East Javanese varieties (*opo* [opo]) investigated. Sentence-final particles in polar questions can be divided into those expressing 'yes' or 'no' and those dedicated to indicating focus or yes-no questions. In Semarang Javanese, *yo* 'yes' and *rak* 'NEG' are used, while in the East Javanese varieties, *yo* 'yes' and *gak* 'NEG' are used. An example of the other sentence-final particles is given in (12) (all grammatical), showing dialectal differences. Apart from the particles, only the future marker differs between the Central Javanese variety (Semarang) with *arep* and the East Javanese varieties with *ape*; the proper name and predicate are otherwise the same. Further, Semarang Javanese has two sentence-final particles (*to* and *ndak*) used to create a polar question, whereas the other varieties do not use the *ndak* particle.

- (12) a. *Nunung arep nggawe nastar to?* SEMARANG
 b. *Nunung arep nggawe nastar ndak?* SEMARANG
 c. *Nunung ape nggawe nastar leh?* MONTONG
 d. *Nunung ape nggawe nastar tah?* WERU
 e. *Nunung ape nggawe nastar tah?* BLIMBING
 Nunung PROSP/FUT AV.make cookie PRT
 'Nunung will make cookies, right?'

We also explored combinations of the sentence-initial particle *apa/opo* with sentence-final particles; the 'yes'/'no' particles with the focus-type sentence-final particle; and both 'yes' and 'no' particles together. One interesting discovery revealed in the pilot study was that in the variety of Javanese spoken in Montong, the syntactic order of the combination

²¹ *Ape* is analyzed as a prospective aspect (Chen et al. 2017), but *arep* behaves differently in that it requires a volitional agent (Vander Kloek 2012). To underline that further research is needed, we gloss them in (10) and (11) as PROSP/FUT.

of the sentence-final particle *leb* with negation was *gak* ‘NEG’ > *leb* ‘PRT’, while in all other varieties investigated, the order is the opposite (PRT > NEG), as shown in (13). Possible semantic differences related to this word order difference needs to be researched.

- (13) a. *Gayus kudu mbayar dendo-ne gak leb?* MONTONG
 Gayus ROOT.NEC AV.pay fine-DEF NEG PRT
 ‘Gayus has to pay the fine or not?’
- b. *Gayus kudu mbayar dendo-ne pa rak?* SEMARANG
Gayus kudu mbayar dendo-ne tab gak? WERU
Gayus kudu mbayar dendo-ne tab gak? BLIMBING
 Gayus ROOT.NEC AV.pay fine-DEF PRT NEG
 ‘Gayus has to pay the fine or not?’

Note that the particle used with negation in polar questions in Javanese is the one also used for disjunction (Vander Kloek 2017); thus, for Semarang Javanese, it is not with *tob* or *ndak* but with *pa*, a shortened form of *apa*. We did include the combination *tob rak* to test this, and it was judged ungrammatical.

In sum, this second case study provides a further illustration of how the grammatical differences of polar questions across Javanese varieties played a role in the design and implementation of this questionnaire—instructions were provided in the appropriate dialect, and the elicitation items varied according to strategies available in each variety. Some shortcomings of this study were that not all possible combinations were included in the test items and no filler items were included. However, since the main purpose of this study was exploratory, these shortcomings can be rectified by conducting a follow-up study focusing on specific phenomena.

3.5 Summary: Questionnaires as a comparative linguistic field research tool

The first case study illustrates how the same tool—a questionnaire on modality—can have different methods of implementation both within one dialect and across dialects. Research on the Paciran dialect revealed significant differences with what had been described for Standard Javanese, primarily in how the different lexical modals carve up the modal space in terms of force and flavor (Vander Kloek 2013a, 2015). In Malang Javanese, the questionnaire helped to uncover new terms, and made it clear that in general, lexical modals patterned with Paciran, rather than Standard Javanese. Given that both dialects are spoken in East Java, and Standard Javanese is spoken in Central Java, this

finding is not surprising. There are however modals in Malang Javanese that are not present in Paciran, such as *lak*, which seems to express near certain future.

The second case study was on a questionnaire designed to explore which morphosyntactic strategies of polar questions are available within and across one Central Javanese variety and three varieties of East Javanese. This study highlighted the need to carefully design the target items in order to maximize the comparative aspect, while allowing for linguistic variation (possibly unanticipated) and keeping in mind processing and time constraints. While questionnaires were identified as an advantageous method in both case studies, they still raised some methodological challenges; we address these in the following section.

4. Challenges of questionnaires

In this section, we describe some challenges of using questionnaires as a tool specific to comparative linguistic field research. Even if a written questionnaire is deemed to be the right tool for the research question and the research population, one can still be confronted with challenges, whether anticipated or not. We use the modality and polar question questionnaires discussed above as case studies to raise these issues. In response, we outline a set of best practices in Section 5, and refer the reader to other resources since these best practices extend beyond using written questionnaires as a fieldwork method.

4.1 Challenge 1: Variation within a written questionnaire for a targeted construction

The first challenge concerns how to conduct a comparative study of a specific linguistic phenomenon—for instance across dialects—while still allowing for (possibly unanticipated) grammatical variation. In creating *written questionnaires for targeted constructions*, a general goal of the (field) linguist is to maximize direct comparison in a context of possible (lexical/phonological/morphosyntactic) variability across languages or dialects, so that examples and forms will be natural and comprehensive for each language/dialect.

For instance, in the second case study, the polar question questionnaire had 88 items for Semarang Javanese but 70 items for the other dialects since only Semarang Javanese uses the particle *ndak* as an additional strategy. In this way, the questionnaire included enough items for cross-dialectal comparison across the four varieties but did not over-generalize. From a processing point of view, omitting the grammatically unavailable

strategies with *ndak* in the dialects spoken in Blimbing, Weru and Montong (East Java) allowed us not to overwhelm participants with ungrammatical examples.

Another example concerns lexical variation: in feedback from the yes-no questionnaire on Semarang Javanese in particular (Wuri Sayekti, p.c.), we learned that some participants rated certain items with a low score for reasons unrelated to grammaticality in some dialects, such as a proper name sounding unfamiliar. For instance, one participant for the Semarang Javanese questionnaire mentioned orally in the practice questions that *Hari* was not a common proper name, and then judged the item lower. We also used the proper name *Kana* [kana] in the rating task for all varieties, only realizing later that this form is homographic to the Standard Javanese distal demonstrative [kənɔ], which was a confound for some participants in Semarang Javanese, since both varieties are spoken in Central Java.

4.2 Challenge 2: Addressing (or not) more salient or prestigious variants

A second challenge of implementing questionnaires as a tool for comparative linguistic field research is the different variants of a language. Across Javanese language varieties, this type of challenge takes at least two forms.

First, there is the challenge of dealing with prestigious vs. non-prestigious variants. The variety spoken in the Central Javanese courtly centers of Yogyakarta and Surakarta/Solo is taught in schools and is the standard in formal Javanese writing, even in areas of West and East Java, where regional varieties differ significantly. One of the challenges for the fieldworker is convincing the participants that you want to research their local variety and getting them to express themselves in their own dialect; this is especially challenging in a more formal situation, as with a written questionnaire. Presenting the instructions and target items in the Javanese variety under discussion with representative phonological and lexical differences—possibly the only time someone might see their variety written in a formal setting—helps achieve this. This approach is not without potential issues, of course, as some participants might take the exercise less seriously. For instance, for the Javanese case studies in Section 3, some participants suggested that it is better to study Standard Javanese. However, once we explained that there is more research on that variety and we are interested in the variety they speak, most are sympathetic to this view. We have found that using the local variety in the research materials themselves (including the instructions) is generally perceived as positive, and participants are happy that research is being conducted on local varieties. The other alternative is to sidestep the issue of which language variety to use, and simply use the language of wider communication; in this case,

Indonesian. We did not choose this option in our studies since part of our goal is to recognize and validate colloquial varieties of Javanese. In practice, however, Indonesian was useful as a metalanguage in elicitation to further discuss or explain Javanese language examples.

Second, there is the challenge of ideologies pertaining to Javanese speech levels. As mentioned in Section 3.1, Javanese has a complex linguistic etiquette with various speech levels (*ngoko*, *madya*, *krama* ‘low, mid, high Javanese’) as well as additional humble and honorific vocabulary sets (Poedjosoedarmo 1968, Errington 1988). Knowledge and use of the etiquette system, however, vary extensively across dialects (Smith-Hefner 1989; Connors 2008; Krause 2017; Vander Klok *to appear*). Even though in some Javanese varieties the speech levels are not as extensive, it is not uncommon for speakers to make sharp distinctions in codes, such as discussed in the elicitation implementation of the modality questionnaire in Section 3.2.1. In both case studies, we focused on *ngoko* ‘low Javanese’, and tried to set the stage with the instructions in *ngoko* as well. For East Javanese varieties studied in this paper, *ngoko* is the everyday norm and *krama* is not used as extensively as in Central Javanese, and this approach generally did not pose problems. Further, the young age of the participants (most in their early 20s) facilitated the use of *ngoko* since many young Javanese speakers in these areas do not speak *krama* fluently (cf. Setiawan 2012; Vander Klok *to appear*). Overall, there are some exceptions to these sharp code distinctions, which include social media such as SMS, Twitter, or Facebook (Brugman & Connors 2018), or magazines specific to certain varieties, such as *Panjebar Semangat*, a Surabaya weekly; *Djaka Lodang*, a former Yogyakarta weekly; and *Jaya Baya*, a Surabaya weekly that focuses on culture, the arts, and literature.

4.3 Challenge 3: Recruiting speakers of a specific variety

A third challenge is that since the questionnaire is designed to be specific (but maximally comparative; see Challenge 1) to a particular language or variety for comparative linguistic research, then the researcher requires participants of that language/variety. We found it difficult to ‘define’ the language variety, especially in a city setting; this was in part because within the city of Semarang, some speakers identified with a variety of the language pertaining to specific neighborhoods.²²

Our overall goal in the two case studies was to target the relevant participants through metadata questions, without necessarily excluding those who deviated from the ‘ideal’ language profile. We thus took a broad approach, targeting speakers who grew up and still

²² See, for example, Samidjan (2013) on potential smaller subdivisions within Semarang dialect. See also Goebel (2002, 2005) on reference to neighborhood varieties.

lived in the same place, and did not exclude those participants whose parents were not from that location or those who had lived elsewhere for a period during their lifetime. Importantly, this information was nonetheless recorded as metadata and we can further subdivide our data into various speaker groups based on these factors.

4.4 Challenge 4: Methodological issues

A fourth challenge, which pertains to any fieldwork or language experiment, is to provide explicit and clear instructions as well as to ensure that the participants fully understand them. For example, we teach participants the task by going through practice questions together and allowing feedback during this stage (this is also possible while they are doing the questionnaire). These two points of the methodological process—clear instructions and ensuring they are understood—are key for participants to properly follow the task.

Some issues that were raised in our case studies were that for the rating task, some participants use only one end of the scale, and some only used 1 and 5. If the fieldworker can recruit a high number of participants, this challenge can be interpreted through relevant statistical tests.²³ Ideally, however, this problem should be resolved through practice questions that define the ends of the scale, before the actual questionnaire is undertaken. Another issue that we encountered was that despite our instructions for the rating task of the questionnaire on yes-no questions, some participants wanted to know or give the answers to the yes-no question (in order to rate the question), showing a lack of understanding of the task.

5. Some best practices for using questionnaires for comparative linguistic field research

Based on the above challenges, we suggest five practices for implementing written questionnaires for targeted constructions. This paper takes a narrow focus coming from the perspective of comparative linguistic research rather than from using written questionnaires in general (see various ways questionnaires can be classified in Section 2). Despite this focus, we feel many of these points can be useful in the practice of field research and in experimental studies: having a pilot study and practice questions; evaluating which language or variety is the most appropriate at each stage of the questionnaire; gathering

²³ It is beyond the scope of this paper to discuss this; see, for instance, Dollinger (2015) and overview chapters in Podesva & Sharma (2013).

metadata on the social background of the participants. In addition to these points, we also advocate for the designation of an appropriate contact person for each language or dialect under study as well as ample space for feedback where the participant is free to use any language or variety. Given that these points can have a wider application than questionnaires, we keep this section brief, but draw from our own experiences and suggest relevant literature that may also be helpful.²⁴ Overall, this section might be most useful to a scholar embarking on a comparative fieldwork research project.

5.1 Developmental stages

The developmental stages in this section refer to two different types: (i) aiding participants in understanding the task and (ii) creating and refining the test items.

The first point is especially important in certain fieldwork situations where questionnaires are a completely novel task, and participants may not be comfortable with questionnaire tasks. It is crucial to set up a practice task in order to ensure that all participants understand and can perform the task. However, not everyone is capable of every type of task, due to different interests or talents, or perhaps to physical limitations. (For practical advice on working with language consultants, see e.g., Chelliah 2013:51-52; Bower 2015:148-153.)

Concerning the second point, it is imperative to carry out a pilot test for the questionnaire: this allows the researcher to practice and perhaps train others in conducting the questionnaire, as well as check if there are any issues with the content. Nahhas (2007:84) underlines that it is also important to test the tool in a setting as similar as possible to that in which the experiment will be conducted.

Pilot testing provides a chance to uncover problems with the items and to check both grammaticality and naturalness. When using a questionnaire for comparative linguistic research, different lexical items or grammatical constructions may express similar ideas. The range of meanings or uses encompassed by a lexical item in one dialect is not necessarily co-extensive with that lexical item in another dialect. The questionnaire must therefore be structured broadly enough to include unexpected relevant distinctions or features that may vary.

For some questionnaires, pragmatic loading can also be significant; there can be a certain amount of contextual information provided prior to the experiment. In the section of the modal questionnaire testing the use of two modals for the expression of

²⁴ For practical information on fieldwork, see especially Bower (2015) and references therein, and Chelliah & de Reuse (2011). For practical information in using more experimental methods in linguistics, see Arunachalam (2013). For practical information for using written questionnaires specifically for social dialectology, see Dollinger (2015).

circumstantial versus epistemic possibility, the original question provided a rich context, and then offered the same carrier sentence that differed only in the selected modal. As described in section 3.2.3 above, the participants were asked to select the sentence(s) that was/were most appropriate given the context, if any, and/or to offer alternatives. A pilot test in Malang Javanese revealed an additional option, incorporating both of the modals with different syntactic distributions, as in (14), and suggesting the second English translation:

(14) Piloting questions reveals new possibilities to test:

- | | | | | | | |
|----|---------------|---------------|------------|---------------|--------------|-------------|
| a. | <i>duk</i> | | <i>isò</i> | <i>thokol</i> | <i>ndbék</i> | <i>kéné</i> |
| b. | <i>duku</i> | <i>paléng</i> | | <i>thokol</i> | <i>ndbék</i> | <i>kéné</i> |
| c. | <i>paléng</i> | <i>duku</i> | <i>isò</i> | <i>thokol</i> | <i>ndbék</i> | <i>kéné</i> |
| | EPIS.POS | k.o.fruit | EPIS.POS | CIRC.POS | grow | at here |
- ‘Duku can/might grow here.’ ~ ‘Duku might be able to grow here.’

Finally, it is important to consider the amount of time needed for this stage, which almost always takes longer than expected. Questionnaires of the type described in this paper are often used to test differences between certain lexical items or particular grammatical constructions. We have found the semi-forced choice implementation useful for this kind of direct comparison. It is necessary to dedicate a enough time to the developmental stages of the questionnaire to ensure that each item is testing the appropriate distinction, so that the results are properly interpretable. It is thus important to accurately gauge the time for both the development of the test items and for ensuring the participant understands the task at hand.

5.2 Contact person and/or research assistant

Ideally, for comparative linguistic field research, the same fieldworker should administer the questionnaire across different languages or varieties for consistency, and there should be a contact person for each variety. By contact person, we mean someone who is not a study participant directly but who can reliably answer questions relating to that particular language/variety and ideally have some linguistic training. We view the contact person as playing a key role in the developmental stages such as creating the corresponding version of the instructions in the local variety and participating in the pilot study.

When the fieldworker is unable to conduct the questionnaire with all study participants, then research assistants can undertake this role. Unlike the contact person, any research assistant must have some training in field methods or data collection. The training can be given by the fieldwork researcher, if needed. (Of course, the contact person can also be the research assistant.) The training process is beneficial for all; it can strengthen

relationships between the researcher and the assistant, and perhaps also with the community as this work may be perceived as important. It also gives the consultant strong transferable skills for other possible employment, such as people skills or basic computer skills. Much of the literature in language documentation advocates for working with the community in language research (e.g. Dwyer 2006 and references therein) and making use of a research assistant can play a role in this endeavor.

While it may not be necessary for the research assistant to have fluency in IPA, he/she must be able to accurately record distinctions that arise during data collection, from the phonetic level through the semantic and discourse levels. If necessary, the data collection can be recorded, so the fieldworker can review the work of the research assistant after the fact. Depending on the skill level of the research assistant, the fieldworker should train or familiarize them with the questionnaire to ensure that they understand both the overall goal and the express intent behind each prompt. Furthermore, the assistant should be instructed in how to go over the practice questions with the goal of having the same experience level across all participants, as mentioned in Section 5.1. Finally, it is important to maintain open and direct contact with those conducting the questionnaire to ensure timely feedback.

5.3 Language/variety selection

Choosing the most appropriate language or variety is important for various aspects of conducting the questionnaire including the language of instruction (both oral and written), the language of the target items of the questionnaire, and the language for asking for feedback. AnderBois & Henderson (2015) underline the importance of reporting the reasoning of this choice in the results of the study – often it is not clear to the reader in which language the study was undertaken, despite potential repercussions on the results, and why this choice was made (it could be for ethnolinguistic, sociolinguistic, or purely linguistic reasons.)

In a comparative linguistic study, it is helpful to make a distinction between dialectal data collection of languages for which there is a published or even notional standard, and those for which there is not. We consider written standard French to be an example of a published standard, while Parisian French (in speech) would be an example of a notional standard. Similarly for Indonesian, while the Indonesian in newspapers or formal speeches can be considered as the explicit standard, Jakartan Indonesian is the notional standard. Javanese presents an additional complexity, as there is no published standard; that said, the variety spoken in and around the royal centers of Yogyakarta and Solo/

Surakarta are considered as the notional standard and circulated as such in teaching materials (see Section 3.1 above).

For languages with no regulated or notional standard, each dialect or variety can be approached neutrally. However, in the context of published or notional standards, care needs to be taken in terms of which language or variety is chosen for each step, taking into consideration the benefits of a shared contact language distinct from the target language, while weighing its possible influence thereupon. For example, in conducting research on Javanese in Indonesia, one benefit of using Indonesian as the language for instructions in administering a questionnaire is to avoid possible influence from ‘Standard Javanese’ as the notional standard. On the other hand, this choice can be felt to possibly belittle the particular colloquial variety of Javanese under study. Another approach is to create different versions of instructions that correspond to the specific variety being investigated, as we have done for the polar question questionnaire (see Section 3.4). Regardless of the language or variety chosen, instructions should emphasize the interest in studying the variety under discussion. Instructions should be clear and concise, and in a language that is fully comprehensible to the study participant. It can be very helpful to give an example in the instructions. Finally, participants should be free to use the language of their choice in expressing themselves, such as in offering feedback.

5.4 Feedback

An area for feedback from participants should be made available in the written questionnaire, for final comments or alternative target items. As much as we try to control for the hypothesis under study in the questionnaire design, feedback often offers clues as to different ways to better interpret the data.

For example, in one of our items from the modal questionnaire, we provided the following context (adapted from von Fintel & Gillies 2007):

- (15) You are going to visit your friend in the hospital. When you enter into the hospital, you stop at the information desk to inquire what room your friend is in. But the woman at the information desk tells you that you can't visit your friend now because it's already 8pm! She says, “I'm sorry, the hospital regulations say that...” (Visitors MUST leave by 6pm.)

One of our participants noted that this sort of interaction is relatively formal as it takes place in a public setting (the hospital), and between a ‘customer’ and a paid employee. Further, the employee is quoting or at least paraphrasing an established regulation. Due to all these factors, Indonesian would often be preferred to Javanese. The participant felt that if the ‘customer’ were a monolingual Javanese speaker and hence likely older,

from a rural area, and less educated, then the employee may well use a variety with elements from the local Javanese dialect – though still in a polite register. This sort of feedback is important when interpreting answers.

5.5 Metadata

In running the questionnaire, detailed metadata on the participants should be collected. While this point seems obvious, it is nonetheless worth taking the time to prepare for this step. For instance, it is important to establish which metadata categories are relevant for the goals of the study. It is also worthwhile to consider how the data might be used in the future, either by the fieldworker herself, or by some other researcher. Collecting too much metadata can be tedious for participants.

If a goal of the research is to be able to make generalizations over different demographic groups, then that demographic information must be collected from all study participants. For a comparative linguistic study, when multiple participants from multiple locations are providing responses, it is difficult to identify all relevant distinctions. For example, if some small subset of participants responds to a prompt in a certain way, it will be useful and interesting to be able to identify whether that group represents a demographic trend.

Beyond general demographic information, we find it useful for work in multilingual places like Java to include questions on which neighborhoods one has lived in for significant periods. It is also important to collect basic data on the language of parents and grandparents, in addition to what language(s) or speech level(s) the participant speaks with them. While collecting this kind of data can be time-consuming, having such information makes it possible to interpret the data with a finer-grained approach than perhaps anticipated.

5.6 Summary of practices

We find it useful to report on the practices and considerations that we successfully deployed in the field in cross-dialectal research. Some of the best practices we highlight above can be summarized as a common-sense approach combined with an awareness of local needs and norms. It is important to pay attention to the developmental stages of research, pilot questions, and determine what sort of metadata is necessary without overburdening research participants; to be aware of local norms (work with the community, engage a local point of contact, and identify and sensitively navigate different language ideologies and attitudes, especially those that can confuse research results); to be open to

new findings (do not construct your research tools in such a way that they will affect outcomes); and include sufficient space in the process to allow for feedback that could be crucial for interpreting results.

6. Conclusion

Field linguists have a number of different tools and methodologies at their disposal when conducting fieldwork. The goals of the research project, limitations in time, resources, and project participants, and the scope of collection will all factor into determining the most appropriate method(s) and approach.

The focus of this paper was on the use of *questionnaires for targeted constructions*, and particularly how they can be beneficially used in comparative linguistic field research. We discussed two case studies on Javanese where questionnaires are relevant for collecting data on specific grammatical constructions or features as well as for gathering sociolinguistic information such as language attitudes and use. The case study using the questionnaire on modality showed how a questionnaire can be useful to gather subtle judgments on semantics from multiple respondents in a replicable way. The study also showed how the same questionnaire can be implemented in various ways, depending on the timing and number of participants. The second case study, about a questionnaire designed to explore the morphosyntactic strategies of polar questions across four different Javanese varieties, showed the importance of carefully designing items to maximize direct comparison while allowing for variation.

Through these case studies, we also have identified four significant challenges: identifying variation as dialect-internal or cross-dialectal; identifying sociolinguistic variants; delimiting speakers of a variety; and overcoming particular methodological issues. In order to overcome these challenges, we suggested five ‘best practices’, useful particularly for the scholar embarking on a field research project and using questionnaires for comparative linguistic studies. These practices are to (i) focus on questionnaire development as well as experience leveling of participants; (ii) work with a contact person and/or research assistant for each dialect/variety; (iii) consider which language or variety is most appropriate for instruction, collection, and implementation; (iv) allow for feedback in various ways; and (v) collect appropriate metadata.

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Appendix A. Example of yes-no questionnaire for Semarang Javanese

Kuesioner
Semarang

Nomer: _____

Wenehana biji marang ukara ngisor iki kanthi mbunderi angka 1 - 5
sing maksute 1 = lumrah/natural banget, dene 5 = ora lumrah/natural banget.

Latihan:

- | | | | | | |
|---|---|---|---|---|---|
| 1. Opo Hari nyanyike anake sewengi? | 1 | 2 | 3 | 4 | 5 |
| 2. Pelem kuwi mbok wis pangan? | 1 | 2 | 3 | 4 | 5 |
| 3. Lili wis 3 taun to? | 1 | 2 | 3 | 4 | 5 |
| 4. Lili tau mangan rajungan mau bengi to? | 1 | 2 | 3 | 4 | 5 |

Kuesioner:

- | | | Lumrah
banget | | Ora lumrah
banget | |
|---|---|------------------|---|----------------------|---|
| 1. Titin lagek ketemu koncone to? | 1 | 2 | 3 | 4 | 5 |
| 2. Opo Bambang njahit celono kuwi ndak an? | 1 | 2 | 3 | 4 | 5 |
| 3. Opo Bambang njahit celono kuwi to ning omah? | 1 | 2 | 3 | 4 | 5 |
| 4. Opo Bambang njahit celono kuwi? | 1 | 2 | 3 | 4 | 5 |
| 5. Siti tau manggon ning Ostrali rak? | 1 | 2 | 3 | 4 | 5 |
| 6. Opo Ulum mepe klambine yo? | 1 | 2 | 3 | 4 | 5 |

References

- Abtahian, Maya Ravindranath & Cohn, Abigail C. & Pepinsky, Thomas. 2016. Modeling social factors in language shift. *International Journal of the Sociology of Language* 242:139-179.
- AnderBois, Scott & Henderson, Robert. 2015. Linguistically establishing discourse context: Two case studies from Mayan languages. In Bochnak, Ryan M. & Matthewson, Lisa (eds.) *Methodologies in Semantic Fieldwork*, 207-232. Oxford: Oxford University Press.
- Arunachalam, Sudha. 2013. Experimental Methods for Linguistics. *Language and Linguistics Compass* 7/4: 221–232, 10.1111/lnc3.12021
- Bard, Ellen Gurman & Roberston, Dan & Sorace, Antonella. 1996. Magnitude estimation of linguistic acceptability. *Language* 72, 32-68.
- Bornkessel-Schlesewsky, Ina, & Schlesewsky, Matthias. The wolf in sheep's clothing: Against a new judgement-driven imperialism. *Theoretical Linguistics* 33.3 (2007): 319-333.
- Bowern, Claire. 2015. *Linguistic Fieldwork: A practical guide*. 2nd edition. New York: Palgrave Macmillan.
- Brugman, Claudia & Conners, Thomas J. 2018. Distinguishing properties of SMS and Twitter in Indonesian: a contrastive study. *Digital Scholarship in the Humanities*. fqy028, <https://doi.org/10.1093/llc/fqy028>
- Burton, Strang & Matthewson, Lisa. 2015. Targeted construction storyboards in semantic fieldwork. In Bochnak, M. Ryan & Matthewson, Lisa (eds.) *Methodologies in Semantic Fieldwork*, 135-156. Oxford: Oxford University Press.
- Chelliah, Shobhana. 2013. Fieldwork for language description. In Podesva, Robert J. & Sharma, Devyani (eds.), *Research methods in Linguistics*, 51-73. Cambridge: Cambridge University Press.
- Chelliah, Shobhana, & de Reuse, Willem J. 2011. *Handbook of Descriptive Linguistic Fieldwork*. Dordrecht: Springer.
- Chen, Sihwei & Hohaus, Vera & Laturnus, Rebecca & Louie, Meaghan & Matthewson, Lisa & Rullmann, Hotze & Simchen, Ori & Turner, Claire K. & Vander Klok, Jozina. 2017. 'Past possibility cross-linguistically: Evidence from 13 languages.' In Arregui, Ana & Rivero, Maria-Luisa & Salanova, Andres (eds.), *Modality across syntactic categories*. Oxford: Oxford University Press.
- Cole, Peter & Hara, Yurie & Yap, Ngee Thai. 2008. 'Auxiliary Fronting in Peranakan Javanese'. *Linguistics*, 44: 1-43.
- Conners, Thomas J. 2010. Death of Linguistics Subsystems: Javanese Speech Levels. (Paper presented at *Humanities of the Lesser Known*, Lund University, Lund, Sweden, 10–11 September 2010.)
- Conners, Thomas J. In Press. Javanese Undressed: Isolating Phenomena in 'Peripheral' Dialects. In Gil, David & McWhorter, J. (eds.), *Austronesian Undressed*. Oxford: Oxford University Press.
- Conners, Thomas J. & Vander Klok, Jozina. 2016. 'On language documentation of colloquial Javanese varieties.' In Hrics, Lindsay (ed), *Proceedings of 2016 Annual Conference of the Canadian Linguistics Association (CLA-ACL)*, 1-12. <http://cla-acl.ca/actes-2016-proceedings/>

- Dollinger, Stefan. 2015. *The Written Questionnaire in Social Dialectology*. Amsterdam: John Benjamins.
- Dwyer, Arianne M. 2006. Ethics and practicalities of cooperative fieldwork and analysis. In Gippert, Jost & Himmelmann, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of Language Documentation* (Trends in Linguistics: Studies and Monographs 178), 31–66. Berlin: Mouton de Gruyter.
- Ekowardono, B. Karno & Suprapti & Hartono, Bambang & Setyono. 1999. *Modalitas dalam Bahasa Jawa* [Modality in Javanese]. Jakarta: Pusat Pembinaan dan Pengembangan Bahasa, Departemen Pendidikan dan Kebudayaan.
- Errington, J. Joseph. 1988. *Structure and style in Javanese: A semiotic view of linguistic etiquette*. Philadelphia: University of Pennsylvania Press.
- Errington, J. Joseph. 1998. *Shifting languages: Interaction and identity in Javanese Indonesia*. Vol. 19. Cambridge: Cambridge University Press.
- Featherston, Sam. 2007. 'Data in generative grammar: The stick and the carrot.' *Theoretical Linguistics* 33.3: 269-318.
- von Fintel, Kai, & Gillies, Anthony S. 2007. An opinionated guide to epistemic modality. In *Oxford Studies in Epistemology* 2: 32-62.
- Franks, Scott & Gessner, Suzanne. 2013. *A Guide to Language Policy and Planning for B.C. First Nations Communities*. Brentwood Bay, B.C.: First Peoples' Cultural Council.
- Goebel, Zane. 2002. Code choice in interethnic interactions in two urban neighborhoods of Central Java, Indonesia. *International Journal of the Sociology of Language* 158:69-87.
- Goebel, Zane. 2005. An ethnographic study of code choice in two neighbourhoods of Indonesia. *Australian Journal of Linguistics* 25:85-107.
- Hacquard, Valentine. 2011. Modality. In *Semantics: An international handbook of natural language meaning*, eds. C Maienborn, K von Heusinger & Paul Portner, 1484-1515. Berlin: Mouton de Gruyter.
- Hatley, Ron. 1984. Mapping cultural regions of Java. In *Other Javas: Away from the kraton*, eds. Ron Hatley, Jim Schiller, Anton Lucas & Barbara Martin-Schiller, 1-32. Clayton, Victoria: Monash University.
- Hoogervorst, Tom. 2010. *Describing Surabaya's Linguistic Ecology*. M.A. Thesis, Leiden University.
- Krausse, Daniel. 2017. A description of Surabayan Javanese with special reference to its linguistic etiquette. M.A. Thesis: Goethe Universität.
- Linn, Mary S. 2004. Handbook 3: Conducting a language survey. *Awakening our languages: ILI Handbook Series*. New Mexico: Indigenous Language Institute.
- Matthewson, Lisa. 2004. On the methodology of semantic fieldwork. *International Journal of American Linguistics* 70:369-415.
- Nahas, Ramzi W. 2007. *Steps of language survey: an outline of practical methods*. Ms. Payap University, SIL International. http://li.payap.ac.th/index.php?option=com_content&id=14
- Oetomo, Dede. 1990. The Bahasa Indonesia of the middle class. *Prisma* 50: 68-79.
- Palmer, Frank Robert. 1986. *Mood and modality*: Cambridge textbooks in linguistics. Cambridge, New York: Cambridge University Press.
- Podesva, Robert J. & Devyani Sharma (eds.) 2013. *Research Methods in Linguistics*. Cambridge: Cambridge University Press.
- Poedjosoedarmo, Soepomo. 1968. Javanese speech levels. *Indonesia* 6:54-81.
- Portner, Paul. 2009. *Modality*. Oxford; New York: Oxford University Press.
- Rullmann, Hotze, Lisa Matthewson, & Henry Davis. 2008. Modals as distributive indefinites. *Natural Language Semantics* 16.4: 317-357.

