Constructed languages in the classroom

Constructed languages (purposefully invented languages like Esperanto and Klingon) have long captured the human imagination. They can also be used as pedagogical tools in the linguistics classroom to enhance how certain aspects of linguistics are taught and to broaden the appeal of linguistics as a field. In this paper, I discuss the history and nature of constructed languages and describe various ways I have successfully brought them into use in the linguistics classroom. I conclude from the results of my courses that linguists should take a closer look at how they might benefit from similarly enlisting this often criticized hobby into more mainstream use in the linguistics classroom.*

Constructed languages in the classroom

1. INTRODUCTION. CONSTRUCTED LANGUAGES (or CONLANGS, as they are more usually called by enthusiasts) are artificial languages that are intentional products of individual humans' conscious imaginations. They stand in contrast to natural languages, the usual object of study in linguistics, which arise spontaneously and effortlessly from the collective human capacity for language. Some of the most notable examples of conlangs are the Elvish languages Quenya and Sindarin from J.R.R. Tolkien's Middle-earth novels (*The Hobbit, The Lord of the Rings* trilogy, etc.) and the Klingon language created by Marc Okrand for the *Star Trek* franchise. Knowledge of linguistics is usually necessary for creation of a successful conlang (Tolkien was well-versed in philology, and Okrand earned a PhD in linguistics from the University of California at Berkley), but the relationship between conlangs and linguistics is decidedly asymmetrical, because the vast majority of linguists manage to be quite successful without ever incorporating conlangs into their research, in part because CONLANGING (the practice of creating a conlang) is widely perceived as a frivolous hobby rather than a serious intellectual pursuit. Why waste time on an artificial language like Quenya or Klingon, when that time could instead be spent analyzing the syntax of wh-questions in Tlingit, or teasing apart the complexities of Kàlòŋ vowel harmony, or documenting the speech of the last speakers of Ayapaneco, or even just learning a more utilitarian language like German, Mandarin, or American Sign Language?

In this article, I address this question by showing that conlangs can in fact contribute to linguistics in ways that natural languages cannot, that they can have use to linguists beyond entertainment value. I begin in §2 with a brief tour through the history of conlanging, concluding with a discussion of attitudes towards conlangs from those on the outside, with a particular focus on attitudes expressed by linguists. In §3–5, I describe my own experiences using conlangs in undergraduate linguistics courses, and I discuss other linguists' similar experiences that I am aware of. I conclude in §6 with a summary of the benefits of using conlangs in linguistics courses and suggestions to linguists for similarly incorporating conlangs into their own courses.

2. CONLANGS: HISTORY AND ATTITUDES. The following is merely a brief overview of the history of conlanging. For a more detailed look at this history, I recommend Arika Okrent's (2010) *In the land of invented languages: Adventures in linguistic creativity*, in which she traces the evolution of conlanging and presents intriguing stories about some of the more fascinating conlangers. Okrent 2010 is a highly accessible and entertaining work that I have found excellent as required reading in the dedicated conlanging course I describe in §5. See also Adams's (2011) edited volume *From Elvish to Klingon: Exploring invented languages* for more information on modern conlanging and the boundaries of conlanging itself, which would also be suitable as supplemental reading in any course that discusses conlanging.[1]

Throughout recorded history, humans have pushed language beyond the confines of ordinary use in fun and creative ways. Poetry, ludlings, and humor are just some of ways that we

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[1] I set aside the interesting question of how revitalized languages and sign languages should fit into a fuller discussion of conlangs. While their initial states are indeed constructed to some degree, they now have communities of native speakers, so they would usually be classified as natural languages. These and other languages that straddle the somewhat fuzzy boundary between constructed and natural are beyond the scope of this work.

play with language, and all of these types of language play have proven to be rich ground for linguistic analysis. Examples in the literature are far too numerous to exhaustively cite here, but poetry plays an important role in Halle and Keyser's (1971) analysis of English stress, the phonological structure of ludlings is crucial to Ito and colleagues' (1996) analysis of Japanese prosody, and Sutton-Spence and Napoli (2009) extensively analyze various linguistic properties of humor in British Sign Language and American Sign Language. Language play, though not a core object of study, is certainly an important and respected object of study in linguistics.

Conlanging is another type of language play, documented since at least the 12th century, when German abbess Hildegard of Bingen created the Latin-based conlang Lingua Ignota, whose true purpose has been lost to time (Higley 2007). Early conlangs, especially during the Enlightenment, were often driven by a belief that thought was directly and significantly shaped by language, so that, for example, using a logical, clear language would lead to logical, clear thinking. One such early conlang is John Wilkins's (1668) Philosophical Language, which is based on an immense and complex hierarchy of semantic concepts, designed to avoid the 'defects and imperfections' (1668:1) which he thought 'contribute to the disfiguring of [natural languages] with false appearances' (1668:18). Wilkins's targets include polysemy (because it 'renders speech doubtful and obscure'; 1668:17) and irregular morphological patterns ('which abound in every Language, and in some of them are so numerous, that Learned men have scrupled whether there be any such thing as Analogy'; 1668:18), among other 'corruptions' in natural languages (1668:6). Though ultimately unsuccessful in being adopted as a communication tool to facilitate precise scientific thinking, Wilkins' semantic hierarchy is arguably one of the first and most comprehensive examples of a thesaurus, providing direct inspiration for Roget's more famous version of the concept (Roget 1884:xxiii–xxiv). Thus, Wilkins's Philosophical Language was a success in some sense, but like other