- Robson, Stuart. 2014. *Javanese Grammar for students, 3rd edition*. Glen Waverley: Monash Papers on Southeast Asia.
- Samidjan, Hartono. 2013. *Halah Pokokmen: Kupas tuntas dialek semarangan*. Semarang: Mimbar Media.
- Schilling, Natalie. 2013. Surveys and interviews. In Robert J. Podesva & Devyani Sharma (eds.), *Research methods in Linguistics*, 96-115. Cambridge: Cambridge University Press.
- Schütze, Carson T. & Sprouse, Jon. Judgment data. In Podesva, Robert J. & Sharma, Devyani (eds.), *Research methods in Linguistics*, 27-50. Cambridge: Cambridge University Press.
- Setiawan, Slamet. 2012. *Children's language in a bilingual community in East Java*. The University of Western Australia, Perth Australia. (Doctoral dissertation.)
- Smith-Hefner, Nancy. 1989. A Social History of Language Change in Highland East Java. *Journal of Asian Studies* 48(2):257-271.
- Vander Klok, Jozina. 2013a. Pure possibility and pure necessity modals in Paciran Javanese. *Oceanic Linguistics*, 52(2), 341-374.
- Vander Klok, Jozina. 2013b. 'Questionnaire on modality for cross-linguistic use.' <http://www.eva.mpg.de/lingua/tools-at-lingboard/questionnaires.php>
- Vander Klok, Jozina. 2014. On the use of questionnaires in semantic fieldwork: A case study on modality. In Belkadi, Aicha & Chatsiou, Kakia & Rowan, Kirsty (eds.), *Proceedings of Language Documentation and Linguistic Theory 4*, 1-11. London: SOAS.
- Vander Klok, Jozina. 2015. 'The dichotomy of auxiliaries in Javanese: Evidence from two dialects.' *Australian Journal of Linguistics* 35.2, 142-167.
- Vander Klok, Jozina. 2017. 'Types of polar questions in Javanese.' *NUSA: Linguistic Studies in and around Indonesia*, 63, 1-44. <http://hdl.handle.net/10108/91748>
- Vander Klok, Jozina. *to appear*. The Javanese language at risk? Perspectives from an East Java village. *Language Documentation & Conservation*.
- Vander Klok, Jozina & Matthewson, Lisa. 2015. Distinguishing *already* from perfect aspect: A case study on Javanese *wis*. *Oceanic Linguistics*, 54.1, 172-205.
- Vander Klok, Jozina & Ahsanah, Finatty & Sayekti, Wuri. 2017. 'Cross-dialectal variation of Javanese particles in yes-no questions.' (Paper presented at *International Symposium on Languages of Java (ISLOJ 6)*, Universitas Dian Nuswantoro, Semarang, Java, Indonesia. May 18-19.)
- Wardhaugh, Ronald. 2015. *An Introduction to Sociolinguistics, 7th edition*. London: Lackwell Publishing.
- Wedhawati & Nurlina, Wiwin Erni Siti & Setiyanto, Edi & Marsono & Sukesti, Restu & Baryadi, I. Praptomo. 2006. *Tata Bahasa Jawa Mutakhir* [Contemporary Javanese Grammar]. Yogyakarta: Penerbit Kanisius.
- Wolff, John U. & Poedjosoedarmo, Soepomo. 1982. *Communicative Codes in Central Java*. Ithaca: Southeast Asia Program.
- Zentz, Lauren. 2015. "Love" the local, "use" the national, "study" the foreign: Shifting Javanese Language Ecologies in (Post-)Modernity, Postcoloniality, and Globalization. *Journal of Linguistic Anthropology* 24 (3), 339-359.

Trajectoire: A methodological tool for eliciting Path of motion

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This paper presents a methodological tool called *Trajectoire* that was created to elicit the expression of Path of motion in typologically and genetically varied languages. Designed within the research program TRAJECTOIRE ‘Path (of motion)’, supported by the *Fédération de Typologie et Universaux Linguistiques*, the *Trajectoire* elicitation tool aims to systematically explore the morpho-syntactic resources used for the expression of Path and the distribution of spatial information across the sentence, with a specific focus on the (a)symmetry in the expression of Source (the initial point) and Goal (the final point). Its main aim is to facilitate typologically-informed language descriptions, which in their turn can contribute new data to typologically-oriented research. Inspired by the research methods developed at the Max Planck Institute for Psycholinguistics (Nijmegen, NL), the *Trajectoire* material comprises 76 video-clips consisting of 2 training clips, 55 target clips and 19 fillers, and it includes 3 distinct versions ordering the clips differently to minimize possible routine effects. The 55 target clips vary for several parameters, namely Figure, Ground, the different portions of Path, Deixis, and less systematically, Manner. The scenes filmed in an outdoor natural environment ensure accessibility to non-Western populations. The paper first presents the structure and the use of the elicitation material. On the basis of the data obtained in about 20 different languages and reports by users, both researchers and speakers, it then discusses the advantages and some drawbacks of the *Trajectoire* elicitation tool, and considers the issue of the tool’s dissemination and online open access.

Keywords: Visual stimuli; dynamic stimulus; Path; Source-Goal (a)symmetry; linguistic fieldwork.

1. Introduction

Questionnaires¹, including visual stimuli, are now largely acknowledged to be useful and efficient methodological tools to support linguistic research. A great variety of such tools has been created in the past decades for eliciting linguistic data in various domains of expression, and many of them have been designed as invaluable tools facilitating cross-linguistic investigations and comparisons (e.g. *The Pear Stories*, Chafe 1980; *Topological relations*, Bowerman & Pederson 1992; *Space Questionnaire*, Levinson 1992; *Route description*, Wilkins 1993; *Event realization*, Pederson; *Posture verbs*, Danziger 1995, to quote just a few from the earliest).²

The TulQuest website (<http://tulquest.huma-num.fr/>; see Lahaussais (2019) in this volume) hosts about a hundred Questionnaires and classifies visual tools according to the specific world area and linguistic domain(s) targeted, the types of data produced as well as the metalanguage and medium (i.e. type of material) used. Among the different parameters of classification outlined in the literature, the most relevant primary distinction is probably the medium used, as it strongly influences the type of data obtained. For instance, San Roque & al. (2012) distinguish between “linguistic stimuli (...) [that] include translation, questionnaire, and explicit translation tasks” and “non-linguistic stimuli” (Majid 2012 also makes this distinction), which are further subdivided according to the type of data collected (extended narrative productions, (short) descriptions and categorizations of comparable sets, dialogical negotiations). Furthermore, within the “pictorial stimuli”, Lüpke (2009) contrasts both the medium used (static, aka. picture stimuli vs. dynamic, aka. video stimuli) and the nature of the task (interactive stimuli where speakers talk to each other vs. semi-forced choice tasks like in the Bohnemeyer et al.’s (2001) *Event Triads*).

The *Trajectoire* elicitation material (Ishibashi, Kopecka and Vuillermet 2006) presented in this paper is a dynamic (as opposed to static) visual tool that consists of video-clips designed to produce descriptions of Path of motion in typologically and genetically varied languages. It was elaborated in the context of the cross-linguistic research project TRAJECTOIRE funded by the *Fédération de Typologie et Universaux Linguistiques* (FR2559 CNRS, France), which brought together about 20 linguists working in different geographical areas on various languages, including languages with oral and written traditions, spoken and signed languages, modern and ancient ones. To

¹ We distinguish *questionnaire* from *Questionnaire* with a capital, the latter being an inclusive term covering any kind of methodological tool used by linguists to support their data collection.

² Many of the Questionnaires, including traditional elicitation questionnaires and visual stimuli (both pictures and videos), were developed at the Max Planck Institute for Psycholinguistics in Nijmegen, the Netherlands, for cross-linguistic investigations. For details, see <http://fieldmanuals.mpi.nl/>.

facilitate the systematic exploration of the expression of Path across these languages, we elaborated an elicitation tool called *Trajectoire* (“Path” in French) in the form of video-clips. The aim of this paper is to present the design of this material, its use and diffusion in order to, first, allow researchers to investigate this domain of expression and, second, contribute to the methodological reflection on best practices that are essential for the validity and soundness of the data collected in a single language and/or for a cross-linguistic survey.

The paper is structured as follows. Section 2 introduces the semantic domain to be explored by means of the *Trajectoire* tool, namely the expression of motion in general, and the asymmetry between Source and Goal of motion in particular. Section 3 discusses the technical aspects of the stimulus set and our endeavor to create an elicitation tool that can be used with speakers from different cultures. Section 4 critically assesses the data collected, presents some of the outcomes based on these data, and shows how we distributed the stimulus set. The organization of our contribution echoes Guastavino’s (2009: 235) recommendations for an experimental method to reach “ecological validity”, i.e. the subject should process the represented world in a similar way as the real world; Guastavino emphasizes the importance of clearly defining the object of research, the target population, and the interaction between the two via the experimental task.

2. An elicitation tool for the expression of Path of motion

2.1 Why the expression of motion?

Spatial organization has long been recognized as being of central importance in human cognition (e.g. Miller & Johnson-Laird 1976; Levinson 1996; 2001), and the expression of location and motion have thus been privileged domains in the study of language for a long time (see the rich bibliography on motion event studies compiled by Matsumoto, Slobin & Akita, 2012).³ Despite the universality of the basic elements present in spatial expressions (cf. Talmy 1972; 1985) – Figure, Motion, Path and Ground –, the actual encoding of these elements displays significant inter-linguistic and intra-linguistic variation. These spatial elements can be encoded through different parts of speech, conflated, or distributed over several parts of speech (cf. Sinha & Kuteva 1995; Wälchli & Sölling 2013).

Looking for instance at the variation in the encoding of the Path element only (i.e. the core element of any motion event consisting of a direction followed by the Figure), the

³ <http://www.lit.kobe-u.ac.jp/~yomatsum/motionbiblio.html>

literature has flourished (see Imbert (2012) for a thorough summary) since the well-known dichotomic categorization of languages into verb-framed vs. satellite-framed by Talmy (1985).⁴ Aske (1989) discusses cases of split-framing in languages where telic Path and atelic Path are encoded differently – also referred to as the boundary-crossing constraint in Slobin & Hoiting (1994) and Slobin (1996). Slobin (2004) argues for the necessity of including a third ‘equipollently-framed’ category for languages having complex verb constructions (see also Zlatev & Yangklang 2004), while Kopecka (2004; 2006) points to the possible coexistence of different frames within a given language and shows the importance of a thorough examination of the verb semantics and of considering various diachronic changes (e.g. loss of productivity of Path morphemes) and their consequences on the type of constructions available in a language. Furthermore, Ibarretxe-Antuñano (2009) argues for a cline of Path salience with high Path-salient languages at one side of the continuum and low Path-salient languages at the other side, whereas Fortis & Vittrant (2011; 2016) propose a more fine-grained typology of (attested) constructions that keeps track of the locus (or loci) where the Path is expressed – the (verbal) Head (see Matsumoto’s (2003) proposal of *Head*-framed rather than *Verb*-framed constructions), the Satellite, the Adnominal phrase and/or the Noun. In brief, these studies show that, when investigating the expression of Path, it is important to take into account both inter- and intra-linguistic variation.

2.2 The expression of Path and the Source-Goal asymmetry

As pointed out by Talmy (1985, 2000), Path is the core schema of a motion event as it represents the direction followed by the Figure that can be oriented away from an initial point (Source), via intermediary points (Median), to a final point (Goal), as schematically illustrated in Figure 1.



Figure 1. *Path of motion and its different points.*

⁴ Languages are verb-framed if they encode the PATH information in the verb (like *enter*), and satellite-framed if in the element in sister relation to the verb (like *go in*). Talmy (1985 [2000: 65]) is however already aware that the lexicalization patterns and framing best describe the constructions available in a language rather than the language itself: “...a language can characteristically employ one conflation type for one type of Motion event and characteristically employ a different conflation type for another type of Motion event. This can be called a ‘split’ or ‘complementary’ system of conflation.”

As is shown in examples (1) from Polish (West Slavic), the expression of Path typically implies a change of location, either with respect to the Source (1a), the Median (1b) or the Goal (1c) (for a discussion of Path and change of location, see among others Slobin 1997; O'Connor 2007; Fortis & Vittrant 2011; Grinevald 2011; Imbert 2012).

(1) Polish

a. Source-oriented event

Kobieta wy-szła z jaskini
 woman.NOM out-walk.PST.3SG.F of cave.GEN
 'The woman walked out of the cave.' {traj025_Bla}

b. Median-oriented event

Chłopiec prze-chodzi przez kamienny most
 boy.NOM across-walk.PRS.3SG across stone.ACC.SG.M bridge.ACC.SG.M
 'The boy is crossing a stone bridge.' {traj050_Pio}

c. Goal-oriented event

Mężczyzna w-szedł w zarośla
 man.NOM in-walk.PST.3SG.M in bush.ACC.PL.N
 'The man walked into the bushes.' {traj056_Nat}

When describing complex Path events which imply two (or more) Grounds, for example the Source and the Goal, speakers might express two reference points, as in (2a), or select only one for the linguistic expression, as in (2b), both examples referring to the same motion scene, which shows a boy walking out of a cave onto the beach.

(2) Polish

a. Source–Goal-oriented event

chłopiec wy-szedł z jaskini na plażę
 boy.NOM out-walk.PST.3SG.M of cave.GEN.SG.F on beach.ACC.SG.F
 'The boy walked out of the cave onto the beach.' {traj028_Woj}

b. Source-oriented event

chłopiec wy-szedł z jaskini
 boy.NOM out-walk.PST.3SG.M of cave.GEN.SG.F
 'The boy walked out of the cave.' {traj028_Nat}

Interestingly, scholars have postulated that there is a bias toward the Goal and that people tend to (1) allocate more attention to the Goal than to the Source or the Median, (2) express the Goal of motion events more frequently, and (3) use semantically more fine-grained linguistic resources to express the Goal. Moreover, it has been postulated

that languages tend to have more grammatical resources to express the Goal than to express the Source (see e.g. Ikegami 1987; Bourdin 1997; Lakusta & Landau 2005; Regier & Zheng 2007). This bias toward the Goal, also known as Source/Goal asymmetry or the Goal-over-Source principle, has often been attributed to the pragmatic relevance of the Goal and its perceptual salience. However, as pointed out by Kopecka & Ishibashi (2011) and Kopecka & Vuillermet (in prep.), most of these studies are based on a limited sample of languages and/or on a limited set of examples (see however Stefanowitsch & Rhode 2004; Verkerk 2017; and Stefanowitsch 2018 for larger corpus-based investigations). Hence, the following questions arise: Do speakers of all languages favor the expression of Goal, and express it more often and in a more elaborate way? What is the role of language-specific resources (lexical, morphosyntactic and constructional) in the expression of different portions of Path and the Source/Goal asymmetry? The aim of creating the *Trajectoire* tool was to investigate these questions cross-linguistically on the basis of comparable sets of data collected with the same method and following the same procedure.

3. *Trajectoire*: a dynamic visual tool

3.1 The structure of the *Trajectoire* tool

The structure of the *Trajectoire* tool is inspired by the visual research methods developed at the Max Plank Institute for Psycholinguistics (Nijmegen, NL) for investigating various domains such as *Cut & Break* (Bohnenmeyer, Bowerman & Brown 2001), *Put & Take* (Bowerman et al. 2004) and *Reciprocals* (Evans et al. 2001). Based on previous research on motion events, several parameters were selected in order to design the material (§3.1.1). The core of the elicitation tool consists of 76 video-clips presented in three different orders (§3.1.2). Besides the video-clips, the tool also contains additional methodological material, namely the protocol for data elicitation (§3.1.3) and a pre-established Excel spreadsheet to facilitate both the treatment and the coding of the data collected (§3.1.4).

3.1.1 The parameters

Based on previous research on motion events and the semantic elements postulated in this conceptual domain by Talmy (1985) and Slobin (2004), the ontology of spatial entities proposed by Aurnague et al. (1997) and Aurnague (2004), and research on deixis (Fillmore 1975, Ricca 1993; Wilkins & Hill 1995), we selected several parameters for the design of the *Trajectoire* stimulus set. The video-clips thus vary in terms of the following parameters (see also Kopecka & Ishibashi 2011; Ishibashi 2015): types of Figures, types of

Grounds, Path of motion, Manner and Deixis. Table 1 below presents these parameters in detail.

FIGURE [F]	INDIVIDUAL (man, woman, child) or group of people
GROUND [G]	PLACES: building (cave), road (path, track, bridge), geographical location (sea, fields)
	OBJECTS: basket, tree trunk, rock
	HUMANS: man, woman, child
PATH OF MOTION [P]	ORIENTATION: horizontal (<i>from, to</i>), vertical (<i>up, down</i>)
	SIMPLE PATH WITH vs. WITHOUT BOUNDARY-CROSSING <ul style="list-style-type: none"> i. source-oriented: <i>out of</i> vs. <i>from</i> ii. median-oriented: <i>across</i> vs. <i>past</i> iii. goal-oriented: <i>into</i> vs. <i>to(wards)</i>
	COMPLEX PATH WITH vs. WITHOUT BOUNDARY CROSSING <ul style="list-style-type: none"> i. source- & goal-oriented (e.g. <i>from - to</i>) ii. source- & median-oriented (e.g. <i>out of - up</i>) iii. median & goal (e.g. <i>down</i> and <i>into</i>) iv. source & median & goal-oriented (e.g. <i>out of - past - into</i>)
MANNER [M]	MANNER OF MOTION: <i>walk, run, jump</i>
DEIXIS [D]	CENTRIFUGAL (<i>away from a deictic center</i>) ⁵ vs. CENTRIPETAL (<i>toward a deictic center</i>) vs. TRANSVERSAL (<i>from left to right with respect to a deictic center</i>)

Table 1: *The parameters underlying the design of the Trajectoire material*

The main aim of distinguishing these parameters is to investigate the types of dimensions that speakers of individual languages are sensitive to and to examine the types of constructions they use to encode motion along different Paths. In particular, as Table 1 shows, specific attention was paid to different portions of Path such as the Source (initial point), the Median (intermediate points) and the Goal (final point), and to the spatial configuration of each of these portions on the vertical and horizontal axes. Hence, the stimulus set comprises scenarios with simple Paths (consisting of one reference point) vs. complex Paths (consisting of two or three reference points), and it contrasts Paths with vs. without boundary-crossing (cf. Aske 1989; Slobin 1994). In doing so, our aim was to enable researchers to examine how speakers of typologically different languages distribute spatial information related to Path and its different portions in the linguistic structure,

⁵ We were expecting the camera to be interpreted as the deictic center.

and to investigate whether they allocate more attention to Goals than to Sources when describing motion events, and how this is correlated with the spatial configuration of Path (e.g. vertical vs. horizontal, with vs. without boundary-crossing).

The pictures below are examples of some of the scenarios in the *Trajectoire* stimulus set, including walking out of the woods toward the camera-observer (Figure 2), walking into a cave away from the camera-observer (Figure 3), and jumping from one stone onto another on a transversal axis with respect to the camera-observer (Figure 4).



Figure 2. Scene 027_path



Figure 3. Scene 053_path



Figure 4. Scene 075_path

The following examples, all collected with the *Trajectoire* stimulus set, illustrate how languages can vary with respect to the parameters their speakers are sensitive to: speakers of Ese Ejja use different markers for human vs. non-human Grounds (3a-b) and speakers of East Futunan tend to encode Deixis when describing motion in space (4a-b).

(3) Ese Ejja (Takanan; Vuillermet, accepted)

- a. *Akwi=yasijje poki-ani.*
 tree=ALL go-PRS
 ‘She is going to the tree.’ {traj061_Soo}
- b. *Kwiiiji poki-ani e-pona=ke.*
 man go-PRS NPF-woman=ALL_HUM
 ‘The man is going to the woman.’ {traj036_Sap}

(4) East Futunan (Polynesian; Moysse-Faurie, accepted)

- a. *E ulu atu le ta'ine i loto o le ana.*
 NPST cross CFG SPC girl STAT inside POSS SPC cave
 ‘A girl is getting out of the cave (going away from the camera-observer who is staying in the cave).’ {traj025_FUD}
- b. *E ulu mai le ta'ine ki loto o le ana.*
 NPST cross CPT SPC girl GOAL inside POSS SPC cave
 ‘A girl is entering the cave (towards the deictic centre who is staying in the cave).’ {traj22_FUD}

3.1.2 76 video-clips

Each of the 76 video-clips lasts for 8 to 14 seconds. They subdivide into:

- **2 warm-up video-clips** (named “_training” in the .xls spreadsheet detailed further below), which help to familiarize the speaker with the task and the nature of the materials, and to prepare him or her for the elicitation session. As highlighted by Miller (1973) and Majid (2012: 66–67), and discussed at length in Cáceres (2017), the training is a very important step in order to get “quality data”. In a similar vein, Lüpke (2009: 73) argues that consultant training is one of the key elements for the speaker to execute the task adequately;
- **55 target video-clips** (named “_path”) which show the spontaneous (as opposed to caused) motion of a protagonist (adult or child) in a natural environment (e.g. field, forest, sea) – see Section 3.2 on the constraints of designing an “ecological” stimulus set to be used across cultures. These video-clips are stand-alone scenarios, i.e. they do not relate to each other to make up a story. Many of them have a corresponding scene, like scenes 43 vs. 44 where a woman runs and passes behind a tree (from right to left) vs. runs and passes in front of a tree (from left to right);
- **19 fillers** (named “_filler”) which show static scenes (e.g. a man reading a book) or other activities (e.g. playing the ball), filmed with the same actors in the same environment. These clips are necessary to distract the consultants’ attention from the main goal of the elicitation (here producing the description of motion events), and to prevent them from producing redundant and/or less spontaneous utterances.

Three versions of the material are available to the researcher. Each contains the same video-clips but they are arranged in three different orders to prevent the influence of a possible routine effect during the elicitation session with the speaker. The different orders prove to be useful to detect or confirm possible influences of previous video-clips; consultants sometimes try to relate individual video-clips or to look for a temporal continuity between the events – see ex. (9). During the elicitation session, each consultant sees a single version of the stimulus. Most investigators report an average recording time of 20 to 40 minutes per consultant.

As mentioned earlier, the additional material includes a protocol for data collection, and an Excel spreadsheet for transcribing and coding the data. A feedback questionnaire geared toward the investigators was developed subsequently to elicit critical evaluations regarding the use of the stimulus set. This questionnaire is discussed in Section 4.2 and is available in Appendix 3.

3.1.3 The protocol for data elicitation

The aim of the *Trajectoire* stimulus set is to allow researchers to investigate the expression of Path of motion and to systematically examine the expression (symmetrical or asymmet-

rical) of Source (initial point) and Goal (final point) in typologically varied languages. To facilitate data collection and to ensure comparability, whether the stimulus is used with different speakers of a single language or across languages, we designed a protocol for a data elicitation session. Here is the instruction as provided in our protocol:

“During the elicitation session, sit with the speaker in front of the computer and explain that she or he will see a series of scenes in which someone (a woman, a man or a child) does something, and that, after each scene, she or he will be asked to say what that person did. The first two clips are training videos in order for the speakers to practice the procedure. You can repeat each clip as many times as the speaker needs. You can also take breaks or divide the elicitation session into two or three smaller sessions.

After each clip, ask the speaker “What happened in this clip?”

You can prompt this question after each clip. However, if you feel that the speaker does not need to be reminded of the question that often and that she or he provides the descriptions spontaneously you can stop repeating the question.”⁶

The guiding question “What happened in this clip?” recommended by the protocol is of importance for reproducibility (see e.g. Majid 2012: 70 or Berez-Kroeker et al. 2018). First, it ensures that researchers using the stimulus set formulate the instruction in a similar fashion when working with individual speakers. Second, it enables the comparability of the data across individual languages. We therefore explicitly advised avoiding the use of other instructions such as, for example, “Please, describe what you have just seen”. This kind of instruction might make the speaker focus on the scene setting and prompt descriptions of the background and the protagonists instead of eliciting descriptions of the motion event. The instruction “What happened in this clip?” or “What did the person do?” is more likely to draw the attention of the speaker to the event of motion, and, as suggested by the data collected so far, to elicit short descriptions depicting the Figure’s motion itself.

In order to account for the use of different constructions and morphosyntactic devices, and to delve into the asymmetry in the expression of Sources and Goals, we advocate collecting the data with 12 speakers (four for each version). This allows for a systematic investigation of both main tendencies observed in a given language and interspeaker variation. However, we are aware that it might not be easy to find that many consultants in endangered languages, in which case two or three speakers will still make it possible to collect sufficient data to explore the expression of Path and its portions. Some researchers suggested inviting a pair of speakers, one to watch the videos and the other to listen to the descriptions, in order to create a more natural speech situation. It has been

⁶ The full protocol can be downloaded online in French and English at <http://tulquest.humanum.fr/en/node/132>.

especially helpful with the Stieng speakers, who, due to their language loss, are affected by linguistic insecurity (Bon, 2014; accepted).

As explained in the protocol, an optional elicitation task is proposed to collect descriptions of Path of motion in a narrative context. The researcher can, in addition, ask speakers to describe their most recent journey or to describe how to go from place X to place Y (e.g. from one village to another). This additional elicitation task compensates for the absence of a context for the motion events in the video-clips and, consequently, the expected absence of specific morphosyntactic elements such as, for example, associated motion morphemes or motion-cum-purpose subordinates. This additional data makes it possible to compare spontaneous descriptions of motion and stimuli-based descriptions and hence enriches both the corpus and the analysis.

3.1.4 The pre-established coding spreadsheet

The Excel spreadsheet, of which an excerpt is presented in Appendix A, contains three sheets which correspond to the three versions of the stimulus set (v1, v2, v3). In each sheet, column A (scene_order) corresponds to the ordering of the clips within each version, and column B (scene_code_description) gives the code and a schematic description for each clip (abbreviations are given in a separate sheet named “Abbreviations”.) The schematic description of each clip allows the researcher to easily retrieve a specific scene:

- **051_Path_F_cross_field_front** stands for the video-clip **51**, where a woman (**Female**) [Figure] walks [default Manner of motion, therefore not specified] **across** [Path] a **field** [Ground] toward the camera (**front**) [Deixis];
- **072_Path_M_jump_over_tronc_back** stands for the video-clip **72**, where a man (**Male**) [Figure] **jumps** [Manner] **over** [Path] a log [Ground] away from the camera (**back**) [Deixis];
- **020_Filler_F_plait_hair** stands for the video-clip **20**, which is a **filler** where a woman (**Female**) **plaits** her **hair**.

The Excel spreadsheet facilitates both the coding and the analysis of the data as the coding of the relevant parameters can then easily be sorted and compared across speakers (see Majid 2012: 69).

3.2 An elicitation tool to be used across cultures: design constraints

As pointed out by Lüpke (2009: 70), “one criticism of [Staged Communicative Events]⁷ concerns the lack of universal applicability of visual stimuli, since objects featured in them

⁷ According to Himmelmann (1998), field linguists might record three types of communicative events: Observed Communicative Events are only affected by the presence of the recording devices (and the

may be unknown in the field context, or their depiction may violate cultural taboos". Hence, designing visual stimuli requires specific attention to objects, physical appearances, and settings in order to avoid (as much as possible) situations which may seem inappropriate or focus speakers' attention on the material aspects of the stimuli (see also Du Bois 1980). Since our aim was to design an elicitation tool which could be used in different linguistic and cultural areas, we endeavored to ensure that our stimulus set is "ecologically valid" that is, that it approximates natural settings (see e.g. Guastavino 2009). The two subsections below address our effort and the attention paid to physical appearances of the protagonists and the natural environment in which the scenes took place.

3.2.1 Physical appearance

The physical appearance of the actors was our first concern, as previous studies had shown that unusual physical appearance might distract the speakers (see e.g. Du Bois 1980). As a matter of fact, when describing visual stimuli, speakers might wonder for instance whether actors are male or female (see e.g. Lovick & Tuttle (2019) in this volume), commenting on their hair (e.g. unexpected short hair for a female or unexpected long hair for a male), unusual hairstyle or color or their clothes (e.g. trousers unexpectedly worn by a woman). To avoid such situations, the protagonists in the video-clips are 'standardized', that is, male actors with short hair and wearing trousers, and female actors with long hair and wearing dresses or skirts. While such appearances are not a universal phenomenon, they remain the norm in many cultures. Depending on their culture, consultants might still be confused or even embarrassed to see uncovered heads or arms (our actors wore T-shirts in many cases), even if these elements were not unfamiliar, due to globalization.

The following anecdote underlines the significance of such guidelines on the actors' outfit. A few video-clips feature two young boys in their swimming suits. We thought that these clips would not disturb consultants given that boys are topless in many cultures. This nonetheless resulted in the only "off-topic" comment that Ese Ejja consultants made. Rose (p.c. June 2018) and Ishibashi (2015) report similar comments with Mojeño Trinitario (Arawak) and Japanese speakers respectively, as illustrated in (5). These side comments were by no means problematic for the analysis, but they highlight the importance of consultants' awareness of the physical appearance of the actors.

linguist) and are thus the most natural ones, while Elicitation is the least natural situation. Staged Communicative Events are somewhere in between, and this is where the communicative events prompted by stimuli belong.

- (5) a. Mojeño Trinitario (Arawak; Françoise Rose, p.c. June 2018)

teterepuekoma 'móperu *tiptsino'e* *tjunopopri'i*
t-etere-pue-koma 'moperu *t-iptsino'e* *t-junopo =pri'*
 3-jump-CLF.earth-ACT ART.M.youngster 3-be_naked 3-run =CONC.MOT.IPFV
 'The **naked** boy jumps and runs.' (in Spanish: El chico salta desnudo y trota.)
 {traj034}

- b. Japanese (Ishibashi 2015)

Etto badaka-no syoonen-ga iwaba-o ori-te-i-masu.
 uh **nakedness**-GEN boy-NOM rocky spot-ACC move.down-CONN-PROG-POLI
 'Uh a **naked** boy is moving down a rocky spot.' {traj076_jp10}

3.2.2 Natural environment

The environment in which the scenes took place was another concern. Our aim was to film places and reference points that speakers living in different cultures and environments could easily recognize and talk about. We therefore chose “natural” locations (i.e. Grounds) such as water, fields, caves, and wooden bridges. Consultants who had never seen the sea did not seem to have difficulties in finding an appropriate substitute (e.g. lake or river). The different types of fields (cultivated vs. uncultivated) were easily identified and named. However, the choice of a cave as a reference location proved slightly problematic. We needed to include a closed space in our Ground types, but did not want to use houses, as they would be culturally marked. The rock cave we filmed seemed appropriate, and turned out to be fine with most consultants, but two colleagues reported the following minor problems with this choice.⁸ In (at least) some areas of Eastern Africa, caves are used as healing areas where witchdoctors perform rituals. Therefore, people “drinking tea” in a cave (like in one filler video-clip) or quietly going in or out of it (like in several target video-clips) would be disconcerting for consultants with this cultural background (Margaret Dunham, p.c., October 2017).

The non-existence of specific reference places such as caves or bridges in the consultant’s everyday life constitutes the second problem. Miller (1973) has underlined the importance of representing familiar objects in pictures shown to consultants.⁹ In cultures and ecological settings where caves or bridges are infrequent and/or are not part of daily life, consultants may resort to at least three strategies. They may use loanwords (as did, for example, Wolof and Ese Ejja speakers), which might have an impact on the morpho-phonology. Alternatively, consultants may compose new words to express the concept. Exam-

⁸ The problems are minor in the sense that they only concern the Grounds, did not traumatize the speakers and did not prevent the collection of data.

⁹ He also showed that adequate training would easily overcome the consultant’s difficulties in identifying an object.

ples in (6) show that one of the three Mojeño Trinitario consultants made two non-standardized compounds, resulting in ‘stone interior’. They may also avoid explicitly mentioning the Ground, as did the two other consultants who hardly mentioned the cave.

(6) Mojeño Trinitario (Arawak; Françoise Rose, p.c. June 2018)

- a. *su 'seno tyuchko te marijeku tyopno te to eskárerera*
su 'seno ty-uchu-ko te mari-jeku ty-opno te to eskarera
 F women 3-exit-ACT LOC **stone-interior** 3-go.up LOC NH stairs(Sp)
 ‘The woman goes out of the cave and goes up the stairs.’ {Traj_038_Mar}
- b. *ma 'chane tyuchko te to mariju'e ene*
ma 'chane ty-uchu-ko te to mari-ju'e ene
 M person 3-exit-ACT LOC NH **stone-interior** y
- tsiopo te to 'pochkoyo mariju'e*
ty-siopo te to 'po-chokio mari-ju'e
 3-enter LOC NH other-side **stone-interior**
 ‘The man goes out of the cave and enters the side of the cave.’ {Traj_043_Mar}

Unlike many visual elicitation tools not specifically designed for field-based research, the *Trajectoire* stimulus set was reported by field-researchers to be user-friendly, ecological and adapted to diverse cultural settings. Filmed outdoors, in the natural environment and with “standardized” actors, this stimulus set was designed to avoid distracting consultants, and as a result to produce more spontaneous data. However, one should keep in mind that any visual tool used cross-linguistically is likely to contain elements that might cause problems for some consultants, and it is our responsibility as investigators to check the material beforehand.

4. Actual use and dissemination

The *Trajectoire* tool proves useful for both individual language analysis and cross-language comparison. However, like all visual stimuli, it has its limits. This section offers an overview of the actual use of the stimulus set and its dissemination. The first subsection (§4.1) presents feedback from users, both researchers and consultants. It shows the range of languages in which it was successfully used (§4.1.1), presents some cross-linguistic observations and individual language (re)analysis achieved with the stimulus (§4.1.2), as well as ancillary benefits (§4.1.3). The second subsection (§4.2) discusses the dissemination of the material.

4.1 Feedback from users (researchers and consultants)

4.1.1 Languages and number of speakers

The *Trajectoire* tool was designed in 2006 and since then, it has been used in a variety of linguistic field sites, first by the members of the TRAJECTOIRE project and then by other colleagues around the world. Table 2 lists the languages investigated within the TRAJECTOIRE project and by other colleagues, the number of speakers with whom the stimulus set has been used, as well as the researcher(s) who conducted the data elicitation sessions. The languages are classified here according to continents to better reflect the numerous geographic areas represented, including several remote parts of Amazonia and South-East Asia.

CONTINENT	LANGUAGE	LANGUAGE FAMILY	# OF SPEAKERS	RESEARCHER(S)
EUROPE	German	Germanic	18	B. Fagard
	Swedish	Germanic	18	J. Blomberg, J. Zlatev
	Polish	Slavic	15	A. Kopecka, B. Fagard
	Piemontese	Romance	11	B. Fagard, M. Cerruti
	French	Romance	20	B. Fagard, L. Sarda
	Romanian	Romance	12	C. Papahagi
	French Sign Lang.	Sign language	2	A. Risler
AFRICA	Wolof	Atlantic-Congo	30	S. Voisin
CENTRAL AMERICA	Huastec	Mayan	4	A. Kondic
SOUTH AMERICA	Ye'kwana	Carib	12	N. Cáceres
	Yawarana	Carib	3	N. Cáceres
	Ese Ejja	Takanan	9	M. Vuillermet
	Mojeño Trinitario	Arawak	3	F. Rose
ASIA	Japanese	Isolate	20	M. Ishibashi
	Mandarin Chinese	Sinitic	12	J. Song
	Thai	Tai Kadai	14	J. Zlatev
	Burmese	Tibeto-Burman	10	A. Vittrant
	Hmong Bjo	Hmong-Mien	10	
	Stieng	Môn-Khmer	2	N. Bon
OCEANIA	Futunian/ Fakafutuna	Oceanic	2	C. Moyse-Faurie

Table 2: (Most) languages with which the *Trajectoire* DVD has been used

The speakers recorded in those areas are from non-WEIRD societies (for Western, Educated, Industrialized, Rich, Democratic, see Henrich, Heine & Norenzayan 2010). No other problems than those discussed in Section 3.2 have been reported by the researchers who used this tool so far, which indicates that the stimulus set proves valid in various cultural contexts. Moreover, as reported by researchers who used the tool in the field, speakers tend to enjoy the *Trajectoire* video-clips and describe them with pleasure.

4.1.2 Possible uses: some outcomes

As is the case of the visual methods elaborated at the Max Planck Institute for Psycholinguistics (Nijmegen, NL), the initial inspiration for our elicitation tool, the *Trajectoire* stimulus set too is a useful tool not only for investigating individual languages but also for cross-linguistic comparisons. It enables researchers to collect systematic and cross-linguistically comparable data and to investigate how speakers of different languages describe similar visual scenarios: what type of spatial information attracts speakers' attention? What type of elements do they select for linguistic expression? What kind of lexical, grammatical, and constructional devices do they use when describing motion events and how do they distribute spatial information across the sentence?

Like previous cross-linguistic research based on other types of methods (e.g. Slobin (2004) on the *Frog Story*), studies based on *Trajectoire* data show great cross-linguistic variation in the types of information speakers encode in their descriptions of motion events. In particular, Fagard et al. (2013) report a cross-linguistic analysis on the type of spatial information expressed in six languages in which data were collected using the *Trajectoire* elicitation tool. The authors have compared the descriptions of ten speakers (or more) of languages traditionally classified as satellite-framed (German, Polish and Swedish), verb-framed (French and Piemontese) and equipollently-framed (Thai).¹⁰ As expected, the analyses show that speakers of verb-framed languages express MANNER with a verb significantly less frequently than the other two types of languages. The authors further distinguished the descriptions of the video-clips where MANNER was marked (running or jumping) from those where it was unmarked (walking), and observed that the difference in MANNER expression between verb-framed and satellite- or equipollently-framed languages primarily concerned motion events unmarked for MANNER. In other words, the stimuli in which MANNER was marked typically elicited descriptions with MANNER verbs in all types of languages. They also explored the influence of boundary-crossing constraints (Aske 1989; Slobin & Hoiting 1994), according to which the use of

¹⁰ See Section 2.1. Fagard and colleagues are aware that a dichotomist view is not fully appropriate and that the framing types available for a given speaker in a given language depend on various factors. However, they also recognize that the typology (and observed correlations) is useful in exploring the expression of motion events in details.

MANNER verbs is more restricted in verb-framed languages when the Figure crosses a boundary. Interestingly, not only did speakers of French and Piemontese (verb-framed) turn out to use distinctly fewer MANNER verbs, but speakers of German and Swedish (satellite-framed) also used significantly fewer MANNER verbs compared to speakers of Polish and Thai (satellite- and equipollently-framed, respectively). Examining the patterns in the expression of PATH, researchers again expected a difference between verb-framed languages, on the one hand, and satellite- and equipollently-framed languages, on the other. What they found, however, was a significant difference between Piemontese, French, and German (two verb- and one satellite-framed languages) on the one hand, and Swedish, Thai, and Polish (two satellite- and one equipollently-framed languages) on the other. Finally, they noticed a much lower frequency of verbally expressed DEIXIS (than MANNER or PATH) for all languages. Consequently, the authors conclude that these results are “consistent with proposals that motion event typology should be performed on the basis of separate constructions or strategies, rather than on languages as a whole” (Fagard et al. 2013: 377).

Beyond its value for cross-linguistic investigations, this stimulus set is also very helpful for the thorough investigation of motion events in individual languages. For instance, Ishibashi (2015) is a detailed study on Japanese, based on data collected with 20 speakers using the *Trajectoire* tool. Her study mostly focuses on the use of deictic verbs *kuru* ‘come’ and *iku* ‘go’ in the description of the video-clips. Ishibashi identifies deictic elements in 68% of the clauses of the *Trajectoire* corpus, but notes that not all the uses are deictic: the deictic verbs *kuru* ‘come’ and *iku* ‘go’ may refer to the Figure’s appearance and disappearance respectively. She also observes that, at least in this data set, deictic verbs are rare as simple verbs and overwhelmingly occur in complex verb constructions: 96% of the deictic uses occur in the *V-te V* construction (one of the three complex verb constructions available in Japanese to express motion). Finally, a close inspection of the distribution of deictic verbs shows that there are three factors that play a role in the encoding of deixis:

- the orientation of the Figure’s motion: deictic verbs are not used in descriptions of vertical motion;
- the distance travelled: confirming the claims in Matsumoto (1997), deictic verbs are not used to describe motion over short distances;
- telicity of the event: in describing atelic scenes, there is a competition between the progressive construction (focusing on the ongoing action) and the deictic verb (choice of speaker’s perspective).

A final illustration of the utility of this stimulus set and of controlled parameters concerns a minor point in a recent study on Source-Goal asymmetry in Ese Ejja (Takanan) (Vuillermet, accepted). The prototypical expression of Source in this Amazonian language involves posture verbs, as in (7).

(7) Ese Ejja

- a. [E-iyə=jo *neki*] *towaa-ani*.
 NPF-hill=LOC **be.standing.NF(.ABS)** jump-PRS
 ‘He jumps from the hill.’
 (lit. **Standing** on the hill, he jumps) {traj064_Soo}
- b. E-pona *kwaya-ki-ani* [jjani-’dojjo=jo *ani*].
 NPF-woman(.ABS) go_out-GO_TO_V-PRS hole-inside=LOC **be.sitting.NF(.ABS)**
 ‘A woman is going out of the cave.’
 (lit. **Sitting** in the cave, she goes out) {traj071_Sap}

Posture verbs in Ese Ejja do not always refer to the actual posture of the Figure. For instance, in (7b), the woman was standing rather than sitting in the cave before walking out of it. The posture verb *ani-* ‘be sitting’ was nevertheless used because both female Figures and cave Grounds (and also houses) are culturally associated with the posture verb *ani-* ‘be sitting’. By contrast, male Figures and field Grounds – associated with work achieved in a standing posture – are associated with *neki* ‘be standing’.¹¹ The posture verb in (7a) could thus refer to the actual posture of the male Figure before jumping, or more generally to his gender.

Table 3 illustrates all the utterances of one speaker with the various factors in play. This speaker consistently associates male Figures with a standing posture, and female ones with a sitting posture (even if they are actually standing), unless the Ground is a field: since the field is typically associated with a standing position, and thus the verb *neki* ‘be standing’ is used in the Source expression to refer to a female Figure.

FIGURE	CAVE		FOREST		CORN FIELD		TOP OF CLIFF	
	Sit ¹²	Stand	Sit	Stand	Sit	Stand	Sit	Stand
FEMALE	5		1			1		
MALE		1		1				
MALE (child)		2						1

Table 3: *Influence of Figure gender and Ground type in one Ese Ejja consultant’s recording*

Further relating to the expression of Source, the Ese Ejja data show that this biclausal expression was in competition with another, undedicated adnominal expression (the perlocative-ablative =*jje*). While the first few recordings led the researcher to think that this

¹¹ Rumsey (2002) reports a similar gender/posture association in Papuan languages, but, unlike in Ese Ejja, only gender and not Grounds seem to have an influence in these languages.

¹² Note that the moving Figure is standing in all the video-clips.

perlative-ablative was restricted to a dialectal variant, the final corpus of nine speakers made it possible to abandon this hypothesis.

The summary of these three studies shows that the *Trajectoire* tool can serve different goals and approaches. Further outcomes of this elicitation method are chapters of dissertations on individual languages (Cáceres 2011 on Ye'kwana (Cariban); Kondic 2012 on Huastec (Mayan); Vuillermet 2012 on Ese Ejja (Takanan); Bon 2014 on Stieng (Austro-Asiatic); Parajuli *in prep.* on Nepali; Song *in prep.* on Mandarin Chinese), various articles mentioned above, and a collection of papers in a special issue of *Studies in Language* (Kopecka, Ishibashi & Vuillermet *in prep.*).

4.1.3 Ancillary benefits

This subsection lists a number of benefits obtained with the *Trajectoire* stimulus set that we did not initially anticipate when designing the material.

Imperfective constructions

The fillers included in the material represent ongoing activities, rarely present in texts (but occurring more frequently in spontaneous conversations). The Ese Ejja speakers produced several instances of the infrequent imperfective construction with double absolutes (Vuillermet 2012: 482-485), as exemplified in (8).

(8) Ese Ejja

- | | | | | | |
|----|--|---------------|--------------|----------------|---------------|
| a. | <i>Kwiji</i> | <i>weshe</i> | <i>ijjia</i> | <i>po-ani.</i> | |
| | male.ABS | banana.ABS | eat | be-PRS | |
| | 'A male is eating a banana (lit. is banana-eating).' | | | | {traj004_Lev} |
| | | | | | |
| b. | <i>Dejja</i> | <i>papeni</i> | <i>a</i> | <i>po-ani.</i> | |
| | man.ABS | paper.ABS | do | be-PRS | |
| | 'A man is reading a paper (lit. is paper-doing).' | | | | {traj003_Nil} |

Associated motion morphemes

Associated motion morphemes associate motion with a (typically) non-motion event¹³ (see Guillaume 2016 for a recent typological account of this category). Their function is to “tag” motion in successive events throughout a story, and they are thus highly discursive. As the stimulus displays stand-alone video-clips, we did not expect speakers to produce such morphemes. However, some Ese Ejja speakers, like consultants in other languages, tried to link some video-clips to others, producing these unexpected mor-

¹³ Unlike directionals, which typically associate *direction* or *path* with a *motion* event (like in ‘move *up*’, ‘move *away*’, etc.).

phemes. In the example (9) below, a woman is described as running “back” (lit. run-**do.re-turning**) because of a previously displayed corresponding video-clip which show her coming from the opposite direction.

- (9) *E-pona wakwaya kwajikwaji-je’be-’io-ani.*
 NPF-woman here run-**DO.RETURNING**-TEL-PRS
 ‘The woman is running back here.’

Structural homogeneity

Visual stimuli have often been criticized for yielding artificial structural homogeneity, but such homogeneity has advantages, too. Since the video-clips in our stimulus set show separate motion events with no links to each other, displaying new protagonists and new reference points and settings that need to be specified, even speakers of pro-drop languages regularly expressed the arguments of the verb. This hardly happens (if ever) in spontaneous speech. Ese Ejja consultants, for instance, produced more explicit NPs in the *Trajectoire* elicitation sessions than in most other communicative events recorded.

On the other hand, the presence of explicit NPs facilitated the following observation: speakers’ descriptions are overwhelmingly verb-final, nicely illustrating that pragmatic neutrality yields the least marked constituent order in Ese Ejja. (Ese Ejja has a flexible word order in main clauses, but some features show that it can be considered a verb-final language, e.g. it is obligatory verb-final in dependent clauses.)

4.2 Dissemination

When the *Trajectoire* tool was first created (2006), its use was mainly restricted to members of the TRAJECTOIRE research project, and then shared on request. Unfortunately, we failed to keep track of colleagues who used the material to collect data in different languages and were unable to collect feedback from them. Therefore, we subsequently created a spreadsheet with the full name and e-mail address of colleagues, and their language(s) of study.

The full *Trajectoire* tool, including the video-clips, the protocol (in French and in English) and the feedback questionnaire are available and can be downloaded from the Questionnaire website TulQuest (<http://tulquest.huma-num.fr/en/node/132>).¹⁴ We invite linguists interested in using this stimulus set to contact us to help us keep track of languages for which data has been collected, to share their experience with using the elicitation material within a given linguistic community, and to cite it as follows:

¹⁴ The video-clips appear as a disc image and can be read with any DVD (e.g. VLC Media Player, Windows Media Player, QuickTime)

Ishibashi, Miyuki, Kopecka, Anetta & Vuillermet, Marine. 2006. *Trajectoire : matériel visuel pour élicitation des données linguistiques*. Laboratoire Dynamique du Langage, CNRS / Université Lyon 2. Projet de Fédération de recherche en Typologie et Universaux Linguistiques. <http://tulquest.huma-num.fr/fr/node/132>.

5. Conclusion

The initial aim in designing the *Trajectoire* stimulus set was to provide researchers with a methodological tool to collect linguistic data to investigate the expression of Path of motion in typologically varied languages. The first results have shown that the material meets the objectives we set at the beginning, as speakers from diverse cultural backgrounds not only produced highly relevant descriptions of Path of motion and its portions, but mostly enjoyed the elicitation task.

In addition, the stimulus set proved to be an efficient tool for several reasons: the task is clear and does not yield problems of comprehension; it is not time-consuming and does not involve particular effort on behalf of the consultants; and it yields a considerable amount of data (55 target clips and at least as many motion clauses). Furthermore, as for most visual stimuli, the transcription and translation are made easy by the shared context, and the analysis is facilitated by the available spreadsheet. Based on the data collected with this stimulus set, research questions can range from intra- and inter-speaker variation within a single language to cross-linguistic studies.

To conclude, with regard to dissemination, we have observed that authors tend to pay less attention to the correct citation of elicitation tools than of scientific papers, both within articles or chapters and in the final reference sections. We would like to emphasize here that approximate or incomplete citations do not help an efficient dissemination. We hope that our recent archiving at TulQuest will help researchers to cite the elicitation material adequately and facilitate its dissemination, so that the expression of Path of motion and the (a)symmetry between Source and Goal can be investigated in a systematic way in more languages.

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[Trajectoire 2](#) 2008-2011). Finally, we are grateful to Aimée Lahaussais, Françoise Rose, and two anonymous reviewers for helpful comments and suggestions on the previous version of this paper.

Appendix A. Excerpt from the list of the scenes & their description (Version 1)

scene order_version 1	scene code_description
V1_scene01_010	010_training_M_handpass_ball_to_F
V1_scene02_013	013_training_F_spread_blanket
V1_scene03_076	076_Path_C_walk_down_rock_front
V1_scene04_031	031_Path_M_run_outof_sea_sideRL
V1_scene05_006	006_Filler_M_drink_water
V1_scene06_074	074_Path_F_walk_up_from_lake_front
V1_scene07_022	022_Path_F_walk_down_into_cave_front
V1_scene08_072	072_Path_M_jump_over_tronc_back
V1_scene09_050	050_Path_C_cross_water_sideRL
V1_scene10_002	002_Filler_M_sleep_side
V1_scene11_039	039_Path_M_walk_behind_tree_sideLR
V1_scene12_019	019_Filler_F_comb_hair
V1_scene13_065	065_Path_C_walk_up_path_side_LR
V1_scene14_045	045_Path_3_walk_across_bridge_back
V1_scene15_064	064_Path_C_jump_from_cliff_into_water_sideLR
V1_scene16_059	059_Path_C_run_into_sea_sideRL
V1_scene17_036	036_Path_M_walk_toward_F_back
V1_scene18_001	001_Filler_M_pick_fruit_back
V1_scene19_051	051_Path_F_cross_field_front
V1_scene20_068	068_Path_M_walk_front_people_into_cave_back
V1_scene21_018	018_Filler_F_footpass_ball_to_M
V1_scene22_052	052_Path_F_cross_field_back
V1_scene23_042	042_Path_C_run_behind_stone_sideLR
V1_scene24_024	024_Path_F_walk_out_take_walk_into_cave_back
V1_scene25_009	009_Filler_M_footpass_ball_to_F
V1_scene26_069	069_Path_F_walk_into_field_sideLR
V1_scene27_056	056_Path_M_walk_into_bush_back
V1_scene28_034	034_Path_C_jump_from_stone_run_front
V1_scene29_011	011_Filler_F_give_banana
V1_scene30_020	020_Filler_F_plait_hair

Appendix B. Feedback questionnaire about the use of the material

The aim of the “Trajectoire” elicitation material is to facilitate the investigation of the expression of Path of motion in typologically varied languages. We hope that this material will help you to collect interesting data and examine how the language(s) you work on express Path of motion, and Motion events in general. In return, we would be very interested to know if the material proved useful, how easy or difficult it was to use it in your field site, how it was received by the speakers of the language(s) you work with. For this reason, we would be grateful if you could fill in the following questionnaire and send it back to us as feedback.

1. First name / Last name of the researcher / email address
2. Name and family of the language studied
3. Number and (approximate) age of consultants with whom the elicitation material was used
4. Did the elicitation material help to collect Path data? If not, could you explain why?
5. Did you collect other interesting data not related to the expression of Path? If yes, what kind?
6. Did you feel comfortable using this elicitation material in your field?
7. Did the consultants feel comfortable using this material?
8. How did the consultants react on seeing it and using it (e.g. they encountered some difficulties such as they did not recognize characters or did not understand specific video-clips; they enjoyed describing the video-clips, etc.)?
9. Have you ever used another elicitation material(s) in your field? If yes, could you briefly describe what kind of materials (please give a reference if you can)? How the use of the “Trajectoire” material compare to the use of other elicitation tools (e.g. was it easier more difficult)?
10. Do you have any suggestion how this elicitation material could be improved based on the experience you had with it in your field?

References

- Aske, Jon. 1989. Path predicates in English and Spanish: a closer look. In Hall, Kira & Meacham, Michael & Shapiro, Richard (eds.), *Proceedings of the fifteenth annual meeting of the Berkeley Linguistics Society, General session and parasession on theoretical issues in language reconstruction*, 1–14. Berkeley.
- Aurnague, Michel, & Vieu, Laure & Borillo, André. 1997. Représentation formelle des concepts spatiaux dans la langue. In Denis, Michel (ed.), *Langage et cognition spatiale*, 69–102. Paris: Masson.
- Aurnague, Michel. 2004. *Les structures de l'espace linguistique: regards croisés sur quelques constructions spatiales du basque et du français* (Bibliothèque de l'information Grammaticale 56). Louvain; Dudley, Ma: Peeters.
- Berez-Kroeker, Andrea L. & Gawne, Lauren & Kung, Susan Smythe & Kelly, Barbara F. & Heston, Tyler & Holton, Gary & Pulsifer, Peter & Beaver, David I. & Chelliah, Shobhana & Dubinsky, Stanley & Meier, Richard P. & Thieberger, Nick & Rice, Keren & Woodbury, Anthony C. 2018. Reproducible research in linguistics: A position statement on data citation and attribution in our field. *Linguistics* 56(1). 1–18. doi:10.1515/ling-2017-0032.
- Bohnemeyer, Jürgen & Bowerman, Melissa & Brown, Penelope. 2001. Cut and break clips. In Levinson, Stephen C. & Enfield, Nicholas J. (eds.), *Manual for the field season 2001*, 90–96. Nijmegen: Max Planck Institute for Psycholinguistics.
- Bohnemeyer, Jürgen & Eisenbeiß, Sonja & Narasimhan, Bhuvana. 2001. Event triads. In Levinson, Stephen C. & Enfield, Nicholas J. (eds.), *Manual for the field season 2001*, 101–115. Nijmegen: Max Planck Institute for Psycholinguistics.
- Bon, Noëllie. 2014. *Une grammaire de la langue stieng, langue en danger du Cambodge et du Vietnam*. Université Lumière Lyon 2. (Doctoral dissertation.)
- Bon, Noëllie. *accepted*. Expression of spontaneous motion events in Stieng: An exploration of source-goal asymmetries. In Kopecka, Anetta, Miyuki Ishibashi & Marine Vuillemermet (eds.), *Source-Goal (a)symmetries* (Studies in Language).
- Bourdin, Philippe. 1997. On goal-bias across languages: modal, configurational and orientational parameters. *Proceedings of the LP'96: Typology, prototypes, item orderings and universals*, 185–216. Prague, August 20-22, 1996.
- Bowerman, Melissa & Gullberg, Marianne & Majid, Asifa & Narasimhan, Bhuvana. 2004. Put project: The cross-linguistic encoding of placement events. In Majid, Asifa (ed.), *Field Manual Volume 9*. 10–24. doi:10.17617/2.492916.
- Bowerman, Melissa & Pederson, Eric. 1992. Topological Relations Picture Series. In Levinson, Stephen C. (ed.), *Space stimuli kit 1.2: November 1992*, vol. 51. Nijmegen: Max Planck Institute for Psycholinguistics.
- Cáceres, Natalia. 2011. *Grammaire fonctionnelle-typologique du ye'kwana, langue caribe du Venezuela*. Université Lyon 2. (Doctoral dissertation.)
- Cáceres, Natalia. 2017. Adapting experimental visual stimuli protocols for wider use. (Paper presented at the Workshop on questionnaires for linguistic description and typology, University of Paris Diderot, Paris, France, 9 November 2017.)
- Chafe, Wallace L. 1980. *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production*. Norwood, NJ: ALEX Publishing Corporation.

- Danziger, Eve. 1995. Posture verb survey. In David P. Wilkins (ed.), *Extension of space and beyond: manual for field elicitation for the 1995 field season*, 33–34. Nijmegen: Max Planck Institute for Psycholinguistics.
- Du Bois, John W. 1980. Introduction. The search for a cultural niche: Showing the pear film in a Mayan community. In Chafe, Wallace L. (ed.), *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production.*, 1–8. Norwood, NJ: ALEX Publishing Corporation.
- Evans, Nicholas & Levinson, Stephen C. & Enfield, N. J. & Gaby, Alice & Majid, Asifa. 2001. Reciprocal constructions and situation type. In Majid, Asifa (ed.), *Field Manual Volume 9*, 25–30. Nijmegen: Max Planck Institute for Psycholinguistics.
- Fagard, Benjamin & Zlatev, Jordan & Kopecka, Anetta & Cerruti, Massimo & Blomberg, Johan. 2013. The Expression of Motion Events: A Quantitative Study of Six Typologically Varied Languages. *Annual Meeting of the Berkeley Linguistics Society* 39(1). 364. doi:10.3765/bls.v39i1.3893.
- Fillmore, Charles J. 1975. *Santa Cruz lectures on deixis 1971*. Bloomington: Indiana University Linguistics Club.
- Fortis, Jean-Michel & Vittrant, Alice. 2011. L'organisation syntaxique de l'expression de la trajectoire : vers une typologie des constructions. *Les Cahiers de Faits de Langues. Dossier: La Trajectoire* 3. 71–98.
- Fortis, Jean-Michel & Vittrant, Alice. 2016. On the morpho-syntax of path-expressing constructions: toward a typology. *Language Typology and Universals – STUF (Sprachtypologie und Universalienforschung)* 3. 341–374.
- Grinevald, Colette. 2011. On constructing a working typology of the expression of PATH. *Les Cahiers de Faits de Langues*, vol. 3, 43–70. Paris: Ophrys.
- Guastavino, Catherine. 2009. Validité écologique des dispositifs expérimentaux. Pour qui ? Pour quoi ? Pour quoi en faire ? In Dubois, Danièle (ed.), *Le sentir et le dire: concepts et méthodes en psychologie et linguistique cognitives* (Sciences Cognitives), 233–252. Paris: L'Harmattan.
- Guillaume, Antoine. 2016. Associated motion in South America: typological and areal perspectives. *Linguistic Typology* 20(1). 81–177.
- Henrich, Joseph & Heine, Steven J. & Norenzayan, Ara. 2010. The weirdest people in the world? *Behavioral and Brain Sciences* 33(2–3). 61–83. doi:10.1017/S0140525X0999152X.
- Himmelman, Nikolaus P. 1998. Documentary and Descriptive Linguistics. *Linguistics* 36. 161–195.
- Ibarretxe-Antuñano, Iraide. 2009. Path salience in motion events. In Guo, Jiansheng & Lieven, & Budwig, Elena Nancy & Ervin-Tripp, Susan & Nakamura, Kei & Özçalikan, Seyda (eds.), *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin (Psychology Press Festschrift Series)*, 403–414. Psychology Press. New York.
- Ikegami, Yoshihiko. 1987. “Source” vs “Goal”: A case of linguistic dissymmetry. In René Dirven & Günter Radden (eds.), *Concepts of Case*, 122–146. Tübingen: Günter Narr Verlag.
- Imbert, Caroline. 2012. Path: Ways Typology has Walked Through it. *Language and Linguistics Compass* 6(4). 236–258. doi:10.1002/lnc3.329.
- Ishibashi, Miyuki. 2015. A field method to describe spontaneous motion events in Japanese. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society* 41. 197–218. doi:10.20354/B4414110006.

- Ishibashi, Miyuki & Kopecka, Anetta & Vuillermet, Marine. 2006. *Trajectoire : matériel visuel pour élicitation des données linguistiques*. Laboratoire Dynamique du Langage, CNRS, Université Lyon 2. Projet de Fédération de recherche en Typologie et Universaux Linguistiques. <http://tulquest.huma-num.fr/fr/node/132>.
- Kondic, Ana. 2012. *A grammar of South Eastern Huastec, a Mayan language from Mexico*. Sydney University & Université Lumière Lyon 2. (Doctoral dissertation.)
- Kopecka, Anetta. 2004. *Étude typologique de l'expression de l'espace : localisation et déplacement en français et en polonais*. Université Lumière Lyon 2. (Doctoral dissertation.)
- Kopecka, Anetta. 2006. The semantic structure of motion verbs in French. Typological perspectives. In Hickmann, Maya & Robert, Stéphane (eds.), *Space in languages: linguistic systems and cognitive categories* (Typological Studies in Language v. 66), 83–101. Amsterdam, Philadelphia: J. Benjamins.
- Kopecka, Anetta & Ishibashi, Miyuki. 2011. L'(a)symétrie dans l'expression de la Source et du But : perspective translinguistique. *Les Cahiers de Faits de Langues. Dossier: La Trajectoire*, vol. 3, 131–149.
- Kopecka, Anetta & Ishibashi, Miyuki & Vuillermet, Marine (eds.). in prep. *Source/Goal (a)symmetry across languages* (Special Issue of Studies in Language).
- Kopecka, Anetta & Vuillermet, Marine. in prep. *Source/Goal (a)symmetry: An introduction*. In Kopecka, Anetta, Miyuki Ishibashi & Marine Vuillermet (eds.), *Source/Goal (a)symmetry across languages* (Special Issue of Studies in Language).
- Lahaussais, Aimée. 2019. The TULQuest linguistic questionnaire archive. In Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 31-44.
- Lakusta, Laura & Landau, Barbara. 2005. Starting at the end: the importance of goals in spatial language. *Cognition* 96(1). 1–33. doi:10.1016/j.cognition.2004.03.009.
- Levinson, Stephen C. 1992. Space in Australian languages questionnaire. In Levinson, Stephen C. (ed.), *Space stimuli kit 1.2: November 1992*, 29–40. Nijmegen: Max Planck Institute for Psycholinguistics.
- Levinson, Stephen C. 1996. Language and space. *Annual Review of Anthropology* 25(1). 353–382. doi:10.1146/annurev.anthro.25.1.353.
- Levinson, Stephen C. 2001. Space: Linguistic expression. In Smelser, Neil J. & Baltes, Paul B. (eds.), *International encyclopedia of the social & behavioral sciences: Vol 22*, 14749–14752. Oxford: Pergamon.
- Lovick, Olga & Tuttle, Siri G. 2019. Video elicitation of negative directives in Alaskan Dene languages: reflections on methodology, in Lahaussais, Aimée & Vuillermet, Marine (eds.), *Methodological Tools for Linguistic Description and Typology*, Language Documentation & Conservation Special Publication No. 16. Honolulu: University of Hawai'i Press. 125-154.
- Lüpke, Friederike. 2009. Data collection methods for field-based language documentation. *Language Documentation and Description*, vol. 6, 53–100. London: SOAS.
- Majid, Asifa. 2012. A guide to stimulus-based elicitation for semantic categories. In Thieberger, Nicholas (ed.), *The Oxford handbook of linguistic fieldwork*, 54–71. New York: Oxford University Press.
- Matsumoto, Yo. 1997. Kuukan idoo-no gengohyogen-to sono kakutyoo. In Nakau, Minoru (ed.), *Nichi-ei hikaku sensho 6: Kuukan-to idoo-no hyoogen*, 125-230. Tokyo: Kenkyusha.

- Matsumoto, Yo. 2003. Typologies of lexicalization patterns and event integration: clarifications and reformulations. In Chiba, Shuji (ed.), *Empirical and theoretical investigations into language: A Festschrift for Masaru Kajita*, 403–418. Tokyo: Kaitakusha.
- Miller, George A. & Johnson-Laird, Philip N.. 1976. *Language and perception*. Cambridge, Mass.: Belknap Press of Harvard University Press. (31 May, 2018).
- Miller, Robert J. 1973. Cross-cultural research in the perception of pictorial materials. *Psychological Bulletin* 80(2). 135–150.
- Moysse-Faurie, Claire. accepted. Linguistic expressions of Goal, Source and Place in Polynesian languages. In Kopecka, Anetta & Ishibashi, Miyuki & Vuillermet, Marine (eds.), *Source-Goal (a)symmetries* (Studies in Language).
- O'Connor, Loretta. 2007. *Motion, transfer and transformation: the grammar of change in lowland Chontal* (Studies in Language Companion Series v. 95). Amsterdam ; Philadelphia: John Benjamins Pub.
- Parajuli, Krishna Prasad. in prep. *Motion events in Nepali*. Université Lumière Lyon 2. (Doctoral dissertation.)
- Pederson, Eric. Questionnaire on event realization. In David P. Wilkins (ed.), *Extension of space and beyond: manual for field elicitation for the 1995 field season*, 54–60. Nijmegen: Max Planck Institute for Psycholinguistics.
- Ricca, Davide. 1993. *I verbi deittici di movimento in Europa: una ricerca interlinguistica*. Firenze: La Nuova Italia Editrice.
- Regier, Terry & Zheng, Mingyu. 2007. Attention to Endpoints: A Cross-Linguistic Constraint on Spatial Meaning. *Cognitive Science* 31(4). 705–719.
doi:10.1080/15326900701399954.
- Rumsey, Alan. 2002. Men stand, women sit: On the grammaticalization of posture verbs in Papuan languages, its bodily basis and cultural correlates. In Newman, John (ed.), *The Linguistics of Sitting, Standing, and Lying* (Typological Studies in Language), vol. 51, 179–211. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- San Roque, Lila & Gawne, Lauren & Hoenigman, Darja & Miller, Julia Colleen & Rumsey, Alan & Spronk, Stef & Carroll, Alice & Evans, Nicholas. 2012. Getting the Story Straight: Language Fieldwork Using a Narrative Problem-Solving Task. *Language Documentation and Conservation* 6. 135–174.
- Slobin, Dan Isaac. 1996. From “thought and language” to “thinking for speaking.” In Gumperz, John J. & Levinson, Stephen C. (eds.), *Rethinking linguistic relativity*. 70–96.
- Slobin, Dan Isaac. 1997. Mind, code, and text. In Bybee, Joan & Haiman, John & Thompson, Sandra (eds.), *Essays on Language Function and Language Type. In honor of Tom Givón.*, 437–467. Amsterdam / Philadelphia: John Benjamins.
- Slobin, Dan Isaac. 2004. The many ways to search for a frog: linguistic typology and the expression of motion events. In Strömquist, Sven & Verhoeven, Ludo (eds.), *Relating Events in Narrative: Typological and Contextual Perspectives*, vol. 2, 219–257. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Slobin, Dan Isaac & Hoiting, Nini. 1994. Reference to movement in spoken and signed languages: Typological considerations. *Proceedings of the Twentieth Annual Meeting of the Berkeley Linguistics Society: General Session Dedicated to the Contributions of Charles J. Fillmore*, 487–505. University of California, Berkeley.
- Song, Jin-Ke. in prep. *La deixis dynamique dans l'expression du mouvement en chinois mandarin*. Université Lumière Lyon 2 & INALCO. (Doctoral dissertation.)
- Stefanowitsch, Anatol. 2018. The goal bias revisited: A collostructional approach. *Yearbook of the German Cognitive Linguistics Association* 6(1). 143–166. doi:10.1515/gcla-2018-0007.

- Stefanowitsch, Anatol & Rhode, Ada. 2004. The goal bias in the encoding of motion events. *Studies in Linguistic Motivation*, 249–267. Mouton de Gruyter. Berlin.
- Talmy, Leonard. 1972. *Semantic structures in English and Atsugewi*. University of California. Berkeley. (Doctoral dissertation.)
- Talmy, Leonard. 1985. Lexicalization patterns: Semantic structure in lexical forms. In Shopen, Timothy (ed.), *Language typology and syntactic description: Grammatical categories and the lexicon*, vol. Volume 3, 57–149. Cambridge: Cambridge University Press.
- Verkerk, Annemarie. 2017. The goal-over-source principle in European languages: Preliminary results from a parallel corpus study. In Luraghi, Silvia & Nikitina, Tatiana & Zanchi, Chiara (eds.), *Studies in Language Companion Series*, vol. 188, 1–40. Amsterdam: John Benjamins Publishing Company. doi:10.1075/slcs.188.01ver. <https://benjamins.com/catalog/slcs.188.01ver> (21 June, 2018).
- Vuillermet, Marine. 2012. *A grammar of Ese Ejja, a Takanan language of the Bolivian Amazon*. Université Lumière Lyon 2. (Doctoral dissertation.)
- Vuillermet, Marine. Accepted. Asymmetries in Ese Ejja. In Kopecka, Anetta & Ishibashi, Miyuki & Vuillermet, Marine (eds.), *Source-Goal (a)symmetries* (Studies in Language).
- Wälchli, Bernhard & Sölling, Arnd. 2013. The encoding of motion events: Building typology bottom-up from text data in many languages. In Goschler, Juliana & Stefanowitsch, Anatol (eds.), *Variation and change in the encoding of motion events* (Human Cognitive Processing v. 41), 77–113. Amsterdam ; Philadelphia: John Benjamins Publishing Company.
- Wilkins, David. 1993. Route description elicitation. In Levinson, Stephen C. (ed.), *Cognition and space kit (version 1.0): July 1993*, 15–28. Nijmegen: Max Planck Institute for Psycholinguistics.
- Wilkins, David & Hill, Deborah. 1995. When “go” means “come”: questioning the basicness of basic motion verbs. *Cognitive Linguistics* 6(2/3). 209–259.
- Zlatev, Jordan & Yangklang, Peerapat. 2004. A third way to travel: The place of Thai in motion-event typology. In Strömquist, Sven & Verhoeven, Ludo (eds.), *Relating Events in Narrative: Typological and Contextual Perspectives*, vol. 2, 159–190. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Video elicitation of negative directives in Alaskan Dene languages: Reflections on methodology

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In this paper, we describe the use of video stimuli for the targeted elicitation of negative directives in Denaakk'e (Koyukon) and Nee'andeegn' (Upper Tanana), two severely endangered Alaskan Dene languages. Negative directives are extremely rare in our previously collected data, yet they exhibit a great variety of forms. Forms further seem to depend on several factors, particularly on whether the prohibited act violates social norms known as *hutlaanee/ijjih*. To better understand the variety of on-record and off-record forms, we created video clips showing activities violating *hutlaanee/ijjih* and activities that are merely foolish or mildly dangerous. After viewing the clips, our consultants were asked to advise the actors as if they were their grandchildren. Their responses were discussed at length with the speakers. The speakers greatly enjoyed this task and produced a great variety of on-record and off-record responses including some unusual linguistic structures. In both languages, off-record expressions were preferred over direct ones, particularly in situations where *hutlaanee/ijjih* was involved. We also identified several conventionalized off-record strategies. The emphasis on *hutlaanee/ijjih* made the task interesting and relevant for speakers. While our stimuli are designed for work with Alaskan Dene, the method can be adapted for cultural contexts around the world.

Keywords: negative directives, prohibitives, video elicitation, taboo, Northern Dene/Athabaskan

1. Introduction

In this paper, we describe a methodology for eliciting negative directive strategies in two severely endangered Alaskan Dene (Athabascan) languages, Denaakk'e (Koyukon; koy) and Nee'aandeeḡn' (Upper Tanana; tau). The Dene language family includes around 40 languages. The northern group, comprising around 25 languages, is spoken from western interior Alaska to northwestern Canada, down to Calgary (Alberta) in the South and almost to the Hudson Bay in the East.

Directives, as defined by Searle (1976:11), are “attempts (...) by the speaker to get the hearer to do something.” He notes that such attempts can be very “modest” (for example, a yoga teacher’s instruction *I invite you to deepen your breathing*) or “fierce” (such as a military command like *Right face!*). Negative directives, conversely, are attempts by the speaker to get the hearer to do something so that a certain state of affairs does not hold. The most conventionalized form of a positive directive is often labeled “imperative”, and that of a negative directive, “prohibitive”. By uttering a directive, the speaker displays a certain degree of disregard for the hearer’s freedom of action, which leads Brown & Levinson (1987) to consider “commanding” “one of the most intrinsically face-threatening speech acts” (p. 191). As a result, many languages have elaborate strategies to avoid uttering (bald, on-record)¹ imperatives and prohibitives, see e.g. Brown & Levinson (1987:140-141) for examples from Tzeltal, or Rushforth & Chisholm (1990) for examples from Bear Lake Dene.

Typologically, prohibitives tend to be non-compositional in that most languages do not form them using the default imperative form plus the standard (declarative) negation marker (van der Auwera, Lejeune, Goussev 2013). Additionally, many languages have several constructions that could be labeled as “prohibitive”, some of them clearly conventionalized (van der Auwera & Devos 2012:174). Prohibitives are intrinsically face-threatening in two ways: not only do they impinge on an individual’s freedom of action, but they additionally can be interpreted as “expressions of disapproval, criticism, ... and reprimands” (Brown & Levinson 1987:66).

Tuttle & Lovick (2014) and Lovick & Tuttle (2015) identified two challenges for the study of negative directives in Alaskan Dene languages: (1) determining which speech acts do and do not count as attempts to utter a negative directive and (2) understanding why a

¹ Brown & Levinson (1987:68f.) treat a speech act as “on record” when there is “just one unambiguously attributable intention”. An imperative “Sit down!” would count as an on-record directive. They consider a speech act bald when it is done “in the most direct, clear, unambiguous, and concise way possible”, without mitigation or redress (p. 69). Thus, “Sit down!” would be “bald”, on record; “Sit down, please.” would be on record, with redress; and “Why don’t you sit down.” would be off record.

particular form was used in any given context. These challenges were compounded by (3) the rarity of negative directives in the documentary record combined with the fact that both languages are no longer used for everyday communication. In order to increase our understanding of negative directive formation and use, we needed to develop a methodology that would not only yield a greater number of tokens, but also generate a variety of forms produced in a variety of contexts. Of particular importance for the present paper is the distinction between “ethical” and “immediate” negative directives alluded to in Jetté & Jones (2000:303) (see § 2.2).

Appropriate categorization of negative directives requires detailed contextual analysis, including information about the speech act participants and their relationship, the situation of the speech act, the prohibited act itself, the reason why it is prohibited, etc. The development of our methodology was motivated by our desire to have more examples where we have access to this information in order to better understand the influence of *hwtlaanee/ijjih* on prohibitive formation and use.

This paper is structured as follows. Section 2 contains information on the languages (§2.1), relevant distinctions within negative directives especially in Dene languages (§2.2), and the most easily elicited prohibitive constructions in the two languages (§2.3). Section 3 describes our methodology: our goals are refined in Section 3.1, the videos are described in Section 3.2, and the protocol in Section 3.3. Section 4 offers an evaluation of the methodology; the advantages are listed in Section 4.1, the disadvantages in Section 4.2. These sections are supplemented with numerous examples elicited using this method. We briefly discuss the adaptability of the stimuli to other field situations in Section 4.3. Section 5 concludes the paper.

2. Background

2.1 Languages

Our study focuses on two languages: Denaakk’e and Nee’aandeegn’, both highly endangered Dene languages spoken by a small number of (mostly) elderly people. Dene languages are polysynthetic and overwhelmingly prefixing. Verbal morphology is often represented using a template such as the one in Table 1 for Nee’aandeegn’.² Lexical morphemes are interspersed with grammatical ones throughout the verb word. Since the focus of this paper is not morphology, we provide simplified word glosses containing a

² The Denaakk’e template in Axelrod (1993:15) is much more detailed; the major difference to the Nee’aandeegn’ one is that the Distributive and the Incorporate occur in the opposite order.

lexical gloss plus participant and aspectual information, rather than full interlinear glosses.

12	11	10	9	8	7	6	5	4	3	2	1	0	-1
Postpositional object	Postposition	Adverbial-derivational	Iterative	Incorporate	Distributive	Pronominal	Qualifier	Conjugation	Aspect/Mode	Subject	Voice/valence marker	Stem	Suffix

Table 4: *Nee'aandeegn'* verbal template

The languages differ with respect to the amount of available description and documentation.

2.1.1 Denaakk'e

Denaakk'e (Koyukon) is spoken by several hundred people in the central to western interior of Alaska. There are three dialects: Upper, spoken at Tanana, Rampart, Beaver and Stevens Village; Central, spoken at Koyukuk, Huslia, Ruby and Hughes; and Lower, spoken at Kaltag and Nulato. Central Denaakk'e has the most speakers, and Upper Denaakk'e the fewest, though Lower Denaakk'e is now also spoken by very few people. Denaakk'e is very well documented lexically, with a major dictionary (Jetté & Jones 2000) as well as a learner's dictionary (Jones 1978a). There are several major collections of texts (Attla 1983, 1989, 1990, Jones 1982) and publications dealing with verbal art (Jones & Henry 1976, Jones & Solomon 1978). Numerous learning materials include Thompson, Axelrod & Jones (198Z3) and Jones & Kwaraceius (1997). While there is no published reference grammar of this language, these materials, supplemented by Jetté & Jones (2000), provide considerable grammatical coverage.

2.1.2 Nee'aandeegn'

Nee'aandeegn' (Upper Tanana) is spoken by fewer than 50 elderly people in eastern interior Alaska and in the Yukon Territory. Of the five dialects identified by Minoura (1994), only three are spoken today (Tetlin, Northway, and Beaver Creek). Lexical resources for Nee'aandeegn' include a learner's dictionary (Milanowski & Jimerson 1975, Milanowski & John 1979) and a lexware file (Kari 1997). There are two collections of narratives (Tyone 1996, David 2017) as well as a partial bible translation (Milanowski &

John 1966, 1975). The first part of a grammatical description of Nee'aandeegn' is slated to appear in Fall 2019 (Lovick to appear). This grammar is based on a (as yet, largely unpublished) corpus of narratives in the Tetlin and Northway dialects comprising about 8,000 utterances, plus fieldnotes. The same corpus forms the basis for our investigations here.

2.2 Relevant distinctions in the study of negative directives in Dene languages

Several prohibitive forms are reported for a number of Dene languages, sometimes linked to differences in meaning. Some authors, such as Tenenbaum (1978:114) for Dena'ina or Hargus (2007:372) for Witsuwit'en, do not report meaning differences between different strategies, but others do. According to Morice (1932, Vol. II: 218), Carrier (Dakelh) formally distinguishes prohibitives (before the fact) from reproaches (after the fact).³ However, the timing of the directive relative to the action is not the only relevant dimension for which differences are claimed. In her description of Slave, Rice (1989:1109) notes a distinction between prohibitives in the imperfective, used to prohibit “ongoing or habitual activit[ies]”, and those in the optative, “used to warn against an action that has not yet begun”. With a different particle, optative prohibitives receive a stronger “must not” interpretation (p. 1110). Lovick (2016:271) reports that Nee'aandeegn' (called Upper Tanana in that paper) formally distinguishes “immediate” negative directives in the Optative that are applicable only to the situation at hand from “general” ones applying to all situations of this type, and which are in the Future (see section 2.3.2 for details of formation.)

Another important dimension is politeness. De Reuse (2006:348) notes a politeness distinction in San Carlos Apache, where prohibitives phrased in the fourth person are “more subtle and polite” than commands in the second person. Rushforth (1985) and Rushforth & Chisholm (1990) note that in Bear Lake, there is a tendency to avoid both positive and negative directives entirely. Field (2001:255) notes additionally that giving (positive and negative) directives in Dene groups “index[es]... solidarity and an intimate relationship”.

A final distinction was raised by Jetté & Jones (2000:303) in their distinction between “ethical” and “momentary” negative directives. The term “momentary” evokes a distinction like the one between “immediate” and “habitual” or “general” above, but “ethical” in

³ An anonymous reviewer commented that reproaches are not generally considered a type of negative directive and that the Dakelh forms might contain a counterfactual modal. Without a more thorough understanding of Dakelh, we cannot respond to this comment.

the Dene sense calls on knowledge of the moral system of *hwtlaaneel/ijjib* ‘taboo, forbidden’, which is shared (with different names) among many Northern Dene groups. Most simply put, *hwtlaaneel/ijjib* is concerned with the effects an activity might have on *gholeye* (Denaakk’e for ‘good luck (in hunting), success, potlatch wealth’; Jetté & Jones 2000: 402), and consequently, many aspects of *hwtlaaneel/ijjib* regulate proper behavior regarding hunting (see Nelson 1983 for a detailed study of this in the Denaakk’e area). As pointed out by Guédon (2005, Ch. 3) for the Nee’aandeeḡn’ area, however, *hwtlaaneel/ijjib* goes deeper than merely a list of hunting regulations; instead, she argues that it is the set of moral guidelines that sets a good Dene person apart from animals or non-Dene humans. Proper behavior, defined as adherence to *hwtlaaneel/ijjib*, is the topic of many ‘puberty narratives’, e.g. Tyone (1996:17–22), David (2017:162–179) and is implicitly taught as part of many traditional stories.

Hwtlaaneel/ijjib includes levels of responsibility for self and others that are not always immediately obvious to outsiders and do not always have to do with transgressions that non-Dene people would regard as ethical. Examples (1a, b) are cited by Lovick (2016: 271) as “general” negative directives, but only (1a) is motivated by the system of *hwtlaaneel/ijjib*. A momentary negative directive is given in (1c).⁴

(1) Nee’aandeeḡn’

- a. *Huxol’ tüh chib k’a tji’íá!*
 3PL:leg over also NEG 2SG:step:FUT:NEG
 ‘Do not (sg.) step over men’s legs, you (sg.) may not step over men’s legs!’
 {UTOLVDN10Jul2603:108}
- b. *K’at’ey nubk’eb butabhéél!*
 NEG 2PL:like 2PL:speak:FUT:NEG
 ‘Do not speak your (pl.) language, you (pl.) may not speak your language!’
 (David 2017:20)
- c. *Sø’ sbch’a’ natqosbha’!*
 PROH 1SG:from 2SG:SG.go.around:OPT
 ‘Don’t leave me!’
 {UTOLVDN10Jul2710:033}

Jetté and Jones (2000:303) note structural differences between negative directives referencing *hwtlaaneel/ijjib* and those that do not. It was this distinction that originally motivated our development of the methodology described in sections 3 and 4.

⁴ The following abbreviations are used in this paper: ADVZR–adverbializer, AREAL–areal, CERT–certainty, CT–contrastive topic, CUST–customary, INCEP–inceptive, IPFV–imperfective, ITER–iterative, NEG–negative, NMLZR–nominalizer, O–object, OOC–object in open container, OPT–optative, PFV–perfective, PL–plural, POSS–possessed, PROG–progressive, PROH–prohibitive, Q–question, REFL–reflexive, SG–singular.

As noted above, the various morphosyntactic strategies employed by different Dene languages to express the distinctions vary: some involve differences in mode (imperfective, optative, future); some require the use of particular particles. The distinctions can be related, but note that “ethical” does not entail “general”—the situation triggering an ethical command might require immediate intervention, or an overall dose of advice. We are therefore on the watch for intersecting categories that might confuse our analysis.

2.3 Prohibitives in Denaakk’e and Nee’aandeeǵn’

In this section, we describe prohibitives, i.e. constructions dedicated to the expression of negative directives, in Denaakk’e and Nee’aandeeǵn’.

2.3.1 Prohibitives in elicitation

We used pairs such as “Chop wood! Don’t chop wood!” to begin the process of mapping forms to functions. The most easily elicited forms used in prohibitives differ between the two languages.

In Nee’aandeeǵn’, the most common strategy for the formation of a positive directive is to use a second person imperfective (2a), while elicited prohibitives typically consist of the preverbal particle *sɔ’* plus an optative verb form inflected for second person (2b). Standard negation is achieved by the preverbal particle *k’a(t’eeɣ)* plus a verb form inflected for negative.⁵ In (2c), negative inflection on the verb is visible only in the tonal changes compared to (2a) and on the voicing of the stem-final consonant.⁶

(2) Nee’aandeeǵn’

- | | | | | | |
|----|--|-------------|------------------|---------------|-----------------------|
| a. | <i>Ha’áát</i> | <i>tsát</i> | <i>į̄tthèèł</i> | <i>ch’a</i> | |
| | out | wood | 2SG:chop:IPFV | FOC | |
| | ‘Chop (sg.) wood outside!’ | | | | {UTOLAF13May2804:047} |
| | | | | | |
| b. | <i>sɔ’</i> | <i>tsát</i> | <i>ɔ̄tthèèł</i> | | |
| | PROH | wood | 2SG:chop:OPT | | |
| | ‘don’t (sg.) chop wood’ | | | | {UTOLAF12Jul1201:009} |
| | | | | | |
| c. | <i>K’át’eeɣ</i> | <i>tsát</i> | <i>į̄tthéél</i> | <i>de’...</i> | |
| | NEG | wood | 2SG:chop:PFV:NEG | if | |
| | ‘If you (sg.) had not chopped wood...’ | | | | {UTOLAF12Jul1201:049} |

⁵ The form in (2c) is in the Perfective, but negative paradigms exist for all four modes (Imperfective, Perfective, Future, and Optative) in the Alaskan Dene languages.

⁶ Although Nee’aandeeǵn’ is a tone language, tone is not indicated in the practical orthography used in this paper, with the exception of (1) and (2).

Comparable expressions in Denaakk'e are shown in (3). Example (3a) is a positive directive using an imperfective verb form inflected for second person. Example (3b) uses the prohibitive particle *nedaakoon* with a non-negative, imperfective verb. In (3c), the verb is in the perfective negative form, and no negative particle is used. Negative morphology in Denaakk'e includes two different conjunct prefixes, depending on mode/aspect, and a suffix *-(l)aa*, often bearing a high rising tone.

- (3) Denaakk'e
- a. *Sobo kkun' netlaak.*
1SG:for firewood 2SG:chop:IPFV
'Chop wood for me.' Jetté & Jones (2000:653)
- b. *Nedaakoon tl'edaak kkun' netlaak!*
PROH1 dark firewood 2SG:chop:IPFV
'Don't chop wood in the dark!' {Central, EJ, 130530 Notes}
- c. *Kkun' eentlet-dlaa ts'uh...*
firewood 2SG:chop:PFV:NEG-NEG then
'If you had not chopped firewood...' {Central, EJ, 130530 Notes}

In both languages, the most easily obtained prohibitive form (2b;3b) is thus non-compositional, i.e. not formed by combining the default imperative form with the standard negation used in declarative clauses (2c;3c).

Although the forms in (2b;3b) are easily elicited, speakers have commented that they are quite rude, which limits their applicability. They do, however, often occur in teaching materials as "classroom expressions" – the sort of commands teachers may use in classroom control.

Along with these productive forms, there also exist commonly used lexicalized expressions for 'be quiet' and 'don't do that'. Denaakk'e examples are shown in (4):

- (4) Denaakk'e
- a. *Daalek!*
'Hush! Shut up!' Jetté and Jones (2000:399)
- b. *Enaa'!*
'Don't!' Jetté and Jones (2000:429)

Example (4a) is a frozen (or fossilized) second person singular form of a verb theme 'to refrain from speaking, to be quiet', which is no longer productive. The modern productive forms most closely related to (4a) would be *dodaaleelelek* 'Be quiet (to singular)' or *dodaaluhblelek* 'Be quiet (to plural)' (Jetté and Jones 2000:399). In the contemporary language, *daalek* is best viewed as an interjection.

In our Denaakk'e elicitations, the interjection *enaa'* was fairly common, but was usually combined with other advice to the video actor.

The use of such frozen forms and interjections is more likely to occur with Dene speakers who are rusty in their use of the language, seldom find conversational partners, or are less confident in linguistic work contexts. Their lack of specificity makes these expressions useful substitutes for more specific ones, especially in situations where urgency is involved. In our experience, these forms also surface more when adults are interacting with children, a context in which the power relation is quite asymmetrical, and rudeness is less of a concern than children's safety.

2.3.2 A multitude of forms: on-record prohibitives

While the negative directives in section 2.3.1 can be elicited with relative ease, both Denaakk'e and Nee'aandeen' have several additional strategies to form on-record negative directives, in addition to off-record strategies.

Jetté and Jones (2000) provide a wealth of information about prohibitives in Denaakk'e. The particle *nedaakoon* is used with both imperfective and optative verbs. Jetté and Jones say this particle "implies an ethical rather than momentary prohibition" (2000: 303). With the optative or negative optative, *nedaakoon* is also accompanied by the particle *soo'*.

(5) Central Denaakk'e *nedaakoon* with optative or imperfective

a. With optative and *soo'*

Nedaakoon soo' tleeghoobol yu.
 PROH1 PROH2 2SG:SG.go.out:OPT:REL PROH3
 'Do not go out at any time, you should never go out.'

Jetté & Jones (2000:303)

b. With imperfective

Nedaakoon kk'oneedoyh.
 PROH1 2SG:SG.walk.around:IPFV
 'You shouldn't be walking around.'

Jetté & Jones (2000:303)

Examples (5a) and (6) both contain another prohibitive particle, *yu*, which occurs with optative verbs with or without *soo'*. It may also co-occur with *nedaakoon*, as in (5a).

(6) Central Denaakk'e *yu* with optative

Uh dedeghoonee' yu.
 DEM 2SG:speak.thus:OPT PROH3

'Don't say that.'

Jetté & Jones (2000:719)

In the Upper dialect, *se'oo'* (*soo'oo* ~ *soo'* in Central Denaakk'e) is used with negative optative mode in negative directives. (The Central variant is used along with *nedaakoon* in (5a), above). Jetté and Jones' (2000:745) examples for this particle can both be inter-

preted as responses to immediate (7a) or general (7b) situations. This morphosyntactic pattern is also found in neighboring Lower Tanana (Tuttle 2009), where it is used for both immediate and general prohibitions.

(7) Upper Denaakk'e

- a. *Ghusnoon se'oo'.*
 1SG:drink:OPT:NEG PROH2
 'Don't let me drink it (by mistake).' Jetté & Jones (2000:745)
- b. *Ts'aabooghoohaal se'oo'.*
 2SG:speak.out:OPT:NEG PROH2
 'You should not speak out.' Jetté & Jones (2000:745)

Jetté and Jones' analysis of *nedaakoon* as an ethical-directive marker raises many questions, partly because the accompanying particles present multiple possibilities for dialectal or stylistic complications, but for other reasons as well. One issue is that distinguishing between "ethical" and "momentary" confounds several separate distinctions that we have seen identified in other literature on Dene languages: immediate vs. general, polite vs. less polite, preceding action vs. following action – and ethical vs. non-ethical. Most relevant is the fact that "immediate" and "momentary" seem to go together better than "ethical" and "general". Isolated examples in a dictionary entry do not provide enough context to sort out the differences.

Consider that Jetté & Jones' (2000:303) (5a) and (5b) both contain *nedaakoon*, but while (5a) looks like an ethical directive, (5b) could be interpreted as either general or immediate – although if we had sufficient context to evaluate it, (5b) might be an ethical directive.

There are other questions too: what, if any, is the difference between optative and imperfective forms preceded by *nedaakoon*? Are there other differences between the particles (e.g. stylistic or dialectal)?

Lovick (2016:271) finds clearer evidence for a distinction in Nee'aandeegn' between "immediate" and "general" prohibitions. Immediate prohibitions involve the form described in Section 2.3.1 (8a). The general strategy involves the standard negation marker *k'a(t'ee)* and a negative verb form inflected for second person in the future mode (8b).

(8) Nee'aandeegn'

- a. *Sq' shinqljidn!*
 PROH 2SG>1SG:be.afraid:OPT
 'Don't (sg.) be afraid of me!' {UTOLVDN11Aug0802-030}
- b. *Huxol' tüb k'a tji'ia!*
 3PL:legs over NEG 2SG:step:FUT:NEG
 'Don't (sg.) step over [men's] legs!' {UTOLVDN10Jul2603:108}

In addition to the on-record prohibitive constructions identified in Jetté and Jones (2000:203) and Lovick (2016:271), Tuttle & Lovick (2014) and Lovick & Tuttle (2015) report several off-record negative directive strategies for each language; examples will be given in Section 4.

2.3.3 Avoidance of on-record prohibitives in Dene

Several authors note that direct (positive as well as negative) directives are often avoided in Dene languages. Rushforth (1985:38) for example observes: “Bear Lake values provide a context within which it is desirable to avoid performing directives at all [...]. Given that Sahtuó’ine do perform directives, however, consider the utterances exemplified here from the perspective of an individual who normally wishes to avoid the impression of directing another’s actions.” Rushforth & Chisholm (1990) report similar observations in their more extensive study. Guédon (2005:162) briefly notes that her Nee’aandeg’n consultants usually did not correct her behavior. This can be linked to the strategy of “non-intervention” identified by Scollon & Scollon (1979:187–189), which safeguards the individual’s self-respect (Scollon & Scollon 1981:101). Field (2001:255) notes that directives in several Dene languages are used only between individuals with a close relationship.

Tuttle & Lovick (2014) report on the relative scarcity of negative vis-à-vis positive directives in Lower Tanana and Nee’aandeg’n as well as in Denaakk’e. Lovick (2016) finds that in her narrative corpus of Nee’aandeg’n, positive directives outnumber negative ones by a ratio of 5:1. She discusses the motivations for avoiding direct prohibitives, noting that to utter a prohibitive constitutes an act threatening both the negative and positive face of the addressee (p. 273). Exceptions from this avoidance of prohibitives are situations where one addresses someone whose knowledge of proper behavior is incomplete (p. 277) or in situations of immediate danger (pp. 279-280).

2.3.4 Gathering examples of prohibitives

Research on prohibitives, or directives in general, is usually done in one of two ways. One is to investigate large corpora in one’s own language or one in which one has good competence (this was done e.g. by Ervin-Tripp 1976, Craven & Potter 2010, Curl & Drew 2012 on English, by Van Olmen 2010 on Dutch, or by Velea 2013 on Romanian). This allows the researcher(s) to rely to some degree on their own intuitions in disentangling the many factors that influence the choice of a particular form in a particular context (note however that this reliance on their own intuition is rarely addressed explicitly). Alternatively, such work can be based on the observation of natural interactions coupled with discussion of

particular examples (e.g., Rushforth 1985 or Rushforth & Chisholm 1991 on Bear Lake, Field 2001 on Navajo), taking a more ethnographic approach typical for “outsiders”.

In our specific field situations, neither approach was feasible. There are no conversational corpora of Alaskan Dene comparable to those of English, Dutch or Romanian. Lovick (2016) argues in favor of using narrative corpora in the study of directives. This approach works well for positive directives, which are relatively common in narrative text; the rich context in narratives facilitates interpretation of factors such as the relation between speaker and addressee, the urgency of the task, the greatness of the imposition, and so on. Yet this approach has a major drawback as well: as outsiders to the language community, we cannot rely on our ability to correctly identify off-record ways of uttering a prohibitive and thus can assume that many of them simply pass us by. Additionally, this approach does not allow us to get more examples. The ethnographic approach, however, is not possible since these languages are no longer spoken by non-elders.

The *Koyukon Athabaskan Dictionary* (Jetté & Jones 2000) represents a kind of corpus, because it draws on examples from many sources. Its organization allows searching by both meaning and form. Because it contains data collected in the early 20th century when the language was commonly spoken and analysis done at that time by Jules Jetté, it is a useful reference especially at the beginning of a study, providing suggestions for re-elicitation and discussion. However, as seen above in (5)-(7), the lack of context can lead to problems of correct interpretation and analysis. The dictionary’s structure can also make it difficult to distinguish between dialect differences and differences within a particular variety of the language, since individual examples are not sourced. Our experience with variation within Alaskan Dene languages suggests that we could easily be misled by relying too much on this resource, or others comparable to it, for analysis.

We initially attempted to increase the number of negative directive tokens by direct elicitation, but speakers quickly got bored with this task and responded mechanically with the forms described in §2.3.1 above (see also Louie 2015 on the dangers of inducing boredom in consultants). When queried as to whether they would ever actually use such forms, they often responded that they would not, since they sounded quite rude. This approach did not increase our understanding of the semantico-pragmatic nuances associated with direct and indirect negative directives.

We determined that in order to better understand their use, we needed to elicit forms in a way that would allow us to (1) correctly identify direct and indirect negative directives, (2) know why a particular event is undesirable and should not be actualized, (3) have more naturalistic examples for analysis. We show in the following sections how using video stimuli brings us closer to achieving these three goals.

3 Video elicitation

3.1 Goals

3.1.1 Goal 1: Correct identification of forms

While identification of bald, on-record prohibitives in both languages is relatively straightforward (by searching texts for prohibitive markers), correct identification of less direct negative directives can be much more challenging, as demonstrated in (9).

- (9) a. Central Denaakk'e, response to placing a cup at the edge of the table
Huḡboyeneeghaaleeneek.
 2SG>AREAL:be.mindful.of:IPFV
 'Know what you (sg.) are doing; be careful.' {EJ, 140501}
- b. Lower Denaakk'e, response to shaking a pop can⁷ and offering it to an unsuspecting victim
K'eyetaatmen'.
 INDEF>3SG:make.crazy:INCEP:PFV
 'Something is making him crazy; he is being a nuisance.' {EJ, 14050}
- c. Nee'aandeeḡn', response to pulling out a chair from under someone
Edzee! Nis'q̄' d̄j̄d̄j̄' xab ch'a d̄j̄d̄q̄!
 goodness how 2SG:do:PFV for FOC 2SG:do:IPFV:NMLZR
 'Goodness! How are you (sg.) doing what you're doing!'
 {UTOLAFMay0807:009}

All of the utterances in (9) were considered by speakers to be negative directives, yet none of them are formally prohibitives: they do not contain the prohibitive particles *nedaakoon*, *yu* or *se'oo'* (Denaakk'e) or *sp'* (Nee'aandeeḡn') nor is negative polarity marked elsewhere in the clause; they are not in the optative mode; only two are directed at the person who did something wrong (9a, c), and (9c) is (formally at least) a question.

This formal variety of negative directives poses a severe challenge for us; without extended discussion of individual examples, it is difficult to determine whether and under which circumstances it could be used. By using stimuli illustrating undesirable behavior, and by asking speakers to advise the actors, we were able to eliminate some of the unclarity involved here.

⁷ The elder responds to the combination of actions – the secret shaking and the offering. The third-person response requires a conversational ally; in our sessions, the linguist often served in this capacity. We have observed this form of directive often in field situations.

3.1.2 Goal 2: Knowing why an event is undesirable

Negative directives are uttered to indicate that the speaker views a certain event as undesirable (van Olmen 2010). However, both the degree of the undesirability and its causes may play a role in shaping the directive itself: if a person is about to injure themselves or endanger another person by a careless action, a different form might be chosen than if a person does something mildly foolish that is unlikely to have severe consequences. Actions violating *hwtlaaneel/ijjib* are considered to be intrinsically more undesirable than those that result merely in physical discomfort and may be expressed differently (Jetté & Jones 2000:303); hence we targeted the distinction between these two kinds of actions. By determining beforehand which video clips depicted *hwtlaaneel/ijjib* actions and which did not, we were able to see how this distinction is reflected in the choice of directive.

3.1.3 Goal 3: More (and more naturalistic) examples

Matthewson (2004) and Burton and Matthewson (2015) argue in favor of using storyboards to control semantic context, but we decided to use video instead for two reasons.

First, we wanted to record immediate reactions to undesirable activities. Directives are by their very nature interactive, and we are of the opinion that interpreting a fundamentally static object such as a storyboard does not result in a spontaneous response similar to that given in a real-life situation.

Second, presenting our material in the form of one or several storyboards risked boring our consultants. Such a storyboard would have by necessity featured a young person doing many things wrong, and a wise older person correcting her ways—this is possibly not the most exciting storyline.⁸ Speakers likely would have figured out quickly what we were targeting, which could have resulted in boredom.

Using video allowed us to present the material in a way that facilitated a spontaneous reaction while at the same time being entertaining enough to avoid boredom.

3.2 Description of video stimuli

3.2.1 Content

The stimuli feature activities that fall into two categories: activities that should not be done because they are *hwtlaaneel/ijjib*, and activities that should not be done because they

⁸ There are actually several traditional stories that feature a ‘stupid boy’ who violates many taboos and only learns proper behavior after facing harsh consequences, but it did not seem to be respectful to duplicate this type of story.

are foolish or mildly dangerous.⁹ A list of activities is given in Table 3.

<i>hwtlaanee/ijjih</i>	Not <i>hwtlaanee/ijjih</i>
Man sits blocking doorway, woman steps over him	Woman walks barefoot in snow
Man throws coat on the ground, woman steps over it	Woman puts tea cup at edge of table
Woman moves a man's belongings	Man drinks out of another person's water bottle
Woman grabs a man around the wrist	Person pretends to stick fork into power outlet
Man is too close to young women	Man pulls chair out from under woman, woman falls
Women scratch their heads using their hands (rather than special implement)	Man runs with scissors
	Man walks into a wall while texting
	Man shakes pop can before offering it to woman

Table 3: Activities in video clips

This list was designed in the following fashion. Taboo activities were selected by the authors, based on their knowledge of Alaskan Dene culture as expressed in the 'puberty narratives' e.g. by Tyone (1996) or David (2017). Non-taboo activities were suggested by the student-actors in the clips. They include things that people have to tell their children not to do (like going out in the snow without shoes, sticking a fork in an outlet, running with scissors) and things that careful people don't do (like putting a teacup too close to an edge) as well as things that we don't do because we have learned they might make us sick (like sharing a water bottle.) Texting while walking is a foolish modern habit that we might, or might not, speak to one another about. The pop can scenario and the pulling out of the chair are childish bullying actions that we believed would elicit strong reactions.

As one anonymous reviewer pointed out, some of the non-taboo activities could potentially lead to physically dangerous situations, which could cause a sense of urgency in the person responding to the situation. We want to stress here that some of the taboo activities potentially lead to spiritually dangerous situations, which are not viewed as intrinsically less harmful.

⁹ For obvious reasons, we chose not to act out seriously dangerous activities.

3.2.2 Actors

The actors in the video clips were all students in Lovick's field methods class in Winter 2013. We did not act out these activities ourselves since we should not be seen performing *butlaaneel/ijjib* activities: some have polluting consequences that could impact consultants' desire to continue working with us. Also, we are no longer young enough to be easily reprimandable, which would likely have restrained the speakers' choice of expression.

Lovick, whose son turned six in spring 2013, asked the parents of his friends to let them participate in video clips similar to those we eventually produced, but did not succeed in obtaining parental consent.¹⁰ Thus, choosing university students who are able to consent on their own behalf, but young enough to be reprimandable, struck us as a suitable compromise.

There were three women and two men; all of them are of Euro-Canadian descent. Both the gender of the actors and their ethnicity merit brief discussion.

As can be seen in Table 1, many of the taboo activities are sensitive to the gender of the actors. In traditional Dene culture, different behavioral rules apply to men and women and the same behavior might be mildly reprehensible for a person of one gender, but utterly unspeakable for a person of the other. One video clip featured a woman sitting in a doorway and a man stepping over her. When we played this to speakers, they were mildly concerned about the woman blocking the way but not too upset about the man stepping over her. When the roles were reversed, however, the reaction was quite different; speakers gasped audibly over both infractions. Thus, it was important to pay attention to the gender of the actors in the videos.

Related to this point is the need for unambiguous gender identification, specifically regarding hair length. In rural Alaska, the dress code for women does not differ significantly from that for men, but hairstyles do: most men wear their hair short, most women wear theirs long. One of the female actors had relatively short hair, which led to some confusion among the speakers.

While we had anticipated that the ethnicity of the students—none of them could be mistaken for Alaska Natives—would raise methodological problems, it turned out to be a boon. Generally, individuals in their 20s are expected to 'know their taboo', i.e. not to behave in a fashion that violates *butlaaneel/ijjib*. Because of the importance of *butlaaneel/ijjib*, it is taught from the cradle, and even young children are expected to adhere to it. The actors' ethnicity served as an explanation of their ignorance of proper behavior: as white people, they simply could not be expected to know that a woman should never grasp a

¹⁰The resistance to Lovick's suggestion was astonishing in its force and, interestingly, gendered. Parents of boys tended to be amenable to the idea of their child's participation, while parents of girls were adamantly opposed and, in some cases, downright offended, even after the exact nature of the activities was described to them.

man around the wrist or that a man should keep his distance from young women.

3.2.3 Setting

The setting for all video clips was the First Nations University of Canada. Most of the clips were recorded in the classroom, some were recorded in the atrium or just outside the building. These non-traditional surroundings, like the cast, were the result of time and human-power constraints, not clever planning. In fact, the creation of the videos was a spontaneous decision following many discussions of possibilities, a let's-try-this-why-not idea. The classroom setting is, however, less than ideal: the lighting is poor and the background is cluttered. For our elderly consultants, this made it harder to identify the activities shown in the videos. Our location also was a constraint for the activities shown in the videos. It is for example considered taboo to touch or step over the dog harnesses that another person has laid out prior to hitching up dogs to a sled, but dog harnesses, like many other traditional tools or garments that would have given our videos more verisimilitude, were not available.

In hindsight, a different location and more planning might have given us better footage. However, the fact that these spontaneously recorded and imperfect videos resulted in some excellent data should reassure researchers who may be deterred from this form of stimulus creation by worries about production quality.

3.3 Procedure

Our procedure consisted of the following steps: priming, showing the videos and asking for responses, and discussing the responses.

During field work sessions, we initiated conversations about *hwtlaanee/ijjih* in order to prime consultants to think about forbidden and non-forbidden activities.

We then showed the video clips to consultants on our laptop screens. Since all consultants are elderly and some have poor eyesight, we let them watch the clips as many times as they wanted to ensure that they were able to identify what was going on. We then gave the following instruction: "Imagine that these young people are your grandchildren. How would you advise them in your language?" We chose this vague instruction on purpose to allow the consultants to freely choose the form of their response: addressing the young person or another person present (e.g. a spouse or the linguist); scolding, admonishing, or questioning; being gentle or forceful; getting upset or staying composed and so on. We reminded speakers several times throughout each session to imagine themselves (and us) witnessing the situation shown in the video clips. In this fashion, consultants were encouraged to respond verbally in whatever way they found appropriate to each situation.

We also took care to discuss the speakers' responses with them. This sometimes took place at the same time as collecting the responses, sometimes after all responses had been collected. This depended to some degree on the speaker; some wanted to proceed quickly with the next video, while others preferred to discuss their responses as they went.

The data described in the following section was collected from five speakers over four interviews. Three speakers speak the Northway dialect of Nee'aandeegn', one speaker the Lower dialect of Denaakk'e, and one speaker Central Denaakk'e.

4 Evaluation of the methodology

4.1 Advantages

4.1.1 Immediate reactions

All elders we asked to participate greatly enjoyed the task and participated enthusiastically. All responded freely, with meta-commentary directed at the researcher but also with numerous utterances directed at the people in the videos. Slight discomfort was caused by some of the taboo violations. We had anticipated this concern however, and were able to alleviate these concerns by pointing out that white Canadian university students in an urban setting have very different taboos than a young person from an Alaskan village. We also explained that we had informed the students of the taboos (and their consequences), and that they had volunteered to participate. These discussions sufficiently addressed the concerns voiced by the speakers, and we proceeded with the elicitation as planned.

4.1.2 A plethora of forms

Leaving the choice of response entirely up to the speaker unsurprisingly led to very unpredictable data. Examples (10) and (11) illustrate this point using the reactions of two different Denaakk'e speakers to the same video, where a woman grasps a man around the wrist (a severe violation of *hutlaanee/ijjih*).

(10) Lower Denaakk'e (addressing woman)

- a. *Nedaakoon* *uhts'e* *dent'aa*.
 PROH1 that.way 2SG:act.thus:IPFV
 'Don't do that.' {PC, 140404}
- b. *Hoozoonts'e* *edeghononeeltaayh*.
 well 2SG>REFL:have.respect.for:IPFV
 'Have respect for yourself.' {PC, 140404}

- (11) Central Denaakk'e
- a. *Doyeł'aan nuḡb tleenoyeedeggodlee'?*
 why away 3SG>3SG:drag.off:PFV:Q
 'Why did she drag him away?' {EJ, 140501}
- b. *Eey to dont'aanh?*
 DEM FOC 2SG:do.what:IPFV
 'What are you doing?' {EJ, 140501}

The speaker in (10) addresses the transgressor directly with an on-record prohibitive (10a) and an admonition (10b), while the speaker of (11a) addresses the linguist with a question about the woman's behavior—with the assumption, presumably, that the woman would be able to hear the question—before inviting the addressee to reflect on their behavior (11b). This latter strategy is a very common approach across all speakers.

Another common strategy is to suggest alternative behavior using an imperative. Example (12) is part of Mrs. Avis Sam's response to the video where a woman moves a man's pack and then sits down in his seat. Mrs. Sam begins by stating her intended message in English and only switches to Nee'aandeeḡn' in (12c):

- (12) Nee'aandeeḡn'
- a. I'm trying to figure out "Don't do that, the man sits."
 b. I would tell her that:
 c. *Ch'idānh tab dadhijidab.*
 different.place among 2SG:SG.sit:IPFV
 'Sit in a different place.'

Even though Mrs. Sam starts out by explicitly stating that she wishes to express an on-record prohibitive ("don't do that"), she then produces an off-record one. This strategy is common in Denaakk'e as well (13).

- (13) Lower Denaakk'e [to woman stepping over clothing]
Mu'oo nodetegbeebot eebu.
 3SG:around 2SG:SG.walk:FUT in.vain
 'You could have walked around it (but didn't.)' {PC, 140404}

Another common strategy is to appeal to group membership, custom, Dene values, or *hwtlaanee/ijjih*. Example (14) is the response to a woman stepping over a man who sits blocking the doorway.

- (14) Central Denaakk'e
- a. [addressing the woman]
Hwtl'aanee!
 'Taboo!' {EJ, 140501}

- b. *Ndaa en bedeenledo!*
 somewhere away 2SG:SG.sit.beside:IPFV
 ‘Move over a little!’ {EJ, 140501}

Generally, we notice that speakers are reluctant to utter on-record prohibitives in particular in situations where *butlaanee/ijjih* is violated. This is illustrated in Mrs. Barnes’ (Nee’aandeeḡn) quite elaborate response to the clip where a young man enters the room and throws his coat on the floor. A young woman then comes, sighs, and steps over it. Both acts are severely taboo: one needs to treat one’s belongings with care and may not toss them on the floor where they might obstruct others; and women may not step over anything belonging to a man. When Mrs. Barnes viewed this clip, she produced some shocked laughter. A portion of her response is given in (15).

- (15) Mrs. Sherry Barnes, Nee’aandeeḡn’
- a. [addressing the woman]
Nahsbyign eek eeniign ay du’
 down.there coat 3SG:classify.fabric:IPFV:NMLZR 3SG CT
qbchuut tl’aan habnogn da’ybniiḡn diaa.
 2SG:handle.fabric:OPT and upland 2SG:move.fabric.up:OPT PRTCL
 ‘You should take his coat lying on the ground and move it up there.’
- b. *Dii xab ch’a utüh tidbji’ia tl’aan ni’ijhaaḡ?*
 why FOC 3SG:over 2SG:step:INCEP:PFV and 2SG:arrive:IPFV:PROG
 ‘Why did you step over it when you got there?’
- c. *K’at’eeḡ dineb eegn’ tüh tab’üü binay hqot’eb!*
 NEG man coat:POSS over 2PL:step:FUT:NEG 3PL:say:IPFV:NMLZR CERT
 ‘They certainly say that you (pl.) may not step over mens’ coats!’
- d. *Isbyiit ch’a bitelnay.*
 there FOC 3SG:remember:INCEP:PFV:NMLZR
 ‘He should remember that.’
- e. [turning to the man]
Nän du’! Dii xab ch’a haskeb k’eb ch’a nii’ijdaak
 2SG CT why FOC chief like FOC 2SG:arrive:ITER:IPFV:CUST
tl’aan hashyuugn nts’q’ ch’ijteegn?
 and down to 2SG>INDEF:handle.PLO:IPFV:CUST:NMLZR
 ‘And you! Why do you come back in here like you’re chief
 and throw stuff on the ground?’
- f. *Dii xab haskeb ndihnay?*
 why chief 1SG>2SG:say:IPFV:NMLZR
 ‘Why should I call you chief?’

- g. *Haskeb lab dji't'eb ha'!*
 chief NEG 2SG:be:IPFV NEG
 'You're nothing like a chief!'
- h. *Haskeb iin k'a hqo' bidjiign!*
 chief PL NEG thus 3PL:do:IPFV:CUST:NEG
 'Chiefs don't do that sort of thing!'
- i. *Nts'qa' dji'di' cb'a hashyugn nts'q' t'eeey*
 how 2SG:do:PFV FOC down ADVZR
n'eegn' tleegn natijiteegn?
 2SG:coat:POSS dirty 2SG:move.PLO.down:INCEP:IPFV:CUST:NMLZR
 'How do you do that, throwing your dirty coat around here?'
- j. *Hashyugn ts'exeeey iin natetdeegn*
 on.ground women PL 3PL:walk.around:IPFV:CUST:NMLZR
hiitüh ti'üh nts'qa' binijithänb?
 3PL>3SG:over step:INCEP:IPFV how 2SG:think:IPFV
 'Are you thinking about the women walking around here about to step over it?'
- k. *Dineb tleegn ubte' nijithän?*
 man dirty 1SG:be:OPT 2SG:want:IPFV:NMLZR
 'Do you want to be a bum?' {UTOLAF14May0807:033-046}

The whole response to this video clip comprises 18 utterances, yet not one of them is a prohibitive—in spite of the fact that the speaker is clearly upset with both participants. In addressing the woman, Mrs. Barnes uses a variety of strategies: she suggests an alternative course of action with a positive directive (15a), encourages the woman to reflect on her behavior (15b), and appeals to group membership (15c). Importantly, she assigns some responsibility for the woman's transgression to the man (15d): he should know better than to put her at risk of such behavior.

When she turns to the man (15e), she becomes even more forceful, suggesting that he might think that normal rules might not apply to him because of his (fictitious) elevated status as chief, but immediately calling that into question as well (15f). She points out that with his behavior he has not displayed any of the properties expected of a chief (15g, h); he has not considered the implications of his actions for women sharing the same space (15j) and instead has thrown his 'dirty coat' (15i) around like a 'dirty man' (15k) — an epithet usually translated as 'bum', typically reserved for the mythical Wolverine and other despicable creatures (cf. Lovick 2012). This choice of words clearly reflects just how upset Mrs. Barnes is, yet not a single prohibitive is uttered. In the Nee'aandeegn' data,

prohibitives occurred only when the transgression had nothing to do with *hwtlaanee/ijih*, as for example (16):

(16) Nee'aandeeḡ' (Northway, Mr. Roy Sam)

Ogn shyüb hqōt̚i, s̚' kee eedänb ti'yushya'.
 outside snow AREAL:be:IPFV PROH shoe without 2SG:SG.go.out:OPT

'There's snow outside, don't go outside without shoes.' {UTOLAF14Nov2407-001}

It should be noted, however, that even in situations where mild danger was involved, the Nee'aandeeḡ' speakers preferred indirect approaches. After watching the clip where an individual places a cup full of hot tea precariously on the edge of a table, Mr. and Mrs. Sam commented that this was dangerous especially when kids were present. Mrs. Sam then produced the imperative form (17):

(17) Nee'aandeeḡ'

Naxat tuut̚iḡ' nadaltbek nadaat'at noo d̚ibkqaq!
 that cup 3SG:OOC.fall:FUT 3SG:spill.down:FUT middle 2SG:handle.OOC:IPFV

'That cup will fall, [the tea] will spill down, put it in the middle!'

On another occasion, Mrs. Sam and I talked about how young children always seem to be drawn to the woodstove. When I asked what she would say to her great-grandson (then about four) in that situation, she uttered a lexicalized prohibitive followed by a warning in (18a) but suggested the warning without a prohibitive in (18b) as another option:

(18) Nee'aandeeḡ'

a. *Dadh̚ijday! Naxat kon' deek'an'!*
 2SG:do:IPFV:NEG that fire 3SG:burn:IPFV
 'Don't do that! The fire is burning!'

b. *Elok! Naxat t̚iḡ'iah!*
 hot! that 2SG:burn:FUT
 'It's hot, you might get burnt!'

{UT Notebook #5, p. 72}

Dadh̚ijday 'don't do that, stop doing that' is an archaic morphological negative that is attested only with one other verb: *dadh̚iḡnqy* 'shut up, stop talking'.¹¹ These forms are rude, appropriate only when addressing children or (in jest) between friends. Even in a situation involving grievous bodily harm and a small child, however, Mrs. Sam was adamant that (18b) was just as good as (18a).

In our observations of English-language interactions, we notice the same trend against

¹¹ Both forms can also be pluralized; first and second forms inflected in this fashion no longer exist, cf. Kari (1993) and Lovick (to appear).

on-record negative directives (see Field 2001 for a discussion of how traditional interaction strategies may be maintained in the contact language).

4.1.3 Careful discussion

Another advantage of this method was that it led to thoughtful discussion of the chosen forms, without which we might misinterpret utterances. Example (19) is the reaction by Dr. Eliza Jones to the young man pulling the chair out from under a woman sitting down:

- (19) Central Denaakk'e
Nedaats'e kk'ohoo'oyh nughunee!
 how 3SG>AREAL:do:IPFV DEM
 'How he does things, that one!' {EJ, 140501}

Taken out of context, this utterance could be interpreted by an English speaker as an affectionate comment. Instead, the speaker was adamant that it expresses strong disapproval.

Variations in levels of politeness were also explained; for example, Denaakk'e *en bedeenledo* 'move over a little' in (14b) is a gentle nudge toward providing room for another person. The rough comment *k'eyetaatmen* 'something's making him crazy, he's being a nuisance' in (9b) is not so polite. Dictionary entries for these expressions do not include such shades of meaning.

Many of the discussions we had around the videos and their commentary revolved about the notion of *butlaanee/ijjih*. Explanations of this system sometimes sound to outsiders as if they are rules primarily aimed at girls and young women. This unbalanced viewpoint may be due to the fact that many linguistic consultants in Alaskan Dene are female, and thus better informed on constraints on female behavior. Most previous researchers in Dene linguistics, on the other hand, have been males brought up in North American colonial culture, where behavior rules for women are much stricter than for men. The result could be an over-emphasis on rules for women and girls. Yet the responses to the video where a woman steps over a man's coat were overwhelmingly directed at the man, not at the woman. An example from Nee'aandegn' was given in (15); (20) contains one from Denaakk'e.

- (20) Central Denaakk'e [addressing man]
 a. *Nedeeloyee ghoyeneeghaaleeneek.*
 2SG:clothes 2SG:take.care:IPFV
 'Take care of your clothes.' {EJ, 140501}
- b. *Nedaakoon nonhugh buts'e buteetdeyhtl.*
 PROH1 out.there to 2SG:toss:IPFV:CUST
 'Don't just throw things out there.' {EJ, 140501}

Although the woman's action is wrong, the man created the situation that caused it, and thus bears the bulk of the responsibility.¹²

Last of all, discussion revealed some information of anthropological (rather than linguistic) interest; while for example the female speakers thought that walking barefoot in the snow was either foolish or dangerous, Mr. Roy Sam reminisced with a chuckle about when he and his friends would stand barefoot in the snow to see who was the toughest.

4.1.4 Unusual constructions

An additional point in favor of our methodology is the fact that we recorded a number of examples of constructions or lexical items that are rare in narrative text but occur more frequently in interactive settings. In linguistic situations like that of Alaskan Dene, this is an unexpected boon: as these languages are no longer used in daily interactions, recording such constructions or lexical items poses a challenge. The excerpt in (15) above is remarkable not only for the rich variation upon the same theme, but also contains instances of otherwise very rare constructions and lexical items. As already alluded to above, *tleeen* is only rarely used, and instances of its use as a swear word (such as 15i, k) are extremely uncommon. Another interesting construction is the negation in (15g). Negation in Nee'aandeeen' is usually expressed by the negative particle *k'a(t'ee)* plus a negative-inflected verb form (cf. (2c)). Neither of these is present in (15g); the discontinuous particle *lab...ha'* combines with a positive verb form. The resulting semantics are quite different, as shown by the comparison of (15g), repeated here as (21b) with (the standard negated) (21a):

(21) Nee'aandeeen'

a. *K'at'ee* *haskeb* *djiit'ay*.
 NEG chief 2SG:be:IPFV:NEG
 'You (sg.) are not the/a chief.'

{UT Notebook #5, p. 69}

b. *Haskeb* *lab* *djiit'eb* *ha'*
 chief NEG 2SG:be:IPFV NEG
 'You (sg.) are nothing like a chief!'

{UTOLAF14May0807:039}

¹² This male perspective is also apparent in the following excerpt from *The lesser blessed*, a novel by Tłı̄chq̄ (Dene) author Richard Van Camp:

"Pussy," scoffed Johnny, "taking off your shoes at a house party. What a putz." He dropped his jacket on the floor on top of a small shelf that held boots. I hissed and hung it up. My mom never allowed anyone in our house to drop a jacket or a hat. If you do and a woman steps over your clothes, that's it. You're done for: bad luck and you'll never get a moose. I hung it up for him and carefully hung mine up too.

Like I said, I'm Dogrib: I gotta watch it. (p. 32)

The ordinary negation results in a negative, neutral-value assertion: you are not the chief, someone else has that role. Example (21b) is much stronger: not only are you not chief, you have none of the characteristics associated with a chief. This emphatic negation is quite rare; the whole corpus contains about twenty tokens, two of which occur in this recording.

The responses to the video clips also featured a rather high density of interjections, which are also rare in narrative corpora. Thus, the use of video clips featuring taboo activities facilitated the collection of data types that are otherwise underrepresented in our corpora.

4.2 Disadvantages

4.2.1 Insistence on a verbal response

The most concerning drawback of our approach was our insistence on a verbal response, as the most appropriate response to a severe violation of *hwtlaanee/ijjib* would be non-verbal. Ms. Christina Edwin, a Denaakk'e learner from Tanana, observed for example: "You can tell by the way [the Elders] look at you what you should be doing." Mrs. Avis Sam, a Nee'aandeegn' speaker from Northway, noted, "You don't have to use words, you know. You just use your eyes."

This is something we need to bear in mind as we continue our investigations. A person who 'knows their taboo', who knows how to behave properly in the traditional way, should not need verbal reminders—and in numerous interactions with speakers and their extended families, we have never heard such reminders. Our video elicitation method helps us with the elicitation of negative directives and increases our understanding of semantico-pragmatic nuances affecting their variation, but we must remember that the preferred response to any transgression is non-verbal, which cannot be captured by our methods.

4.2.2 Impossibility of eliciting negative directives before the activity takes place

This point is related to the previous concern. Our chosen method results in speakers responding to transgressions after the fact. Negative directives are however often uttered before the activity takes place. The challenge in eliciting this type lies in creating materials that unambiguously suggest that a particular activity is about to be undertaken. This is possible with something like walking barefoot into the snow, but much harder with an activity such as throwing a coat on the floor. Thus, this method is not very well suited to the elicitation of negative directives before the fact.

In a similar vein, we were not able to elicit responses to physically dangerous situations, since we could not simulate, for example, a student stepping out in front of an on-coming vehicle without actually endangering both the student and the driver.¹³

4.3 Adaptability to other field situations

We believe that this method could easily be adapted to other field situations. Due to our focus on the cultural notion of *butlaanee/ijjih*, it is likely that new clips will have to be produced, if this is the researchers' intention. Since other groups are likely to have different taboos, we recommend extensive consultation with community members and/or cultural or linguistic anthropologists working in the same area.

5. Conclusions

The use of video stimuli to elicit negative directives in Alaskan Dene languages has proven fruitful in several respects. It produces a great variety of responses, both on- and off-record, to situations represented in videos. In both languages, off-record expressions were preferred over on-record ones, particularly in situations where *butlaanee/ijjih* was involved. We were able to identify several conventionalized strategies, such as querying the motivations for the activity and making alternative suggestions, which will allow us to search for these strategies in the documentation of the two languages.

Application of this methodology seems well-suited to the kind of problems we encountered in researching negative directives: the multiplicity of forms contrasted with the infrequency of their use in narrative, and the lack of context in documentary forms such as dictionaries. Since the forms truly cannot be sorted without knowing the context, provision of a consistent set of contexts is one way to decrease the number of potential variables. This methodology would be appropriate, therefore, for work on any part of a grammar where context is particularly important.

Ancillary benefits of this approach include the fact that the detailed discussions deepened our understanding of traditional and non-traditional, or Anglo-American, norms for behavior. The spontaneity of responding to moving imagery resulted in the documentation of constructions that are underrepresented in our current corpora. Last but not least, this method was very enjoyable for elders and field workers alike.

¹³ One anonymous reviewer suggested using footage from action films or creating videos using puppets. Both are excellent ideas that we will explore in future fieldwork.

Drawbacks of this methodology include the impossibility of eliciting negative directives before an undesirable activity takes place, and in particular urgent warnings of physical danger. Additionally, several individuals commented that verbal responses, especially in response to cultural transgressions, are often dispreferred.

There are still many ways in which our stimuli could be improved, both with respect to the depicted situations and with respect to production values, including casting, location and lighting.

Overall, we find the addition of video stimuli to the tools we can use in fieldwork to have positive results. Compared with other forms of prepared elicitation material (storyboards, wordlists, games, or tasks), video may take a longer or shorter time to create, depending on production quality and amount of prior consultation with consultants familiar with relevant linguistic behavior. Tools for its creation are now commonplace, as decent quality video can be created with smartphones. As with other stimuli, a particular piece of video may produce results other than expected, or work variably with different consultants. However, video elicitation seems especially well adapted to situations where control of context needs to be balanced with spontaneity of response.

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References

- Attla, Catherine. 1983. *Sitsiy Yugh Nobolnik Ts'in'*, "As My Grandfather Told It." Fairbanks: Alaska Native Language Center.
- Attla, Catherine. 1989. *Bakk'aatugh Ts'uhuney: Stories We Live By*. Fairbanks: Alaska Native Language Center.
- Attla, Catherine. 1990. *K'etetaalkkaanee: The One Who Paddled Among the People and Animals*. Fairbanks: Alaska Native Language Center.
- Axelrod, Melissa. 1993. The semantics of time: Aspectual categorization in Koyukon Athabaskan. Lincoln: University of Nebraska Press.
- Brown, Penelope & Levinson, Stephen C. 1987. *Politeness: Some universals in language use*. Cambridge: Cambridge University Press.
- Burton, Strang & Matthewson, Lisa. 2015. Targeted construction storyboards in semantic fieldwork. In Bochnak, M. Ryan & Matthewson, Lisa (eds.), *Methodologies in semantic fieldwork*, 135–156. Oxford: Oxford University Press.
- Craven, Alexandra & Jonathan Potter. 2010. Directives: Entitlement and contingency in action. *Discourse Studies* 12(4). 419–442.
- Curl, Traci S. & Paul Drew. 2008. Contingency and action: A comparison of two forms of requesting. *Research on Language and Social Interaction* 41(2). 129–153.
- David, Cora H. 2017. *Teedlay t'iin nabolndak niign: Stories by the Tetlin people*. Expanded edition. Edited by Olga Lovick. Fairbanks: Alaska Native Language Center.
- de Reuse, Willem Joseph & Goode, Phillip. 2006. *A practical grammar of the San Carlos Apache language*. LINCOM Studies in Native American Linguistics 51. München: LINCOM.
- Ervin-Tripp, Susan, 1976. Is Sybil there? The structure of some American English directives. *Language in Society* 5. 25–66.
- Field, Margaret. 2001. Triadic directives in Navajo language socialization. *Language in Society* 30(2). 249–263.
- Guédon, Marie-Françoise. 2005. *Le rêve et la forêt: Histoires de chamanes nabesna*. Québec: Les Presses de l'Université Laval.
- Hargus, Sharon. 2007. *Witsuwit'en grammar: Phonetics, phonology, morphology*. Vancouver: UBC Press.
- Jetté, Jules & Jones, Eliza. 2000. *Koyukon Athabaskan Dictionary*. Fairbanks: ANLC.
- Jones, Eliza. 1978. *Dinaakkanaaga Ts'inh Huyozza: Junior Dictionary for Central Koyukon Athabaskan*. Anchorage: National Bilingual Materials Development Center, University of Alaska.
- Jones, Eliza. 1982. *Chief Henry Yugh Nobolnigee: The Stories Chief Henry Told*. Fairbanks: Alaska Native Language Center.
- Jones, Eliza & Chief Henry. 1976. *K'ooltsaah Ts'in': Koyukon Riddles*. Fairbanks: Alaska Native Language Center.
- Jones, Eliza & Kwaraceius, Joe. 1997. *Denaakkenaage' Koyukon Grammar*. Fairbanks: Alaska Native Language Center.
- Jones, Eliza & Solomon, Madeline. 1978. *Koyukon Athabaskan Dance Songs*. Anchorage: National Bilingual Materials Development Center.

- Louie, Meagan. 2015. The problem with no-nonsense elicitation plans (for semantic fieldwork). In Bochnak, M. Ryan & Matthewson, Lisa (eds.), *Methodologies in Semantic Fieldwork*, 47–71. Oxford: Oxford University Press.
- Lovick, Olga. 2012. Walking like a porcupine, talking like a raven: Figurative speech in Upper Tanana Athabaskan. In Idström, Anna & Piirainen, Elisabeth (eds.), *Endangered Metaphors*, 103–121. Amsterdam, New York: John Benjamins.
- Lovick, Olga. 2016. *Ijjih* and request formation in Upper Tanana: Evidence from narrative text. *Anthropological Linguistics* 58(3). 248–298.
- Lovick, Olga. To appear. *A Grammar of Upper Tanana. Vol. I: Phonology, lexical categories, morphology*. Lincoln, London: University of Nebraska Press.
- Lovick, Olga & Siri G. Tuttle. 2015. *Direct and indirect prohibitives in Alaskan Athabaskan*. (Paper presented at the 2015 Annual Meeting of the Society for the Study of the Indigenous Languages of the Americas, Portland, Oregon, January 8–11).
- Milanowski, Paul G. & Jimerson, Shirley David. 1975. *Upper Tanana dictionary*. Anchorage: Alaska Native Education Board.
- Milanowski, Paul G. & John, Alfred (eds.). 1966. *T'oodjht'aiy aandeegn' suu' Mark Utneetl'adn baa': The gospel according to Mark. Upper Tanana and Today's English version*. New York: American Bible Society.
- Milanowski, Paul G. & John, Alfred. 1972. *T'oodjht'aiy Aandeegn. PAUL Dinabht'aa Ch'itbeh et Laakeiy dan THESSALONICA Keiy' Koh'tiin ts'q' t'aaan Ch'itbeh et Laakeiy dan TIMOTHY ts'q' t'aaan TITUS ts'q' t'aaan PHILEMONts'q' Neet'at (God's Word. I & II Thessalonians, I & II Timothy, Titus, and Philemon: Upper Tanana and Today's English Version.)*. Fairbanks: Wycliffe Bible Translators Inc.
- Milanowski, Paul G. & John, Alfred. 1979. *Nee'aaneegn': Upper Tanana (Tetlin) Junior Dictionary*. Anchorage: National Bilingual Materials Development Center.
- Minoura, Nobukatsu. 1994. A comparative phonology of the Upper Tanana Athabaskan dialects. In Miyaoka, Osahito (ed.), *Languages of the North Pacific Rim*, Hokkaido University Publications in Linguistics Number. Sapporo: Department of Linguistics, Faculty of Letters, Hokkaido University.
- Morice, Adrien-Gabriel. 1932. *The Carrier Language*. Mödling bei Wien: Verlag der Internationalen Zeitung "Anthropos".
- Nelson, Richard K. 1983. *Make prayers to the raven: A Koyukon view of the boreal forest*. Chicago: Chicago University Press.
- Rice, Keren. 1989. *A Grammar of Slave*. Berlin, New York: Mouton de Gruyter.
- Rushforth, Scott. 1985. Some directive illocutionary acts among the Bearlake Athapaskans. *Anthropological Linguistics* 27(4). 384–411.
- Rushforth, Scott & James S. Chisholm. 1991. *Cultural persistence: Continuity in meaning and moral responsibility among the Bearlake Athapaskans*. Tucson & London: The University of Arizona Press.
- Scollon, Ronald & Suzanne B.K. Scollon. 1979. *Linguistic convergence: an ethnography of speaking at Fort Chipewyan, Alberta*. New York, San Francisco, London: Academic Press.
- Scollon, Ronald & Suzanne B.K. Scollon. 1981. *Narrative, literacy, and face in interethnic communication*. Norwood: Ablex Publishing Corporation.
- Searle, John R. 1976. A classification of illocutionary acts. *Language in Society* 5(1). 1–23.
- Tenenbaum, Joan M. 1978. *Morphology and semantics of the Dena'ina verb*. PhD thesis, Columbia University.
- Thompson, Chad L. & Axelrod, Melissa & Jones, Eliza. 1983. *Koyukon Language Curriculum Scope and Sequence*. Nenana: Yukon-Koyukuk School District.

- Tuttle, Siri G. 2009. *Benhti Kokht'ana Kenaga', Lower Tanana Pocket Dictionary*. Fairbanks: Alaska Native Language Center.
- Tuttle, Siri G. & Lovick, Olga. 2014. *Alaskan Athabaskan Commands: Grammatical Documentation from a Database Project*. (Paper presented at the 2014 Annual Meeting of the Society for the Study of the Indigenous Languages of the Americas, Minneapolis, Minnesota, January 2–5).
- Tyone, Mary. 1996. *Tibeek'ädn Ut'iin Yaaniidq' Qonign': Old Time Stories of the Scottie Creek People. Stories told in Upper Tanana Athabaskan by Mary Tyone, Ts'q' Yabnik*. Fairbanks: Alaska Native Language Center.
- van der Auwera, Johan & Devos, Maud. 2012. Irrealis in positive imperatives and prohibitives. *Language Sciences* 34. 171–183.
- van der Auwera, Johan & Lejeune, Ludo (with Valentin Goussev). 2013. The Prohibitive. In: Dryer, Matthew S. & Haspelmath, Martin (eds.) *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info/chapter/71>, Accessed on 2018-05-17.)
- van Olmen, Daniel. 2010. “Typology meets usage: The case of the prohibitive infinitive in Dutch.” *Folia Linguistica* 44(2). 471–508.
- Velea, Adina Ioana. 2013. Imperatives & subjunctives in Romanian. *Journal of Pragmatics* 51. 92-104.

A proposal for conversational questionnaires

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This paper proposes a new approach for collecting lexical and grammatical data: one that meets the need to control the features to be elicited, while ensuring a fair level of idiomaticity. The method, called *conversational questionnaires*, consists in eliciting speech not at the level of words or of isolated sentences, but in the form of a chunk of dialogue. Ahead of fieldwork, a number of scripted conversations are written in the area's lingua franca, each anchored in a plausible real-world situation – whether universal or culture-specific. Native speakers are then asked to come up with the most naturalistic utterances that would occur in each context, resulting in a plausible conversation in the target language.

Experience shows that conversational questionnaires provide a number of advantages in linguistic fieldwork, compared to traditional elicitation methods. The anchoring in real-life situations lightens the cognitive burden on consultants, making the fieldwork experience easier for all. The method enables efficient coverage of various linguistic structures at once, from phonetic to pragmatic dimensions, from morphosyntax to phraseology. The tight-knit structure of each dialogue makes it an effective tool for cross-linguistic comparison, whether areal, historical or typological. Conversational questionnaires help the linguist make quick progress in language proficiency, which in turn facilitates further stages of data collection. Finally, these stories can serve as learning resources for language teaching and revitalization.

Five dialogue samples are provided here as examples of such questionnaires. Every linguist is encouraged to write their own dialogues, adapted to a region's linguistic and cultural profile. Ideally, a set of such texts could be developed and made standard among linguists, so as to create comparable or parallel corpora across languages – a mine of data for typological comparison.

Keywords: Linguistic fieldwork; methodology; elicitation; idiomaticity; grammar; lexicon; conversation; spontaneous speech; parallel corpora; language typology and comparison.

1. Presentation: A new type of questionnaire

The field linguist setting out to describe a language can resort to a variety of methods for gathering primary data (Himmelman 1998, Lüpke 2010). These methods range between the two extremes of a continuum: on one end, highly-controlled data, which tend to be unnatural; on the other end, spontaneous speech that can be idiomatic, yet difficult to control for linguistic features.

After a short overview of these methods, I will propose an approach that attempts to combine the two advantages of control and naturalness – namely, *conversational questionnaires*. The short sample in (1) gives the reader an idea of what this kind of questionnaire can look like.

(1) A sample of a conversational questionnaire:

1. A – What is it you're carrying in your basket?
2. B – This? Oh, it's just some fruit I picked in the woods.
3. A – Where did you find them?
4. B – Well, I walked across the river down over there, and climbed up the hill.
5. There's quite a few trees up there with ripe fruit.
6. A – Oh, great! Let me go and see if I can find some too.

The idea is for the fieldworker to read this sort of exchange aloud as in a theatrical performance, and have native speakers render it in their own language. This method constitutes an efficient manner of obtaining naturalistic and well-formed utterances, in a way that is painless to both linguists and consultants. Each sentence is anchored in a fictitious but realistic context, which reduces ambiguity and misunderstandings to a minimum. Yet while such dialogues encourage the production of idiomatic speech, they also allow the fieldworker to keep control of the precise linguistic features they wish to test.

While conversational questionnaires can be relevant at any stage of fieldwork, they are designed to be useful even in the early stages of language analysis. These drills form an efficient preparation for the further stages of data collection – whether recording oral stories and actual conversations, or observing actual communicative events in the field.

If the linguist has gained enough familiarity with the community's environment and cultural habits, they may start using conversational questionnaires very early on during their fieldwork on a new language. The method provides a substitute to elicitation methods based on wordlists or isolated sentences, and leads to quick progress in the exploration of a new language. While collecting lexical data from various semantic fields along the way, conversational questionnaires can help document a fair portion of a language's grammatical system: from phonological processes to sentence intonation, from simple case frames to subordinate structures, from possessive patterns to TAM markers,

from discourse markers to evidentials – to mention just a few.

After presenting the rationale behind conversational questionnaires (Section 2), I will discuss their methodological principles (Section 3). Section 4 will provide and analyze a sample of five possible dialogues, ready to be tested by linguists on virtually any living language. Based on my personal experience, I will highlight the advantages of the method, and propose various ways in which it can contribute to new practices in the domain of language description and typology.

2. The rationale for conversational questionnaires

2.1 The dialectics between control and naturalness

Himmelman (1998: 185) proposed a typology of communicative events that the linguist may encounter in the field, ranked by degree of “naturalness” (Figure 1). His classification brings to light the crucial correlation between, on the one hand, the degree of control over the data to be analyzed, and on the other hand, their poverty in terms of naturalness.

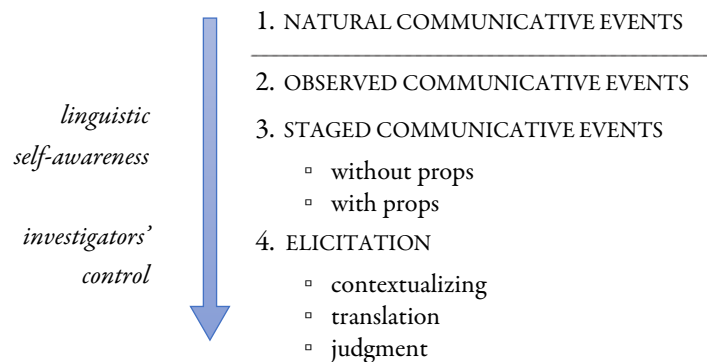


Figure 1. Types of communicative events with respect to “naturalness” (Himmelman 1998)

Some elicitation methods have the advantage of keeping a high degree of control over the data collected. This is the case of wordlist elicitation – whether these lists are limited to “basic vocabulary” à la Swadesh, or include richer and more expert vocabulary such as terms for fauna and flora. While wordlists can provide preliminary insights into the lexicon or the phonology of a language, they say little about its actual fine-grained semantics, as they are often distorted by the organization of meaning in the metalanguage (Haviland 2006, Bradley 2007). And obviously, these lists tell us nothing about the language’s grammar or phraseology.

Ready-made grammatical questionnaires¹ are often designed for the elicitation of one particular field of grammar. Their unit of observation is generally the sentence, which makes them a preliminary tool for observing what utterances may sound like in the target language. These questionnaires often have the advantage of providing numerous subtle grammatical tests within a clearly circumscribed domain – e.g. possession, quantifiers, subordination, long-distance dependency... But what is convenient for the linguist can be more difficult to process for native speakers. Because they are presented in isolation, the sentences making up these questionnaires are sometimes opaque, or deprived of any meaningful context that could help native speakers make sense of them. Sentences (2)-(4) are taken from existing grammatical questionnaires:

- (2) *A cat sleeps.* (Skopeteas et al. 2006: 229)
- (3) *John is continually doing it (on this occasion).* (Moreno Cabrera 1991: 59)
- (4) *Walter thinks that Bill told Harry that Dave respects X. (X=Walter)*
(Dimitriadis & Everaert 2001: 22)

Admittedly, grammatical questionnaires of this sort are not meant to have every sentence translated directly: they are instead designed to help the linguist think of potential research questions during their own investigation, and meant to be adapted to local contexts. But even if a sentence like (4) has different names substituted in, it will not be much easier to process. Faced with such linguist's constructs as (2)–(4), consultants have no choice but to try and translate them literally, using calques or unusual syntax, at the risk of resorting to unnatural turns of phrase. The contrived sentences that result from such an exercise sound as bad in the target language as they do in English, and fail to reveal the language as it is really spoken. This issue is not just a matter of aesthetics: it raises the profound question of the quality of the data we want to collect – if we are serious about making linguistics an empirical discipline.

Another drawback of isolated sentences is the cognitive cost they impose on speakers. The more isolated an utterance is from any accessible pragmatic context, the more difficult it is to provide a natural, or even correct, translation. A questionnaire consisting of decontextualized sentences can be dull and tiresome to consultants (cf. Chelliah & de Reuse 2011:210). The more difficult the tasks of comprehension and translation, the more likely it is that native speakers will find the whole experience unsettling, as they may feel it exposes the limitations of their linguistic knowledge. They will find greater satisfaction in methodologies that allow them to speak naturally, thereby leading to a smooth experience for all participants involved.

¹ See <http://tulquest.huma-num.fr/en> for a collection of such questionnaires; as well as other chapters of this volume.

At the other end of the spectrum, various methods focus on spontaneous speech (see the useful overviews by Lüpke 2010: 67-90, Hellwig 2006: 330-342). Their advantage is to provide natural utterances, with a significant increase in data quality compared to the methods of elicitation mentioned above. This can take the form of “staged communicative events”, i.e. semi-controlled experiments such as spoken responses to a short film (e.g. *The Pear story*, Chafe 1980), or to a visual stimulus forming a narrative (e.g. Vuillermet & Desnoyers 2013; Barth & Evans 2017, among many others).

Recording fluent speech using audio or video techniques provides valuable samples of a language, making it possible to capture how it is spontaneously used by native speakers. Whether they consist of narratives taken from the society’s oral literature (Finnegan 1992, 2010), in procedural texts, or in conversations, these natural samples constitute the high-quality material most appropriate for the endeavor of language documentation (Himmelmann 1998, Mithun 2001, Woodbury 2011). Once properly transcribed and annotated, these records form a proper empirical corpus that can be mined for examples in a grammatical or lexical description.

Indispensable as they are, high-quality samples of spontaneous speech are more easily collected and analyzed during a later phase of fieldwork, once the linguist has become familiar with the language, enough to understand most exchanges on the fly. My focus here is on an earlier stage of language discovery, when little is known of the language, and it is still too early to start transcribing fluent speech. During this initial phase, the linguist needs to be able to maintain some level of control over the data to be collected.

2.2 The original motivation for conversational questionnaires

If the goal is to hear the language as it is really spoken, the best option is probably to experience full immersion in a community. This was indeed my strategy as I learned to speak the Mwotlap language of Motalava island (Banks Islands, Vanuatu), through a six-month immersion in the field in 1997–98 (François 2001:32–36; 2014:29–37). Such an approach makes it possible to learn phrases and utterances as they occur in day-to-day situations, until one is able to master the language.

Language immersion does not require any ready-made questionnaires; it relies on chance encounters, and on the likelihood of finding oneself in a broad array of real-life situations during the immersion period. As the linguist hears a new utterance, they write it down, and resort to on-the-spot elicitation of whichever new word or pattern they may wish to explore. By conducting various tests, and varying the parameters of the initial utterance (e.g. person or number of participants, type of patient, modality...), one can progressively see the grammatical structures of the language emerge.

Yet this approach based on full immersion can only succeed when spending long periods of time in the field – a luxury that is not always available to linguists.

I felt the need for conversational questionnaires only in 2003, as I was preparing for a second stage of fieldwork discovery. Rather than dedicating many months to the same community, I was planning to spend the next fieldwork seasons exploring linguistic diversity in the Banks and Torres Islands – a particularly multilingual archipelago, with 17 languages for a population of 9,300 (François 2011, 2012). For this exploratory type of survey, I would only be able to dedicate two or three weeks on average to each community.

My main goal was always to collect spontaneous speech in the form of narratives or conversations (§2.1) for each language, which I eventually did.² If such an opportunity presented itself, I would record stories, songs or other forms of speech right away, even on day one; but my initial ignorance of each language would mean spending some time extracting the basic structures from the texts themselves, a procedure which was possible yet less than optimal. In order to facilitate my collection and transcription of fluent speech, I felt the need to set up an efficient method for gaining essential knowledge of each language's phonology, morphosyntax and phraseology, ideally in a matter of days.

My personal experience with self-study language books had shown that the most efficient approach to language learning was never through wordlists or isolated sentences, but always through naturalistic snippets of connected conversation.³ Likewise, my first immersive fieldwork made me realize that linguistic constructions and phraseological strategies come embedded in entrenched routine dialogues, rather than in monologic speech. Face-to-face interaction is central to the life and evolution of linguistic systems; it is the natural context where speakers keep track of each other's referents, negotiate the pragmatics of their utterances, and ensure the success of their speech acts (cf. Levinson 1995; Ochs *et al.* 1996; Chafe 1994, 1997; Mithun 2015).

2.3 Creating and using questionnaires in the field

These circumstances and thoughts prompted me to create my own field questionnaire, adapted to the environment and cultural realities of my field area. My intention was to blend two approaches usually kept distinct – namely, questionnaire-based elicitation, and naturalistic conversation.

² These surveys resulted in 104 hours of recordings, including 50 hours of narratives, in 23 languages (François 2019:282–4). These are archived online, in open access [<https://tiny.cc/Francois-archives>].

³ This is, among others, the method famously designed by Alphonse Chérel when he founded the book series *Assimil* in 1929 (Chérel 1929, 1940).

2.3.1 A customized field questionnaire

My field questionnaire itself took the form of a 42-page document, printed on two sides and bound. I made 20 copies – one for each target language – as I left for the field. Each line was printed so as to leave space for answers (see Figures 2 and 3 below).⁴

The core of the document consists of twelve longer dialogues, with an average of 280 words per text: these are the conversational questionnaires proper – the main object of this paper. Besides that main section, my homemade booklet includes shorter sections covering:

- social and sociolinguistic aspects of the language (ethnonyms, glossonyms, number of speakers, vitality, literacy, intermarriage and contact with other languages...)
- IPA chart, phonemic inventories, notes on the phonology
- (blank charts for tabulating) paradigms or personal pronouns and possessive markers
- (blank) kinship charts for consanguines and affines
- detailed maps of the region for collecting toponyms, wind names, geocentric directionals
- month names in the traditional calendar
- numerals and number expressions
- phrases related to time and weather
- eight shorter dialogues (similar to ex. (1); average length: 60 words)
- a list of 25 land animals, with related lexicon (*cat* → ‘meow’; *pig* → ‘pig’s tusk worn as ornament’; *coconut crab* → ‘hunt c. crab’; *spider* → ‘spiderweb’; *ant* → ‘venomous’)
- a list of 18 major sea animals, with related lexicon (*octopus* → ‘tentacle’; *turtle* → ‘shell’; *crab* → ‘claws’; *giant clam* → ‘it’s shutting itself’; *conch* → ‘blow the conch’; *shrimp* → ‘shrimp trap’). Supplemented with elicitation kit for fish and sea animals.
- a list of 10 birds and flying mammals, with related lexicon (*fowl* → ‘eggs’, ‘chicks’, ‘cackle’, ‘rooster’, ‘rooster feathers’; *pigeon* → ‘nest’; *flying-fox* → ‘chew fruit’). Supplemented with elicitation kit for birds.
- plant-related terms (*flower* → ‘wither’; *fruit* → ‘ripen’; *bark* → ‘bark a tree’)
- a list of 40 trees and plant species, with related lexicon (*taro* → ‘taro garden’; *bamboo* → ‘bamboo joint’; *coconut* → ‘coconut shell’, ‘c. milk’; *sago* → ‘sago thatch’). Supplemented with elicitation kit for flora.
- a list of 52 body parts, with related lexicon (*heart* → ‘heart beat’; *head* → ‘headache’; *breast* → ‘feed a baby’; *blood* → ‘bleed’; *voice* → ‘loud’...)
- a list of 40 pairs of common adjectives (*high–low*, *deep–shallow*, *rich–poor*, *sharp–blunt*...)
- a list of 100 Proto-Oceanic reconstructions likely to be reflected in modern languages.

⁴ My field questionnaires are archived online, on the ODSAS platform (François 2013). The one for Dorig (Gaua, Banks, Vanuatu) is provided in open access [https://tiny.cc/AF_Q_Dorig]. Interested readers can consult it as a sample of a complete questionnaire.

Most sections were meant to collect vocabulary and essential phraseology. They helped me learn the language so as to interact with people, and transcribe recordings efficiently; they also provided material for future dictionaries. But the central section of my elicitation kit was a series of dialogues, which together formed a conversational questionnaire. Apart from some vocabulary, the main aim of those texts was to elicit data on morphology, syntax, pragmatics, and phraseology.

2.3.2 Samples of conversational questionnaires

Figure 2 shows the first lines of a dialogue written in Bislama, the lingua franca of Vanuatu. The title reads *Naef blong mi wea?* ‘Where is my knife?’. The handwritten translations are in the Lehali language, spoken on Ureparapara island (Banks group, Vanuatu).

3.5. D5		<i>Ngahäl yekes ävä?</i> Naef blong mi wea?		<input type="text"/>
16	Sore, tugeta!	<i>Magaysen yogo!</i>	Wanem?	<i>Nanvä?</i>
17	Mi stap lukaotem wan naef bl. mi l. plesia	<i>No te ksey ngahäl yekes ma nei.</i>		
18	be yu2f. i stap staon l. mat ia, ating i staon-blokem naef	<i>Moyo ve gel yē</i>		
19		<i>vitōn {keke keue}, moyo wun ne gel gey ti ngahäl yekes.</i>		
20	Yu2f. i traem stanap festaem mi luk?	<i>Moyo ti yak ti no ket to?</i>		
21	I nogat wan naef l. plesia	<i>Ööö, tet ngahäl vëtwa sou ma nei.</i>		
22	Be from, mi bin katem wan paenapol l. hem samples l. plesia tedei	<i>Ööö, weläke</i>		
23		<i>no m siy ti upanapo yan tegätä ma nei ngäyi.</i>		
24	Mi2f. i kam, i no luk wan samting i stap	<i>Ööö, moyo mvan ma, tet</i>		
25		<i>ne et [wey] täntegettä vëtwa ma nei.</i>		

Figure 2. Sample of the author's dialogue questionnaire D05 written in Bislama creole, with translations in the Lehali language of Vanuatu (François, pers. data, 2011)

Figure 3 shows the same field questionnaire filled out for Tanema, one of two moribund languages of Vanikoro island (François 2009), in the Solomon Islands. The name in the top-right corner is that of Lainol Nalo, the last speaker of Tanema.

My initial source of inspiration for writing these dialogues were a number of real-life conversations I had experienced a few years earlier, as I was conducting monolingual fieldwork in Mwotlap. My vivid memories of the spontaneous dialogues, consolidated by the handwritten notes I had taken then, had already inspired the linguistic analyses in my doctoral dissertation (François 2001). In that context, some particular situations had struck me as favoring specific constructions and semantic fields. For example, when I got lost one day in a new village, the questions I asked people around me triggered several

strategies for spatial reference, combining deictic and geocentric directions, various motion verbs and spatial prepositions. Later on, as I prepared my exploration of new languages, the memories of such spontaneous exchanges inspired a three-page dialogue, in which someone asks his/her way around a village, and receives directions based on various spatial strategies.

3.5. D5		Toki ae vane? Naef blong mi wea?		Laiuel Nalo
16	Sore, tugeta!	Gi, de lalv!	Wanem? Sive?	(anaka)
17	Mi stap lukaotem wan naef bl. mi l. plesia	Ni akado toki ae i ^(stap) i ^(stap) mi temaka kana		
18	be yu2f. i stap staon l. mat ia, ating i staon-blokem naef	ia gamile ba i ^(stap) i ^(stap)		
19		bepa de, buru, ba ^(baio) tupa toki pa		
20	Yu2f. i traem stanap festaem mi luk?	Beo ba ^(baio) me na bu ^(baio) ni ^(baio)		
21	I nogat wan naef l. plesia	Gi, Abu, toki i eno pa eia.		objekt juel
22	Be from, mi bin katem wan paenapol l. hem samples l. plesia tedei	ia pe ni tae		
23	wo bainapu mi	de ^(baio) ni ^(baio) temaka kana		
24	Mi2f. i kam, i no luk wan samting i stap	Ba loma ia ba runi vanora		chose, spec. kaikai
25		i eno kana eia.		

Figure 3. Sample of dialogue D05, with translation in the Tanema language of the Solomon Is. (François, pers. data, 2005)

2.3.3 Choosing the source language

In writing up my conversational questionnaires, I often remembered utterances and turns of phrase initially heard in Mwotlap, and I translated them into the country's national language, Bislama. This English-based pidgin/creole⁵ has been adopted since the beginning of the 20th century as the country's lingua franca (Tryon & Charpentier 2004).

I could have used Mwotlap as a lingua franca, considering the number of people across the Torres and Banks islands who can understand it (François 2012:99, 102); yet this would have run the risk of inducing too many calques in the translation between close vernaculars. Admittedly, the structures of Bislama are also very close to its Melanesian substrates, yet they are less strongly anchored in the northern islands, and find their origins in a much broader region (Camden 1979, Tryon & Charpentier 2004). In that sense, this creole can be considered equally distant from all languages in the region I was

⁵ The term “pidgincreole” proposed by Bakker (2008:138) suits well the status of Bislama. In rural areas of Vanuatu, it is used as a lingua franca – like pidgins; yet in urban settings, it has become the first language of most speakers, which makes it a creole. In 2009, 33.7 percent of Vanuatu families declared using Bislama as their main language of communication at home; 63.2 percent declared using a local vernacular, with Bislama as a second language (François *et al.* 2015:12-13).

studying, and different enough from each variety to reduce the risk of interference. Bislama was here a neutral choice, both sociolinguistically and grammatically.

Using French and English as the source language was, in this case, not a good option. The colonial languages are taught in formal education, yet are hardly ever used in rural areas. Local islanders do not master them sufficiently to have solid intuitions when translating, say, nuances of verbal morphology or lexical semantics. Also, the association of these two languages with the school context would have placed consultant speakers in a situation of linguistic insecurity, and increased their “self-awareness”, at the expense of naturalness (cf. Figure 1). The choice of Bislama had the opposite effect. The creole is spoken fluently by everybody in Vanuatu: switching from Bislama to a vernacular is a daily practice in the country, and does not hamper the spontaneity of speech.

For all these reasons, I chose to use Bislama as the source language of my conversational questionnaires.⁶

2.3.4 My typical workflow in the field

As I entered a new language community, I would begin by making friends with the people, socializing with various age groups and families, explaining what my plans were. People were curious about the work of a linguist, and eager to start teaching me their language.

Dialogue D1 (of which an English adaptation is presented in §4.1) was designed to be the first one for each language: it included the most basic greetings (‘good morning’, ‘thank you’, ‘see you later’), the essential pronouns and verbs, all incorporated in a simple story. Consultants usually enjoyed these dialogues, because they were written so as to combine serious topics with more humorous or lighthearted exchanges (cf. Chelliah & Reuse 2011: 210). Even when I proposed a break after a questionnaire session, oftentimes speakers – especially younger ones – would ask me to “do another story”. What I usually did was to use no more than one dialogue per half-a-day session, and alternate those longer texts with shorter sections of the questionnaire (§2.3.1), or to have informal conversations where I’d try practicing what I had just learned.

With an average of two dialogues translated per day, I usually finished collecting the twelve longer texts of my fieldwork questionnaire in less than a week. People of all ages also wished to tell me traditional stories, which I started recording early on – sometimes from day one if they were impatient. As for transcribing those stories, I usually waited until I had finished learning my first “lessons” in the language – that is, translating four or five whole dialogues from my questionnaire. These work sessions alternated with periods

⁶ In the remainder of this paper, the examples of questionnaires will be given in English.

of rest, walking around the island, chatting with various people in the villages, playing cards or sports, immersing myself in the community in various ways.

Not all dialogues have been translated in every language I worked on. Depending on fieldwork circumstances and priorities, I sometimes skipped some texts, and focused on what was more urgent.⁷ For example, my questionnaire for the Lemerig language (Vanua Lava island) only has seven dialogues translated out of twelve, because the few days I was able to spend in 2006 with †Taitus Sërortelsöm – the language’s last speaker – were precious: we chose instead to focus on transcribing my recordings from the oral literature.

3. Methodological aspects of conversational questionnaires

I will now expose the methodological principles and advantages of conversational questionnaires. Going beyond the special circumstances of their genesis in my fieldwork experience, this section will take a broader perspective, and examine how this method can be usefully generalized to other field settings. Conversational questionnaires can, in principle, enrich the toolkit of descriptive linguists anywhere in the world, whether they study spoken or signed languages, endangered languages or major tongues, rural or urban cultures.

3.1 Between elicitation and connected speech

3.1.1 Connected speech and idiomaticity

The point of departure of a questionnaire is a naturalistic dialogue representing a plausible real-life situation. A text is prepared ahead of fieldwork, written in English or in the local lingua franca. An English sample is provided in (1) in Section 1 above.

The linguist’s work consists in getting consultants to render the dialogue as appropriately as possible in their native language. While sentence-based questionnaires tend to elicit literal, word-by-word translation, and therefore run the risk of sounding unnatural (§2.1), conversational questionnaires are sufficiently tied to daily situations to hopefully bring out the most naturalistic formulations.

The point is not so much to translate a written text as it is to reenact a specific conversation, and elicit the most spontaneous utterances that occur in that context. Thus, if we come back to dialogue (1), the idea is not to translate this line literally:

⁷ Out of the 204 potential texts to be collected (12 dialogues × 17 languages), we actually translated 144, that is, 70 %.

(1') **Oh, great!** Let me go and see if I can find some too.

Rather, the linguist's role is to explain the hypothetical situation – which is often self-evident from the dialogue – that speaker A starts her utterance by expressing excitement when she hears about a spot in the woods where fruit is ripe and abundant. How would such excitement be expressed in the target language? It could take the form of a statement like *this is very good* or *I can't believe it*; of an exclamation like *how cool is that!*; or perhaps an interjection such as *hurrah*, or *thank God*. The key advantage of the method is that speakers are not asked to translate words (*How do you say "great" in your language?*) but to mentally tune in to an imaginary dialogue situation, and produce whatever utterance would be most idiomatic.

Because it focuses on naturalistic speech, this approach can generate good-quality data, compared with the translation of isolated sentences. Thus, if I ask a speaker of Lakon – an Oceanic language of Vanuatu (François 2011) – to translate, out of the blue, the sentence “*I do not know*”, chances are they will volunteer a literal equivalent (5), which is indeed perfectly grammatical:

(5) LKN *Na tē ron avōh.*
 ISG NEG₁ hear/know NEG₂
 ‘I do not know.’

Now, one of my dialogues had an exclamation ‘I don't know!’ in context.⁸ Interestingly, my Lakon consultants rendered it spontaneously, not with the full sentence (5), but with an unanalyzable word *wē'ēs!* instead. As it turns out, this is an “ignorative” interjection that is equivalent to Eng. *Dunno!* or *No idea!*, and is always uttered with a shrug.⁹ In the domain of controlled elicitation, only a dialogue anchored in a plausible pragmatic situation could provide the opportunity for the spontaneous utterance of such an idiomatic turn of phrase.

3.1.2 The role of the linguist: Control and liberty

In my view, the main role of the linguist here is to channel the work of translation so as to respect two principles: [*a*] faithfulness to the meaning of each utterance in the dialogue; [*b*] freedom to depart from a literal translation, if this favors idiomaticity. These two principles can come into conflict, and it is precisely the role of the linguist to navigate between these two prerogatives.

Let us consider, for example, sentence (1') above *Let me go and see if I can find some too*. The principle of faithfulness implies that the linguist has identified, for this utter-

⁸ The context was: “The public phone is down again, when will it be fixed? – I don't know!” [AF.q.Telefon:06].

⁹ The neighboring language Mwotlap has a similar ignorative interjection *isi!* (François 2001:1011).

ance, its main contribution to the narrative, as well as its relevance for grammatical elicitation. In the case of (1'), character A expresses her desire to follow the steps of B, and check whether she can also succeed in finding ripe fruit. In pragmatic terms, this sentence is a closure to a short dialogue, as A announces her intention to leave the scene. As far as the grammatical enquiry is concerned, the sentence can potentially provide information on the existence of verb serialization (*let me go and see*), on the expression of a 1sg imperative or hortative (*let me go, let me see*), on complement clauses (*see if I can find*), on quantifiers (*find some*), etc.

The linguist must make sure that the consultant is sufficiently comfortable with the translation exercise that they will not try to translate the sentence literally. And indeed, the final sentence does not necessarily need to have a word meaning *go*, or *see*, or *if*, and may well be rendered idiomatically in quite a different way.

Conversely, it may happen that the speaker misses the point of the utterance, and volunteers an inaccurate or incomplete translation (e.g. *I'm going now*, or *I want some too!*) that is too distant from the source version. In that case, the fieldworker should feel free to repeat the initial prompt, and ask the consultant for confirmation that this is the best translation they can think of. While some negotiation is perfectly legitimate, the linguist should refrain from insisting too much, which can be perceived as pressure to produce a literal translation. In my experience, the mere repetition of the stimulus sentence, reenacted by the linguist with a natural tone, is enough to encourage the consultant to provide the best translation possible. A good option here is to work not with one, but at least two speakers, who can complement each other's replies in order to get as close as possible to an idiomatic dialogue in their language.

At the beginning of each work session, I usually took the time to read aloud the whole dialogue in the source language, so as to have the consultants envision the scenario in its entirety; this helped them prepare mentally to render the scene in their language. Likewise, after we went through the whole process of translation, I ended sessions by reading aloud the dialogue we had prepared together, this time in the target language. This was often an occasion for consultants to evaluate the degree of naturalness of the final text. Most often, they nodded in approval, saying "Yes, that's exactly how we'd say it in our language!", which was satisfactory for all. In a few spots, the reading was interrupted by a consultant who came up with an alternative translation that they judged to be more appropriate. That moment of verification was always a very useful way to conclude the session.

In order to assess the consultants' replies as accurate and idiomatic enough, the linguist may need to already have some intuitions about the target language. This is not always possible, especially if the investigation is at an early stage. A solution can be to work out a first translation together, and to give it another go a few weeks later, once the

linguist has made progress in mastering the language, and the consultants are better accustomed to the art of naturalistic translation. This second run provides an opportunity to fine-tune the initial version, and achieve a rendition of the dialogue that is fully satisfactory to everyone.

In principle, the questionnaire can be conducted by a non-linguist – whether a researcher with training in different disciplines, or a member of the community. This could even be seen as an important advantage of conversational questionnaires: they are so intuitive and self-evident that – contrary to most grammatical questionnaires – one does not need linguistics training to use them with consultants. While this is indeed true, some training and practice remain useful to find the proper balance between naturalness of speech, and faithfulness to the function of each utterance.

3.1.3 A new niche in fieldwork methods

Within the typology of communicative events proposed by Himmelmann (Figure 1), conversational questionnaires arguably occupy a new niche in fieldwork methods, halfway between ELICITATION and STAGED COMMUNICATIVE EVENTS.

Conversational questionnaires aim to address the flaws which have often been noted in sentence-based elicitation. Mithun (2001: 45) notes that grammatical questionnaires are heavily dependent on a linguist's expectations of what structures a language may or may not have; and yet, certain language characteristics might only surface in connected speech:

“[a]n obvious value of the documentation of natural connected speech is that it permits us to notice distinctions and patterns that we might not know enough to elicit, and that might not even be sufficiently accessible to the consciousness of speakers to be volunteered or retrievable under direct questioning. This material is in many ways the most important and exciting of all.”

Mithun's statement was meant to describe “natural connected speech”, but applies equally well to conversational questionnaires. The ignorative interjection which my Lakon speakers volunteered spontaneously when rendering a dialogue is a good example of a linguistic category whose existence was hardly expected, and would probably not have been elicited using classic elicitation methods.

Entire domains fall under the radar of sentence-based elicitation, and only surface in connected conversation. This is particularly true of evidentials (Mithun 2001: 45–8), discourse markers and other devices indicating pragmatic stance or speech acts. To quote Silverstein (1979: 234, cited by Chelliah 2001: 156), these linguistic dimensions are low on the “hierarchy of elicibility”. Unless specific elicitation techniques are designed for them (Turnbull 2001), pragmatic strategies are often the neglected garden of fieldwork

elicitation (Grenoble 2007). The very design of conversational questionnaires is meant to address these important flaws inherent to traditional methods of elicitation. This observation will be amply illustrated with the dialogues in Section 4 (see in particular §4.4.2).

The principle of pragmatically-anchored utterances also makes them a potential tool for eliciting data on INTONATION (see Himmelmann 2006). While a given sentence, taken in isolation, can be translated using a default, neutral intonation, a dialogue creates a meaningful context in which a certain prosodic contour naturally comes to mind – whether it encodes surprise, amusement, anger, or any other emotion suitable to the given dialogue situation. Of course, for studying prosody, just like for anything else, no method beats the naturalness of spontaneous conversation; but the conversation-based method provides a combination of idiomaticity *and* control that can be useful to a preliminary observation of intonation.

For similar reasons, conversational questionnaires constitute an interesting option for the description of SIGN LANGUAGES, taking into account all their dimensions – including prosody and facial expressions (Cormier et al. 2010, Dachkovsky et al. 2013, Padden 2015:150) – much better than what is possible under sentence-based elicitation.

3.2 A tool for cross-linguistic comparison

3.2.1 Etic grid and language typology

There are also deeper, theoretical reasons why a dialogue in context should be favored over isolated textbook sentences or wordlists.

A given word may take on different meanings depending on context. Thus in many target languages, an English verb like *carry* has a variety of possible translations, depending on the type of object (carry a baby vs. a bag vs. firewood...), on the exact manner of carrying (carry in both arms vs. on shoulder vs. around neck vs. on head...), on directionality (carry-and-come, carry-and-go, carry upwards...). Obviously, a poorly designed vocabulary list with a “simple” entry *carry* does not provide enough clues to isolate a specific sense (Haviland 2006:153). The common practice is for the linguist to explore the various lexemes volunteered by consultants, by improvising various tests on the spot, so as to understand how that particular field (e.g. verbs of carrying) is organized.

In comparison, a conversational questionnaire targets one specific sense – or a specific “frame” (Rakhilina & Reznikova 2016) – of a polysemous word. Thus, the first sentence of example (1), reproduced here as (6), uses *carry* in a particular sense:

(6) What is it you’re **carrying** in your basket?

In order to explore the semantic domain more broadly, the linguist can legitimately pause the translation of the dialogue, and ask a few questions on the side: can the same verb be used with other forms of objects? with different manners of carrying? If the case is simple, it can be answered right away, and the excursus will be limited. Sometimes, the domain is so rich that it warrants a separate session.

The other senses of an ambiguous English word can also, in principle, be embedded in further dialogues. For example, while (6) illustrates a particular sense of *carry*, another sense can be found in dialogue D5 (§4.5), line #25, shown in (7):

(7) She's **carrying** her child on her back.

Carry fruit in a basket vs. *carry a child on one's back* describe two separate actions, and these two sentences (6) and (7) thus constitute two distinct data points. The fact that English happens to colexify these two situations using a single word is an interesting property of English, but this should not be taken for granted for other languages.

The same reasoning applies to grammatical morphemes. Many morphemes of English are ambiguous between different possible meanings, and a questionnaire based on isolated sentences remains ambiguous in this respect. A conversational questionnaire, on the other hand, will help the consultant pinpoint a specific interpretation of a given morpheme, without too much effort.

For example, the isolated sentence (2) *A cat sleeps* will be difficult to translate in many languages, due to the ambiguity of the indefinite article in English (specific or not?), and of the general present. Is this a gnomic statement on cats, perhaps truncated (*A cat sleeps longer than a dog*)? Is it supposed to be a habitual action performed by a specific referent (*A cat sleeps on my porch every night*)? Languages may render these two interpretations with different TAM markers, or different noun articles. In the absence of additional context, (2) is an odd sentence, impossible to translate with certainty. Such ambiguity is automatically resolved in a conversational questionnaire.

Thus, to return to the short dialogue in (1), the quantifier *some* in (#2) (*it's just some fruit I picked in the woods*) appears in a [+realis] context, and hence has [+extensional] interpretation (Montague 1970, Moltmann 1997, Zimmermann 2001). This particular token of *SOME* is functionally distinct from the [-realis] clause (#6) (*Let me go and see if I can find SOME too*), a [-extensional] use which other languages might well translate differently. Eliciting these two sentences in a dialogue can tell us precisely which languages translate (like English) the quantifier *some* with the same form in these two sentences, and which ones draw a distinction between quantifiers in [+realis] vs. [-realis] contexts. For example, Araki – an Oceanic language of Vanuatu – encodes these two uses of Eng. *some* with different morphemes (François 2002:59–69).

In sum, the method of conversational questionnaires paves the way for cross-linguistic comparison, by providing an ETIC GRID from which emic categories can be observed (cf. Evans 2010:509). Each occurrence of an ambiguous lexeme (e.g. *carry*) or morpheme (e.g. *some*), once embedded in a specific context, pinpoints a particular meaning that is defined irrespective of language-specific categories. The onomasiological approach adopted by these questionnaires can then be the starting point for typological comparison.

3.2.2 Conversational questionnaires as parallel corpora

The potential of conversational questionnaires for cross-linguistic comparison is illustrated in Figure 4. This is a sample of my fieldwork database, laid out using SIL's Toolbox program.

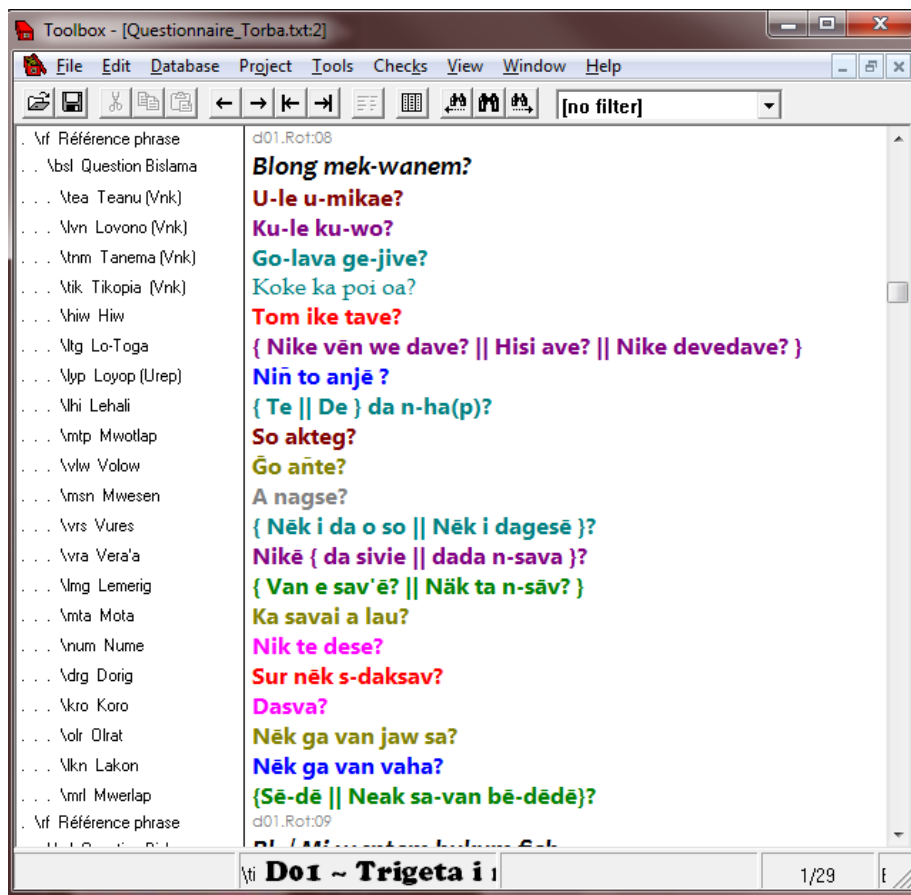


Figure 4. Sample of the author's database of conversational questionnaires: a Bislama sentence is translated into 21 languages of Island Melanesia (François, pers. data, 2017)

All the sentences presented in Figure 4 translate the same Bislama sentence, whose English equivalent would be “What for?”.¹⁰ This is part of the following exchange in D1 (see an English version in §4.1.1):

- (8) 7. A – Well, we’re walking down to the river, over there.
 8. B – **What for?** Are you going to be bathing?

The elicitation language, here Bislama [§2.3.3], has a sentence *Blong mekwanem?*, which parses as ⟨PURP do.what⟩ – using an interrogative verb *mekwanem* ‘do what’. That elliptic sentence is translated here in 21 Oceanic languages from Island Melanesia: four languages from the Solomon Islands (Temotu province), and 17 from Vanuatu (Banks and Torres Isles), ranked in geographical order from NW to SE, and transcribed in the local orthographies. I created this database simply by compiling my handwritten field notes for individual languages (illustrated earlier in Figure 2 and 3) into a single electronic, searchable text file.

Such a comparative database, based on a shared questionnaire, can be put to various uses. Comparison may involve related languages (as in Figure 4) and serve to showcase, and potentially measure, the internal diversity within a given subfamily. For example, Figure 4 here shows that all the languages tested have a synchronically unanalyzable interrogative verb meaning ‘do what’ (TEA *mikae*, LVN *wo*, TNM *jive*, TIK *oa*, HIW *tave...*) – except three. Lehali, Vera’a and Orlat, like English, simply combine the verb ‘do’ with their interrogative word for ‘what’.

Such comparison can be conducted in the perspective of historical linguistics, helping the linguist identify shared retentions and shared innovations. A larger database could also involve genealogically diverse languages, and function in the spirit of *parallel corpora* advocated by some typological linguists (Cysouw & Wälchli 2007, Dahl 2007). For example, the sentence in Figure 4 can serve to elicit the existence of interrogative verbs (Hagège 2008) across the world’s languages.

3.2.3 Towards a universal thesaurus of speech motifs

Phoneticians and dialectologists have been using Aesop’s tale “the North Wind and the Sun” (International Phonetic Association 1912; Boula De Mareüil *et al.* 2017), or the parable of the Prodigal son (Bec 1986; Heeringa & Nerbonne 1999), as a standard text to build parallel corpora across dialects and languages. In the same spirit, linguists could agree on a set of dialogues as the basis for empirical cross-linguistic comparison. The

¹⁰ The identifier \rf *d01.Rot:08* indexes the eighth sentence in dialogue D1 [see §4.1.1]. The Bislama word *rot* (<Eng. *road*) echoes the title of D1 in my questionnaire, *TRIFELA I MIT LONG ROT* “Three people met on the road”.

conversational questionnaires designed by linguists would constitute a new genre among elicitation tools, each one with its own purposes and advantages.

If every utterance of every dialogue were assigned an identifier – such as a DOI – it could be cited in a systematic way. For example, a study comparing interrogative verbs across languages could refer to the sort of [+dynamic] use found in {CQ.D01.08}, i.e. *Conversational questionnaire D01, line #08* (cf. Figure 4). In the event that other linguists were to use the same standard dialogue for their own fieldwork, they could then confront that cross-linguistic study with their own data. If we adopt standard questionnaires that are used and reused by fieldworkers around the world, our discipline could come closer to an empirical science that promotes the citability and reproducibility of its research results – a valuable objective in itself (Berez-Kroeker et al. 2018).

The granularity of the database could even be refined, so as to point not to a whole sentence in a dialogue, but to the functional components within it. In the same way that the catalog of Aarne–Thompson–Uther (Uther 2011) provides a reference grid for *folktale motifs* across the world’s narrative traditions, likewise a universal thesaurus could index what may be called “*speech motifs*”, referring to specific meanings, pragmatic values, speech acts, that can be encoded in languages. For example, the speech motif found in Figure 4 above can be defined as follows:

- (9) Example of a SPEECH MOTIF:
 { A tells B that A is going somewhere, and B asks A: ‘WHAT FOR?’ }.

The work of typologists would then be to list the various strategies used by the world’s languages to express that speech motif: a full sentence (*what will you do?*); an elliptic sentence (as in English *what for?*); an interrogative verb (like in Vanuatu languages); an interrogative adverb (*why?*); a prepositional phrase (*for what purpose?*)...

The number of “speech motifs” is potentially infinite, but a comparative database based on existing dialogues and corpora could provide a good start. Such an onomasiological thesaurus would be similar to some cross-linguistic tools used in studies of the lexicon, e.g. the *Concepticon* (List et al. 2016, 2018).

3.2.4 Culture-specific or universal?

Conversational questionnaires mimic conversational routines that can be assumed to take place in the actual use of most languages.

Admittedly, the very nature of conversational routines varies from culture to culture. Not all languages have an equivalent of *How do you do?* or *Bon appétit!*, and one should not assume that verbal greetings, requests, apologies or other speech acts, are carried out in the same way everywhere (Wierzbicka 2003; Trosborg 1994, 2010). One option for the linguist is to design dialogues in such a way that they are specifically tailored to the

typical interactions attested in a given area. In many parts of the world, a phrase like *Where are you going?* is a more standard greeting than *Good morning* (Gil 2015:280, 354), and a dialogue must be able to adapt to this. The same applies to cultural references: a story in Vanuatu may concern the drinking of kava or the preparation of breadfruit, while one for Basque speakers might mention sheep milk cheese or a pelota competition.

Such a process of dialogue customization requires some level of familiarity with the local culture. Depending on circumstances, this may be best carried out by the speakers themselves, or by the linguist – provided the latter has acquired sufficient experience with the local mores. While the dialogues themselves can be prepared in such a way as to be usable on day 1 of fieldwork without requiring any previous knowledge of the language, it is in fact a preferable situation for the linguist to be already well-acquainted with the material culture of the local population, as well as their social practices and pragmatic routines.¹¹

Adapting conversational questionnaires to local cultures and practices is highly desirable, and should by all means be pursued. This practice has the added value of combining linguistic documentation with the preservation of cultural knowledge. That said, a drawback of this option is the difficulty of using the same dialogue across different cultural areas – an objective that a typologist might want to pursue [§3.2.3]. A possible compromise is to combine both types of dialogues in a fieldwork project: some stories anchored in local referents, and others written in such a way as to be reusable, and comparable, across continents, with minimal local adaptation. In all cases, the linguist should provide consultants with some leeway to adapt the text to local referents and pragmatics.

3.3 An efficient tool for language learning

The fluency I acquired in Mwotlap during my initial immersion (§2.2) provided me with enough linguistic background to quickly assimilate other Oceanic languages with a similar typological profile – even though their lexical diversity is superior to that of the Romance or Germanic families (François 2011: 203 – cf. Figure 4 above). The format of my custom-made questionnaire, thanks to the density of linguistic information, allowed me to learn the essential vocabulary, constructions and grammatical structures of each new language within the first week of my stay. This efficiency, in turn, helped me socialize with community members; this created a virtuous circle whereby I quickly enriched my

¹¹ The context of a regional linguistic survey, in which the linguist is already familiar with the area's cultural practices yet new to each language (see §2.2), is a situation where such questionnaires can serve in the very early days of visiting a new community.

knowledge not only of the language, but also of the community's oral traditions, songs and poems, cultural tastes, and social dynamics.

Conversational dialogues make for an efficient language-teaching resource not only for the linguist, but also for future learners of the language. These may be native speakers learning literacy, semi-speakers in a context of language revitalization, or L2 students wishing to discover a new language. The pedagogic power of such dialogues is indeed to be expected, considering that the approach was initially inspired by the principle of self-teaching methods (see fn.3). Conversational questionnaires are thus easily converted to pedagogic resources, in the spirit of the teach-yourself grammars that exist already.¹²

A number of conversations elicited using these questionnaires were included in some of the literacy materials I created for Vanuatu languages (François 2004–15; 2019:286–9). After hearing about my questionnaires, Aimée Lahaussais (p.c., July 2018) reports that she, together with Guillaume Jacques, successfully tested the method in her fieldwork on Khaling (Nepal): community members created new dialogues typical of their daily interactions, and used them as materials for language revitalization with the younger generations.

This sort of application of conversational questionnaires can have language learners perform short “drama” scenes based on the scripted dialogues – thereby meeting the proposals made by Nathan & Fang (2009: 155–7). As these authors note, this sort of practice helps bridge language description and language pedagogy, a valuable objective especially in case of language endangerment.

In sum, conversational questionnaires belong to several genres at once. They provide raw data for the linguist aiming to describe a given language. They can form the basis of parallel corpora for language comparison, whether historical or typological. And they can be easily adapted into teaching resources, for language learners of various profiles.

4. Five conversational questionnaires

In the remainder of this paper, I will present a selection of five conversational questionnaires, as an illustration of the method, and inspiration for future linguistic elicitation. Each text is followed by instructions on how best to use that specific dialogue, and comments highlighting how it can contribute to the exploration of certain linguistic domains.

¹² In the Pacific domain with which I'm more familiar, my inspiration for dialogue-based questionnaires came from several pedagogic resources I had personally used – including Dutton & Voorhoeve (1974) for Hiri Motu; Dutton & Thomas (1985) for Tok Pisin; Lercari *et al.* (2001) for Drehu; Paia & Vernaudon (2003) for Tahitian.

The first dialogue D1 is an English adaptation of the Bislama script that was part of my own field questionnaire in Vanuatu. The other dialogues presented here (D2–D5) were created especially for the present publication.

4.1 Dialogue D1 – We’re going fishing

In principle, D1 can serve as the first dialogue to be used in the field, because it covers the essentials of a basic conversation. If the linguist prefers to start with a shorter session, they can achieve a less elaborate version of D1 by omitting lines #21–30, or even #11–30. A rendering of D1 in the Oceanic language Mwotlap (Vanuatu) is provided in the Appendix.

4.1.1 The text

TITLE: *We’re going fishing.*

CONTEXT: A man [A] and his wife run into a woman [B] on the road.

1. A – Good morning!
2. B – Hello!
3. A – How are you_{SG}?
4. B – I’m fine, and you_{DU}?
5. A – Oh, we_{EXC:DU} are fine too.
6. B – Where are you_{DU} going?
7. A – Well, we_{EXC:DU}’re walking down to the river, over there.
8. B – What for? Are you_{DU} going to be bathing?
9. A – No, no! We_{EXC:DU} won’t be bathing.
10. We_{EXC:DU}’re going fishing.
11. We’ll try to catch some river fish for dinner.
12. B – Oh I see. Is there a celebration in the village, or something?
13. I didn’t know.
14. A – No, there’s no celebration.
15. We_{EXC:DU} just need food for our_{EXC:PL} family.
16. My wife had bought a chicken at the market the other day,
17. but our_{EXC:DU} children_{DU} ate it all already:
18. now we_{EXC:PL} have nothing left at home!
19. Besides, we_{EXC:PL} don’t have enough money any more.
20. We_{EXC:DU} really have to go fishing today.
21. B – I understand.
22. I’m sorry that you_{PL} have no food left.

23. I can help you_{PL}, my friends.
 24. My husband and I, we_{EXC:DU} have lots of vegetables from our_{EXC:DU} garden,
 25. which he harvested yesterday, and brought back home.
 26. If you_{DU} want, we_{EXC:DU} can give you_{PL} some.
 27. A – Oh really? Thank you_{DU} very much!
 28. B – You_{DU}'re welcome.
 29. A – You_{DU}'ll give us_{EXC:PL} some vegetables, and we_{EXC:DU}'ll give you_{DU} some fish.
 30. Tonight we_{INC:PL} will all eat together.
 31. B – Great! Good bye!
 32. A – See you_{SG} later!

4.1.2 About this dialogue

The story is meant to be applicable to many cultures, as river fishing tends to be a widespread activity in the world – unlike ocean fishing, for example, which is restricted to coastal cultures. The attempt to make this dialogue as universal as possible entails that no specific species are named: #11 mentions 'river fish', #24 'vegetables'. Linguists and language consultants should feel free to adapt these sentences to local fauna and flora, and replace generic 'vegetables' with the name of whatever the staple food is in the local culture. The selection of the proper verb in #25 will depend on this choice, whether 'harvest' or 'pick', and so on. If some elements of the text (river fishing, food gardening, market, money...) are absent from the local culture, an adapted dialogue can be proposed.

4.1.3 Linguistic notes

Dialogue D1 allows the linguist to efficiently collect a large quantity of data on the language, at several levels of analysis. The following provides an overview of the type of material that can be contributed by this dialogue.

4.1.3.1 Lexicon

D1 focuses on basic morphosyntax, and puts little emphasis on vocabulary. As a result, many sentences deliberately employ the same simple lexemes, so as to yield contrastive clauses that focus on the morphology; thus compare lines 4 with 5; 8 with 9; 10 with 20; etc.

In spite of the apparent lexical simplicity, D1 does bring forth a number of lexical items, which constitute a good start for a first text:¹³

¹³ Items in parentheses are words whose translation equivalent is likely to employ different strategies depending on the language. Thus, while 'walk' will probably be translated by a verb everywhere, only a minority of languages possess a verb 'have'; its negation may be a separate verb meaning 'lack', or may

- VERBS: go, walk, bathe, fish, catch, buy; (dine), eat_{INTR}, eat_{TR}; harvest; bring; (have), (lack); know, (not.know), understand; (try), need, want; help, give
- NOUNS: food, river, fish, chicken, vegetables, market, family, house/home, village, celebration/party, money; husband, wife, children, friends, garden
- QUANTIFIERS: all_{INAN}, all_{ANIM}, enough, some, nothing
- ADVERBS: today, tonight, yesterday, the other day; already; together; (really)
- LOCATIVES: down; over there; (to the river); (home)

As it is, D1 provides only some of the morphological forms of these lexemes: ‘village’ (12) appears in a locative phrase; ‘know’ (13) is found exclusively in a negative clause; ‘children’ (17) only appears as an agentive phrase in the dual, etc. Depending on the profile of the language, it may be easy or complex to infer from these surface forms the other elements of the paradigm – e.g. ‘child’ in the singular, ‘children’ in other cases... This investigation can be carried out by the linguist through elicitation, either as a follow-up to D1, or through separate dialogues.

4.1.3.2 *Phraseology*

Besides individual lexemes, D1 collects a good deal of common phraseology:

- GREETINGS good morning; hello; how are you; good bye; see you later...
- INTERJECTIONS thanks; you’re welcome; great!; no, no!
- DISCOURSE PARTICLES oh; well; besides; really; but
- VOCATIVE my friends

Some formulations, which in English take the form of a constructed clause, may be rendered in the language by different strategies (§3.1.1). For example, what is given in (12) as “*Oh I see*” might be translated in some languages by the 1SG form of a verb ‘see’ (or ‘understand’ or ‘know’) like in English; but in other languages, it might be more idiomatic to use an interjection (something like ‘Alright!’ or ‘True!’ or ‘Yes!’), or perhaps just a vocal gesture (e.g. [ʔo::], or a click).

Likewise, in (3) “*How are you?*” of course must not be translated literally: its natural equivalent might be something like ‘*Are things good?*’, while its answer in (4) could be a formula such as ‘*Thank God*’ or ‘*Peace only*’... In (27), some languages lacking a *Thank you* interjection might still have an idiomatic way to express gratitude in that particular situation: e.g. *You are very kind* or *God bless you*. Some cultures might rather opt for a mere gesture or a facial expression. The more idiomatic the formulation, the better.

resort to a negative existential for example. The equivalent of Eng. ‘try’ may be a conative affix or an adverb; ‘really’ in (20) may be encoded by prosodic strategies; etc.

4.1.3.3 Personal pronouns, number, functions

While it would be difficult, and unnatural, to create a story featuring all possible personal pronouns, D1 can help elicit a fair number of them, for various persons and functions. Table 1 lists the various places in D1 which enable the elicitation of specific pronominal forms.

	A	O	S	possessor
1sg	[12], 13, 21, 26	26	22	16, 24
2sg		[32]	[3]	
3sg	[16], 25	17	[31]	
1exc:du	11, 15		[5], 7, 9, 10, 20	17, 24
1inc:du				
2du	26, 29	29	6, 8	
3du	[17]			
1exc:pl	[18, 19]	29		15, [18, 19]
1inc:pl			30	
2pl	[22]	23, 26		[22]
3pl				

Table 1. Personal pronouns potentially elicited by Dialogue D1

For presentational purposes, the default assumption here is a language with a contrast of clusivity (Filimonova 2005), and three numbers (singular, dual, plural) – but of course other systems are possible. Considering the ambiguity of Eng. pronouns *we* or *you*, each form is tagged for its status: e.g. “*If you_{DU} want, we_{EXC:DU} can give you_{PL} some*”. The situation depicted in the dialogue should make it clear which number applies in each case: singular, dual, trial, paucal, or plural (Corbett 2000). The dialogue suggests that character A and his wife have two children (cf. dual on ‘children’ in (#17)), hence the plural forms of (#15-29) refer to a family of four. Character B is married, but does not seem to have children. The plural form in (#30) refers to a group of six people.

Apart from number and person, Table 1 sorts the various pronominal occurrences into four general semantic roles: A (most agent-like argument in a transitive clause), O (most patient-like argument in a transitive clause), S (sole argument in an intransitive clause); and possessor.¹⁴ This sorting is merely indicative, and does not preempt language-

¹⁴ Numbers in square brackets correspond to sentences for which the presence of a person index will most likely depend on language-specific phraseology. For example, (19) *We don’t have money* may be translated in some languages by means of a verb ‘have’ (or ‘lack’) with a 1pl pronoun encoded as an A argument; but other languages may resort to a possessive structure of the type *Our money is lacking*, where 1pl has the role of a possessor (cf. Heine 1997:58).

- will all be coming to our community:
3. men and women, children, old people, entire families...
 4. A – We should welcome them in a friendly way,
 5. just like they did to us last year.
 6. B – Yes of course, like we always do.
 7. A – Our leaders will start with a welcome speech.
 8. Then, people will pray in the morning.
 9. After that, we'll all share lunch together.
 10. B – In the afternoon, I hope we can have songs and dances.
 11. The people of X will sing their songs, dance their dances;
 12. we too, we shall sing our own songs, and do our own dances...
 13. A – Yes, good idea. Everyone loves music and dance.
 14. B – As we find some rest, our elders will be able to tell stories
from the olden times, for the young to hear.
 15. A – This will be great. They know so many stories.
 16. B – And then, in the late afternoon, our two communities will part again.
 17. That will be the end of the day of celebration.
 18. A – Remember that you and I are in charge of the organization this year.
 19. B – Perhaps we_{INC:DU} should call a meeting tomorrow morning in the community
and tell our people what they should do.
 20. A – Some of us can clean the village area,
 21. set up the place for the celebration.
 22. B – Other people can make the costumes for the dances.
 23. We must choose which dances to showcase;
 24. and we must rehearse them!
 25. A – Also, don't forget: we'll have to prepare food,
 26. enough food for two hundred people.
 27. B – Oh dear, that will be a lot of work for us all.
 28. A – A lot of work indeed. Let us start today!
 - 29.

4.2.2 About this dialogue

D2 is meant to be as universally applicable as possible. This is not easy, due to the culture-specific components typically associated with collective celebrations.

The “New Year” was chosen as one of the few sorts of celebrations that are widespread across religions and cultures; of course, this does not necessarily coincide with the New Year of the Western calendar, and corresponds to a more general notion of annual cycle which may be accompanied by some form of celebrations. This story evokes a particular kind of event, with one community visiting another one, performing dances and so on; while this was inspired by New Year celebrations at my Vanuatu field site, it is possible

that in other civilizations, the closest equivalent to such a scenario may be linked to a moment distinct from the New Year, such as a wedding or a funeral. In that case, the translation may choose to adapt the text in this respect.

Line 8 uses a generic verb *pray*, which could in principle apply to different religions and worshipping traditions. As per the principles suggested in §3.2.4, the text could be somewhat adapted to local mores – e.g. *pray* could be replaced by *go to the mosque*, or *make offerings*, or by terms related to other similar collective rituals.

The story leaves in blank the name of village X; this is meant to be filled by whichever real village or community would fit the description in the target context. This sort of local customization of stories tends to be well received by local communities, and makes the questionnaire a less impersonal exercise.

The details of the dialogue can indeed be adapted to local contexts – with the caveat that the closer it remains to the original, the easier it will be to later compare the story across languages.

4.2.3 Linguistic notes

The story in D2 supplements D1 with respect to pronouns. The default interpretation of 1st person pronouns throughout the text is inclusive plural (*we'll have celebrations; we should welcome them; they did to us; we'll all eat together; work for us all...*). The text has also 1st inclusive dual (*you and I are in charge...; we should call a meeting*). Many verbs represent 3rd person plural (*they did to us; our leaders will start; people will pray; the elders will be able to tell stories..., for the young to hear; everyone loves music*).

The dialogue features various quantifiers: *we'll all have lunch; everyone loves; two hundred people; some of us; a lot of work*. A language distinguishing paucal from plural (cf. Corbett 2000: 23) might well exploit that distinction to render some contrasts in this story, e.g. between the smaller groups within the village (*some of us can clean...*) and the larger groups made up of the two communities (*we'll all have lunch together...*).

The text elicits numerous time expressions: *in two months' time; this time; last year; then; after that; in the afternoon; tomorrow morning; today*.

The modality is mostly irrealis, including:

- predictive future: *we'll have celebrations; people will pray; we'll all have lunch; that will be the end; it will be a lot of work,*
- deontic: *we should welcome them; we should call a meeting; we must choose; we must rehearse...,*
- potential: *our elders will be able to tell stories* (i.e. 'have the opportunity'); *some of us can clean...,*
- hortative: *let us start today,*
- imperative: *remember,*
- prohibitive: *don't forget.*

The dialogue elicits a number of subordinate structures: *welcome them just like they did to us; tell stories for the young to hear; remember that we are in charge; tell our people what they should do; choose which dances to showcase...*

4.3 Dialogue D3 – Seeing the doctor

4.3.1 The text

TITLE: *Seeing the doctor*

CONTEXT: A patient [A] visits the doctor [B].

1. A – Good morning Doctor, how are you?
2. B – I'm fine, and you?
3. A – Well... I'm not feeling well these days.
4. That's why I came to see you.
5. B – What's happening to you? You look sick.
6. A – I can't sleep well at night.
7. I sweat, I have nightmares, and then I wake up in the middle of the night.
8. Sometimes I feel hot, sometimes I'm cold. I must have fever?
9. B – Let me check your forehead... Oh yes, you're hot!
10. Do you cough?
11. A – No, I don't cough.
12. But every time I wake up, I'm very thirsty; I feel I need to drink.
13. And also, my belly hurts. It's painful.
14. B – Does it hurt during the day? or only at night?
15. A – Mostly at night. I don't know why.
16. Doctor, I'm a bit worried: what is going on?
17. B – Did you eat anything particular lately?
18. A – Hm, let me remember... No, I don't think so.
19. Oh wait, actually yes I did!
20. Last week, my child came back from the forest
with some strange fruit I had never seen.
21. He gave them to me, for me to try.
22. B – Did you?
23. A – Yes I did. Actually I liked it, it was sweet. I ate many of them.
24. But then, I became sick after that.
25. B – I see. It must have been that fruit that made you sick.
26. If you hadn't eaten so much, you wouldn't have gotten sick like this.
27. A – Oh Doctor, you're right. I shouldn't have.
28. What should I do now?

29. B – Don't worry. I'll give you some medicine for you to drink.
 30. You will take it twice a day: once in the morning,
 and once again in the evening, after dinner. Alright?
 31. A – Alright Doctor. And then I'll be better?
 32. B – Yes, you should get better soon.
 33. This is efficient medicine against fever and belly-ache.
 34. Also, you must get some rest.
 35. Don't go to work: you need to sleep.
 36. A – Alright Doctor, I understand. I'll get some rest.
 37. Thank you so much!

4.3.2 Linguistic notes

The reader will be able to see the interest of each new dialogue in the same spirit as D1 and D2 above. I will only provide a few hints here.

Dialogue D3 focuses on the expression of experiencer predicates, physical affects, sensations and feelings: *I sweat; I have fever; I have nightmares; I'm thirsty; I'm cold; I feel hot; I'm not feeling well; my belly hurts; it's painful; I'm worried; I liked it; you'll get better ...*

D3 should help elicit various Tense and aspect meanings:

- habitual stative: *sometimes I feel hot; I'm very thirsty; my belly hurts*
- past stative: *I liked it, it was sweet*
- present stative: *you're hot; I don't know; I'm worried; I understand; you look sick*
- future stative: *I'll be better*
- habitual dynamic: *I wake up; do you cough?*
- past dynamic: *did you eat lately?; my child came back; I ate many of them*
- past inchoative: *I became sick*
- future dynamic: *you will take it*

The text illustrates an array of irrealis modalities:

- deontic: *what should I do now?; you must get some rest; you need to sleep...*
- promissive: *I'll give you some medicine; I'll get some rest*
- hortative: *let me check, let me remember*
- prohibitive: *don't go to work*
- counterfactual: *if you hadn't eaten..., you wouldn't have gotten sick*

Several clauses illustrate epistemic modality and evidentiality: *you look sick; it must have been that fruit; you should get better; I must have fever.*

Dialogue D3 elicits a number of adverbial phrases:

- time phrases *these days; lately; last week; at night; in the middle of the night; during the day; twice a day; in the morning; in the evening; after dinner; sometimes; every time; after that; never; soon...*
- non-temporal adverbs *mostly; a bit; actually; also.*

In the domain of noun phrases, D3 illustrates various forms of possession: kinship (*my child*), body parts (*your forehead, my belly*). In those languages that grammatically treat body parts as inalienable, the presence of a possessor is normally obligatory: a “head” or a “belly” will always be mentioned with a specific possessor. In this perspective, sentence #33 is meant to elicit a particular sort of construction, namely the case – quite rare in discourse – when an inalienable noun is used in a generic sense, and thus has no specific possessor. *Medicine against belly-ache* is a phrase which mentions a body part, yet makes it impossible to retrieve a possessor. While many languages may simply use the bare, unpossessed noun (*belly*), others may have to resort to special morphology here. This is especially true of Oceanic languages: thus Mwotlap will have to use here a special suffix *-ge* to fill the possessive slot, while encoding the absence of any referential possessor: *na-tqe-ge* ‘[s.o.’s] belly’ (François 2001:526-545). This sort of construction turns out rarely in a corpus of spontaneous speech, but can be usefully elicited by means of a conversational questionnaire.

These are just some of the linguistic highlights of this dialogue.

4.4. Dialogue D4 – Where’s my notebook?

Dialogue D4 revolves around spatial relations, as two individuals try to locate a lost item. It is based on my field questionnaire D05 illustrated earlier in Figure 2 and 3 (*Where is my knife?*); it is also inspired by one of the lessons of Tahitian proposed in Paia & Vernaudo (2003:92-100).

4.4.1 The text

TITLE: *Where’s my notebook?*

CONTEXT: A young girl [A] is asking her elder brother [B] for her school notebook.

1. A – Brother, have you seen my notebook?
2. I’ve been looking for it everywhere, but I can’t find it!
3. B – I don’t know, sister. Which notebook?
4. A – It’s my math book. It’s a thick, blue one.
5. You’ve seen it already.
6. I was doing my homework on it last night in the dining room.

7. B – Well, you probably left it there, then!
8. A – No. I put it away in my schoolbag before I went to sleep. I think.
9. B – Hm, did you look in our room, beside your bed?
10. A – Yes I did; it's not there.
11. B – Or perhaps on Dad's desk, maybe it's hidden under another book?
12. A – Wait... No, I can't find it.
13. B – Let me look in the kitchen... Hm, not here either.
14. A – But I need it for my math class today!
15. The teacher will be quite angry if I don't have my notebook with me.
16. He will think I didn't do my homework.
17. B – Uh oh... I think I found it!
18. A – Really?! where?
19. B – Look at our little brother out there in the garden.
20. What's that he's holding in his hands?
21. Isn't it your notebook?
22. A – Oh my god, yes it is. But he has shredded it into pieces!
23. B – It looks like he's been playing with it all morning.
24. A – Oh dear, what happened to my homework?!
25. Now I need to buy a new notebook,
26. and start my work all over again.
27. Poor me! What a disaster...

4.4.2 Linguistic notes

Dialogue D4 focuses on some spatial relations, with words such as *where, everywhere, here, there, out there*; and various locative phrases (*in my schoolbag, in our room, in his hands, beside your bed, on Dad's desk, under another book...*).

The text also features several forms of noun modification:

- possession: *my notebook, your bed, Dad's desk, our little brother...*
- qualification: *thick, blue book; a new notebook*
- characterization or noun compounding:
 my schoolbag, my math book, my math class.

D4 has clauses showing various tense–aspect–mood configurations:

- past reference: *have you seen; I've been looking for; I was doing my homework; I put it away;*
- present reference: *I don't know; I think; he's holding;*
- future reference: *the teacher will be angry; he will think...*

Discourse particles and interjections are one of the linguistic domains for which conversational questionnaires surely constitute the best elicitation method. Dialogue D4

includes a wealth of such particles and exclamatives, rendered in English as *Well... then, I think, Hm, Wait, Uh oh, Oh my god, Oh dear, Poor me...* Several of these words are polysemous in English, but take on a certain nuance in the particular context of this dialogue. Obviously not all languages will have equivalent particles, and some languages may add certain interjections where English has none – depending on what is most natural in the flow of the dialogue.

As suggested in §3.1.1, conversational questionnaires can also help control and elicit data on prosody. The sentences in this dialogue express emotions such as annoyance, surprise, amusement, impatience, concern, desperation... Ideally, once the dialogue has been translated, native speakers would manage to impersonate it – similar to a drama – with a natural enough rendering that the audio of their performance can be recorded and analyzed.

4.5. Dialogue D5 – *A family album*

The following dialogue is plausible in many parts of the world, though not everywhere: the existence of photography, and of black and white photo albums, is not attested in all regions. The usual caveat applies, namely, that the text may need some local adaptation.

4.5.1 The text

TITLE: *A family album*

CONTEXT: A person [A] is showing a photo album to a friend [B].

1. A – Have you ever seen pictures of my family?
2. B – Well, I've met some of your relatives, but I've never seen your pictures.
3. A – Here is an old photo album I just found in my parents' room.
4. B – Oh, show it to me please!
5. Who's this on that first photo?
6. It looks like olden times, it's in black and white.
7. A – These are my grandparents, on my mother's side:
 Grandpa here on the left, and Grandma on the right.
8. The people around them must be their friends, or other relatives.
9. B – Was that the day of their wedding?
10. A – No, I don't think so. On their wedding, they were older than this.
11. This must have been the day when they got engaged.
12. In those times, the day of engagement used to be a major event
 for the whole family, and people would wear beautiful clothes, and all.
13. B – Did you know them?

14. A – Who? My grandparents?
 15. B – Yes, your grandparents on the photo.
 16. A – Actually no. I heard they died before I was born.
 They were born a long time ago.
 17. B – Oh I see. And who's that on the second photo?
 18. A – This is my mother, when she was a child.
 19. I guess she was coming back from school: look at her schoolbag.
 20. B – Oh yeah, nice. And the small boy behind her, who's that?
 21. A – That's my uncle Teri.
 You've never met him, he lives far away from here.
 22. B – And what school did they attend then?
 23. A – That was an old school that doesn't exist any more.
 It was located down the road, to the west, towards the lake.
 24. B – Let me see this other photo.
 25. This woman is surely your mother again, carrying a child on her back.
 26. Oh, I think I know who this child is. That's you!
 27. A – That's me indeed! How did you recognize me?
 28. B – Well, on that photo you're a small child,
 but I recognize your eyes and your smile.
 29. You look mischievous on that picture.
 30. You haven't changed much!
 31. A – Ha ha. But I'm not a child any more, I've grown up now.
 32. Today my mother would not be able to carry me on her back like that!
 33. I'm taller than her, and heavier too.
 34. B – Ha, that's true. You've eaten too much!

4.5.2 Linguistic notes

In terms of the lexicon, D5 features some kinship terms: *relatives, family; parents; mother; (maternal) uncle; grandpa, grandma*. This elicitation session, incidentally, may provide the fieldworker with an occasion to elicit more kin terms on the side.

D5 will show whether the language's morphosyntax uses the same possessive structures for all nouns, or whether it distinguishes – like many Oceanic languages do, for example – between possession of kin terms (*my grandparents, your mother, their relatives...*), possession of body parts (*her back, your eyes*) and possession of other types of nouns (*their room; their friends; their wedding; her schoolbag; your smile*).

Besides possession, D5 elicits complex noun phrases showing a diversity of internal syntax: *the pictures of my family; some of your relatives; an old photo album I just found; the people around them; the day of their wedding; the day when they got engaged; a major event for the whole family; your grandparents on the photo*.

Some spatial expressions may be of interest: *in my parents' room; on the left, on the right; around them; behind her; on her back; from school; on the photo; far away from here; down the road; to the west...*

But the main linguistic focus of D5 is arguably tense, aspect, and mood. Sentences include cases of:

- the experiential perfect (*have you ever seen; I've never seen; I've met; you haven't met him*),
- the immediate past (*I just found*)
- an equational predicate in the present (*that's you; this woman is your mother*) or in the past (*was that the day...; she was a child*)
- a stative in the present (*it looks old; he lives far away; I know; I'm taller*) or in the past (*it was located; did you know them*)
- a resultative in the present (*you haven't changed; I've grown up now; you've eaten too much*)
- a past, semelfactive event (*the day when they got engaged; they died; they were born; I was born*)
- a progressive in the past (*she was coming back from school*)
- a habitual predicate in the past (*used to be a major event*), habitual activity in the past (*they would wear; what school did they attend*)
- an imperative (*show it to me; look at her schoolbag*)
- a negative counterfactual (*she would not be able to carry me*)

The dialogue also includes various evidential types – indexing ways in which the characters source their statements:

- from hearsay (*I heard they died; in those times, people would wear...*)
- from visual cues (*it looks like an old picture; I guess she was coming back from school*)
- from reasoning and inference (*the people must be their friends; you haven't met him*)
- from firsthand experience (*an album I just found; I'm taller than her*)

Several sentences show subordination (*I think I know who this child is; an old album I just found; the day when they got engaged; an old school that doesn't exist any more; they died before I was born...*). The structure 'I GUESS she was coming back' may be rendered by a subordinate pattern in some languages – like in English – or by an evidential particle in other languages; the same applies for 'I HEARD they died'.

The dialogue shows a couple of comparative phrases: *they were older than this...; I'm taller than her, and heavier too.*

Finally, the text has deictics (*this, that, here, like that...*) as well as noun articles with various meanings – situational, anaphoric, recognitional, generic (cf. Dryer 2014).

5. Conclusion

While elicitation questionnaires based on isolated sentences can be useful for exploring certain grammatical domains in depth, they lack any retrievable pragmatic context. The resulting ambiguities, lexical or grammatical, can make it difficult for speakers to identify the intended meaning, let alone render it in an idiomatic way. Such basic questionnaires also fail at capturing various ordinary linguistic features such as question–answer pairs, long-range anaphoric reference, or common discourse particles.

Fluent speech is of higher linguistic quality, but makes it difficult for the linguist to control for the presence of specific grammatical features. Due to their size limitations, text corpora collected in the field may lack many constructions useful to the linguist, who can thus wish to elicit them one way or another.

The present paper advocates for a new approach to elicitation, by promoting naturalistic conversation as the key to successful language description. Rather than being based on pure translation, conversational questionnaires consist of a meaningful exchange anchored in a plausible real-life context, and seeking its most natural expression in the target language. While keeping control of the grammatical features to be tested, the linguist camouflages them in a smooth and simple chunk of dialogue that is almost effortless, possibly even pleasant, for consultants.

Five dialogues were presented and analyzed here, as an illustration of the method. Rendering just these five texts in a given language would already provide a wealth of data in a large array of linguistic domains, enough for a solid grammar sketch. Of course, more than five texts are needed to cover the whole array of possible “speech motifs” (§3.2.3) that are encoded in natural languages. Interested linguists are encouraged to take up this endeavor themselves, devising new questionnaires to fill the gaps. These texts can be tailored so as to reflect the cultural peculiarities of a region, or to explore specific areas of interest in a grammatical system.

Ideally, new research projects setting out to study a given domain (kin terms, spatial deixis, reciprocals, discourse particles, emotions, social cognition...) could set up an onomasiological component in their fieldwork kit, in the form of elaborate conversational questionnaires created around their target domain. These cumulative efforts could then be pooled, so other linguists can use these dialogues in their respective field sites. The elaboration of such questionnaires, insofar as it helps the academic community, should be credited as a research output.

Over the years, the typological community could develop a large thesaurus of speech motifs, embodied in naturalistic conversational questionnaires. Once tried across different languages, these dialogues would be the basis for massive multilingual parallel corpora, which would be citable, reproducible, and mutually comparable. This new array of tools will enhance our means to explore empirically the diversity of language patterns around the world.

Appendix A. Translation of D1 in Mwotlap

I provide the translation here of dialogue D1 in Mwotlap, an Oceanic language of northern Vanuatu. Transcription is in IPA. The linguist reader can try and figure out the meaning of each word or morpheme from the English version of D1 presented in §4.1.1.

TITLE: kamjo sɔ van japjap

-
1. A – lɛmtap newe!
 2. B – lɛmtap newe!
 3. A – nek itok?
 4. B – inɔ itok, ʷba komjo?
 5. A – ɔ̃ [ʌ], kamjo itok sɛ.
 6. B – komjo sɔ van avɛ?
 7. A – kamjo sɔ van how le^mbe ɛn, a:: how ʉɛn.
 8. B – sɔ akteʉ? a sɔ suwsuw ok?
 9. A – ɔ̃ɔ̃ [ʔ-ʌ] tateh, kamjo tit suwsuw veste k^ʷijijɪ.
 10. kamjo sɔ van japjap.
 11. kamjo sɔ jap tauʉanmem momo te le^mbe.
 12. B – ɔ hijwe. wo nalavet ae lepno?!
 13. nɔk ɛt ɛʉlɔl tɛ.
 14. A – ɔ̃ɔ̃, tateh lavet.
 15. kamjo nɛmjɔs ewe sɔ vel tauʉanmem ʉɛnʉɛn.
 16. iʉɲik mewel to nututu vitwauʉ lamaket anejeh ɛ,
 17. ʷba intimamjo kojo mal ʉɛn k^ʷɛt,
 18. to:: tateh ʉɛnmem hap se leŋ^m ɛʉɛn !
 19. ʷbasto, tateh nɔnmem sem sɛ a sɔ hajtejeh.
 20. kamjo tit hiʉap veste a sɔ van japjap k^ʷijijɪ.
 21. B – ɔ, nɔ melep.
 22. nɛmʉajsen a sɔ tateh ʉɛnmi hap sɛ.
 23. nɔ tɛ^mbjiŋ veh kimi, jehe minɔ.
 24. nihnaʉ nauʉanmamjo iʉɲik ɛ hip ae,
a nihnaʉ te letk^ʷe nɔnmamjo.
 25. ike a miʉiljak to mɛ anɔj to mavan tej mɛ leŋ^m.
 26. komjo wɔ nɛmjɔs ɛ, kamjo telep tauʉanmi veh van.
 27. A – et, hijwe? vewe komjo a nekeken!
 28. B – tateh, itok.
 29. A – komjo sɔ lep tauʉanmem hinaʉ mɛ,
to kamjo sɔ lep tauʉanmi momo van.
 30. k^ʷijijɪ aŋk^ʷɔŋ ɛ ʉɛn ʷdɛl sɔ ʉɛnʉɛn tiwauʉ.
 31. B – namnan les. sowle!
 32. A – ɛt lɔk sɛ nek!
-

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References

- Ameka, Felix K. & Dench, Alan & Evans, Nicholas (eds.), *Catching language: The standing challenge of grammar writing*. Trends in Linguistics. Studies and Monographs [TiLSM]. Berlin, New York: Mouton de Gruyter.
- Bakker, Peter. 2008. Pidgins versus creoles and pidgincreoles. In Kouwenberg, Silvia & Singler, John Victor (eds.), *The handbook of pidgin and creole studies*, 130-157. Oxford: Wiley-Blackwell.
- Barth, Danielle & Evans, Nicholas. 2017. SCOPIC design and overview. In Danielle Barth & Nicholas Evans (eds), *Social Cognition Parallax Interview Corpus (SCOPIC) Language Documentation & Conservation Special Publication 12*, 1–21. Honolulu: University of Hawaii. [<http://nflrc.hawaii.edu/ldc/sp-12>]
- Bec, Pierre. 1986. *La langue occitane*. 5th edition. (Que sais-je ? 1059.) Paris: Presses universitaires de France.
- Berez-Kroeker, Andrea L. & Gawne, Lauren & Smythe Kung, Susan & Kelly, Barbara F. & Heston, Tyler & Holton, Gary & Pulsifer, Peter & Beaver, David I. & Chelliah, Shobhana & Dubinsky, Stanley & Meier, Richard P. & Thieberger, Nick & Rice, Keren & Woodbury, Anthony C. 2018. Reproducible research in linguistics: A position statement on data citation and attribution in our field. *Linguistics* 56 (1). 1–18.
- Boula De Mareüil, Philippe & Vernier, Frédéric & Rilliard, Albert. 2017. Enregistrements et transcriptions pour un atlas sonore des langues régionales de France. *Géolinguistique* 17. 23–48.
- Bradley, David. 2007. What elicitation misses: Dominant languages, dominant semantics. *Language Documentation & Description* 4. 136–144.
- Camden, William. 1979. Parallels in structure and lexicon and syntax between New Hebrides Bislama and the South Santo language spoken at Tangoa. In Mühlhäusler, Peter (ed.), *Papers in Pidgin and Creole Linguistics, No.2*, 51–117. Pacific Linguistics, A-57. Canberra: Australian National University.
- Chafe, Wallace (ed.). 1980. *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Norwood, New Jersey: Ablex. [<http://pearstories.org/>]
- Chafe, Wallace. 1994. *Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing*. University of Chicago Press.
- Chafe, Wallace. 1997. Polyphonic topic development. In T. Givón (ed.), *Conversation: Cognitive, communicative and social perspectives*. (Typological Studies In Language 34), 41-54. New York: Benjamins.

- Chelliah, Shobhana L. 2001. The role of text collection and elicitation in linguistic fieldwork. In Newman, Paul & Ratliff, Martha (eds.), *Linguistic Fieldwork*, 152–165. Cambridge: Cambridge University Press.
- Chelliah, Shobhana L. & de Reuse, Willem J. 2011. *Handbook of Descriptive Linguistic Fieldwork*. New York: Springer
- Chérel, Alphonse. 1929. *Assimil: L'anglais sans peine*. Paris: Assimil.
- Chérel, Alphonse. 1940. *French without toil*. Assimil spare-time daily courses. Paris: Assimil.
- Corbett, Greville. 2000. *Number*. Cambridge: Cambridge University Press.
- Cormier, Kearsy & Schembri, Adam & Woll, Bencie. 2010. Diversity across sign languages and spoken languages: Implications for language universals. *Lingua* 120 (12). 2664–2667.
- Cysouw, Michael, & Wälchli, Bernhard. 2007. Parallel texts: using translational equivalents in linguistic typology. *STUF-Sprachtypologie und Universalienforschung* 60 (2). 95–99.
- Dachkovsky, Svetlana & Healy, Christina & Sandler, Wendy. 2013. Visual intonation in two sign languages. *Phonology* 30 (2). 211–252.
- Dahl, Östen. 2007. From questionnaires to parallel corpora in typology. *STUF-Sprachtypologie und Universalienforschung* 60 (2). 172–181.
- Dimitriadis, Alexis & Everaert, Martin. 2001. *Anaphora typology questionnaire*. Utrecht Institute of Linguistics. Unpublished ms.
[<http://www.let.uu.nl/~Alexis.Dimitriadis/personal/database/Questions.pdf>]
- Dryer, Matthew. 2014. Competing methods for uncovering linguistic diversity: The case of definite and indefinite articles (Commentary on Davis, Gillon, & Matthewson). *Language* 90 (4). 232–249.
- Dutton, Thomas Edward & Voorhoeve, Clemens Lambertus. 1974. *Beginning Hiri Motu* (Pacific Linguistics D 24). Canberra: Australian National University.
- Dutton, Tom. 1985. *A new course in Tok Pisin (New Guinea Pidgin)*. In collaboration with Dicks Thomas (Pacific Linguistics D 67). Canberra: Australian National University.
- Evans, Nicholas. 2010. Semantic typology. In Jae Jun Song (ed.), *The Oxford Handbook of Linguistic Typology*, 504–533. Oxford: Oxford University Press.
- Filimonova, Elena (ed.). 2005. *Clusivity: Typology and case studies of the inclusive–exclusive distinction*. New York: Benjamins
- Finnegan, Ruth. 1992. *Oral traditions and the verbal arts: a guide to research practices*. (ASA Research Methods in Social Anthropology). London: Routledge.
- Finnegan, Ruth. 2010. Rewards and issues in studying oral literature: Some personal reflections. In Gunn, Imogen & Turin, Mark (eds.), *Oral Literature and Language Endangerment*, 13–26. Special issue of *Language Documentation & Description*, 8. London: SOAS.
- François, Alexandre. 2001. *Contraintes de structures et liberté dans l'organisation du discours. Une description du mwotlap, langue océanienne du Vanuatu*. Doctoral thesis in Linguistics, Université Paris-IV Sorbonne. 3 volumes. [<https://tel.archives-ouvertes.fr/tel-00136463/>]
- François, Alexandre. 2002. *Araki: A disappearing language of Vanuatu*. Pacific Linguistics, 522. Canberra: Australian National University.
- François, Alexandre. 2003. *Field questionnaire form northern Vanuatu: Dorig language*. Handwritten ms., digitized and archived online, in open access. Online Digital Sources and Annotation System (ODSAS). [tiny.cc/AF_Q_Dorig]
- François, Alexandre. 2004–2015. Materials for vernacular literacy in twelve languages of northern Vanuatu. 14 vol. Self-published. [<http://alex.francois.online.fr/AF-literacy-e.htm>]
- François, Alexandre. 2009. The languages of Vanikoro: Three lexicons and one grammar. In Evans, Bethwyn (ed.), *Discovering history through language: Papers in honour of Malcolm Ross*, 103–126. Canberra: Australian National University.

- François, Alexandre. 2011. Social ecology and language history in the northern Vanuatu linkage: A tale of divergence and convergence. *Journal of Historical Linguistics* 1, 175-246.
- François, Alexandre. 2012. The dynamics of linguistic diversity: Egalitarian multilingualism and power imbalance among northern Vanuatu languages. *International Journal of the Sociology of Language* 214, 85-110.
- François, Alexandre. 2013. Linguistic notes from Island Melanesia: Online archive of digitized fieldwork documents from Vanuatu and the Solomon Islands. Electronic files, 4156 pages. *Online Digital Sources and Annotation System* (ODSAS). Marseille: CREDO-CNRS. [<https://www.odsas.net/>]
- François, Alexandre. 2014. *Structures et dynamiques des systèmes linguistiques: Documentation, description, comparaison des langues océaniques*. Dissertation for Habilitation à Diriger des recherches. Paris: Institut National des Langues et Civilisations Orientales. [<https://tel.archives-ouvertes.fr/tel-02004673>]
- François, Alexandre. 2019. In search of island treasures: Language documentation in the Pacific. In McDonnell, Bradley & Berez-Kroeker, Andrea L. & Holton, Gary (eds.), *Reflections on Language Documentation 20 years after Himmelmann 1998*. (*Language Documentation & Conservation* special publication, 15.), 276-294.
- François, Alexandre & Franjeh, Michael & Lacrampe, Sébastien & Schnell, Stefan. 2015. The exceptional linguistic density of Vanuatu. In François, Alexandre & Lacrampe, Sébastien & Franjeh, Michael & Schnell, Stefan (eds.), *The Languages of Vanuatu: Unity and Diversity*. (Studies in the Languages of Island Melanesia, 5). Canberra: Asia-Pacific Linguistics. 1-21.
- Gil, David. 2015. The Mekong-Mamberamo linguistic area. In Enfield, Nicholas J. & Comrie, Bernard (eds.), *Languages of Mainland Southeast Asia: The state of the art*. (Pacific Linguistics 649), 266-355. Berlin: DeGruyter.
- Gippert, Jost & Himmelmann, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of language documentation* (Trends in Linguistics: Studies and Monographs, 178). Berlin: Mouton de Gruyter.
- Grenoble, Lenore. 2007. The importance and challenges of documenting pragmatics. *Language Documentation & Description* 4, 145-162.
- Hagège, Claude. 2008. Towards a typology of interrogative verbs. *Linguistic Typology* 12 (1). 1-44.
- Haspelmath, Martin. 2005. Argument marking in ditransitive alignment types. *Linguistic Discovery* 3(1). 1-21
- Haviland, John B. 2006. Documenting lexical knowledge. In Gippert, Jost & Himmelmann, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of language documentation* (Trends in Linguistics: Studies and Monographs, 178), 129-162. Berlin: Mouton de Gruyter.
- Heine, Bernd. 1997. *Possession: Cognitive sources, forces, and grammaticalization*. (Cambridge Studies in Linguistics, 83.) Cambridge: Cambridge University Press.
- Hellwig, Birgit. 2006. Field semantics and grammar-writing: Stimuli-based techniques and the study of locative verbs. In Ameka, Felix K. & Dench, Alan & Evans, Nicholas (eds.), *Catching language: The standing challenge of grammar writing*. Trends in Linguistics. Studies and Monographs [TiLSM], 321-358. Berlin, New York: Mouton de Gruyter.
- Heeringa, Wilbert & John Nerbonne. 1999. Change, convergence and divergence among Dutch and Frisian. *Philologia Frisica Anno*. 88-109.
- Himmelmann, Nikolaus P. 1998. Documentary and descriptive linguistics. *Linguistics* 36(1). 161-195.

- Himmelman, Nikolaus P. 2006. Prosody in language documentation. In Gippert, Jost & Himmelman, Nikolaus P. & Mosel, Ulrike (eds.), *Essentials of language documentation* (Trends in Linguistics: Studies and Monographs, 178), 163–181. Berlin: Mouton de Gruyter.
- International Phonetic Association. 1912. *The Principles of the International Phonetic Association*. London: Daniel Jones.
- Lercari, Claude & Vernaoudon, Jacques & Sam, Léonard & Gowé, Marc. 2001. *Qene drehu - Langue de Lifou : Méthode d'initiation* (Langues Kanak: Méthodes et Documents). Nouméa: Centre de Documentation Pédagogique.
- Levinson, Stephen C. 1995. Interactional biases in human thinking. In Esther N. Goody (ed.), *Social intelligence and interaction*, 221–260. Cambridge University Press.
- List, Johann Mattis & Cysouw, Michael & Forkel, Robert. 2016. Concepticon: A resource for the linking of concept lists. *Proceedings of the Tenth International Conference on Language Resources and Evaluation, May 23-28, 2016, Portorož, Slovenia*.
- List, Johann Mattis & Cysouw, Michael & Greenhill, Simon & Forkel, Robert (eds.). 2018. *Concepticon*. Jena: Max Planck Institute for the Science of Human History. <https://concepticon.clld.org/>.
- Lüpke, Friederike. 2010. Research methods in language documentation. *Language Documentation & Description* 7. 55-104.
- Malchukov, Andrej & Haspelmath, Martin & Comrie, Bernard. 2010. Ditransitive constructions: A typological overview. In Malchukov, Andrej L. & Haspelmath, Martin & Comrie, Bernard (eds.), *Studies in ditransitive constructions: A comparative handbook*, 1–64. Berlin, New York: Mouton De Gruyter.
- Mithun, Marianne. 2001. Who shapes the record: the speaker and the linguist. In Newman, Paul & Ratliff, Martha (eds.), *Linguistic Fieldwork*, 34–54. Cambridge: Cambridge University Press.
- Mithun, Marianne. 2015. Discourse and grammar. In Tannen, Deborah & Hamilton, Heidi & Schiffrin, Deborah (eds.), *The handbook of discourse analysis*, 11-41. New York: John Wiley & Sons.
- Moltmann, Friederike. 1997. Intensional verbs and quantifiers. *Natural Language Semantics* 5 (1). 1-52.
- Montague, Richard. 1970. Pragmatics and intensional logic. *Synthese* 22 (1-2), 68-94.
- Moreno Cabrera, Juan Carlos. 1992. Adverbial quantification and other adverbialia. Eurotyp V, 4. Strasbourg: European Science Foundation. [https://www.eva.mpg.de/lingua/tools-at-lingboard/questionnaire/adverbial-quantification_description.php]
- Nathan, David & Fang, Meili. 2009. Language documentation and pedagogy for endangered languages: A mutual revitalisation. *Language Documentation and Description* 6, 132–160.
- Newman, Paul & Ratliff, Martha (eds.). *Linguistic Fieldwork*. Cambridge: Cambridge University Press.
- Ochs, Elinor, Emanuel A Schegloff & Sandra A Thompson. 1996. *Interaction and grammar*. Vol. 13. Cambridge University Press.
- Padden, Carol A. 2015. Methods of research on sign language grammars. In Orfanidou, Eleni & Woll, Bencie & Morgan, Gary (eds.), *Research Methods in Sign Language Studies*, 141–155. Chichester, UK: John Wiley.
- Paia, Mirose & Vernaoudon, Jacques. 2003. *Tabitien: ia ora na. Méthode d'initiation à la langue tahitienne* (Méthodes de langues Bonjour salut). 3rd edn. Paris: Bibliothèque publique d'information Centre Pompidou.

- Rakhilina, Ekaterina & Reznikova, Tatiana. 2016. A Frame-based methodology for lexical typology. In Juvonen, Päivi & Koptjevskaja-Tamm, Maria (eds.), *The Lexical Typology of Semantic Shifts*, 95-130. Berlin: de Gruyter.
- Roach, P.J. 1989. Report on the 1989 Kiel Convention: International Phonetic Association. *Journal of the International Phonetic Association* 19(2). 67–80.
- Silverstein, Michael. 1979. Language structure and linguistic ideology. In Clyne, Paul & Hanks, William F. & Hofbauer, Carol L. (eds.), *The Elements: A parasection on linguistic units and levels*, 193–247. Chicago: Chicago Linguistic Society.
- Skopeteas, Stavros & Fiedler, Ines & Hellmuth, Sam & Schwarz, Anne & Stoel, Ruben & Fanselow, Gisbert & Féry, Caroline & Krifka, Manfred. 2006. *Questionnaire on Information Structure: Reference Manual*. ISIS Volume 4. Potsdam: Universitätsverlag Potsdam.
- Trosborg, Anna. 1994. *Interlanguage pragmatics: Requests, complaints, and apologies*. (Studies in anthropological linguistics, 7.) Berlin: de Gruyter.
- Trosborg, Anna (ed.). 2010. *Pragmatics across languages and cultures*. (Handbooks of Pragmatics, 7.) Berlin: de Gruyter.
- Tryon, Darrell & Jean-Michel Charpentier. 2004. *Pacific Pidgins and Creoles: Origins, Growth and Development*. Berlin-New York: Mouton de Gruyter.
- Turnbull, William. 2001. An appraisal of pragmatic elicitation techniques for the social psychological study of talk: The case of request refusals. *Pragmatics* 11 (1). 31–61.
- Uther, Hans-Jörg. 2011. *The Types of International Folktales: A Classification and Bibliography*. Three volumes. Helsinki: Suomalainen Tiedeakatemia – Academia scientiarum Fennica.
- Vuillermet, Marine & Desnoyers, Antoine. 2013. A hunting story – Yendo a cazar: A visual stimulus for eliciting constructions that associate motion with other events. Linguistics Department, UC Berkeley, ms.
- Wierzbicka, Anna. 2003. *Cross-Cultural Pragmatics: The Semantics of Human Interaction*. Berlin: deGruyter Mouton.
- Woodbury, Anthony C. 2011. Language documentation. In Austin, Peter K. & Sallabank, Julia (eds.), *The Cambridge Handbook of Endangered Languages*, 159-186. Cambridge: Cambridge University Press.
- Zimmerman, Thomas E. 2001. Unspecificity and Intensionality. In Féry, Caroline & Sternefeld, Wolfgang (eds.), *Audiatur Vox Sapientiae*, 514–532. Berlin: Akademie Verlag.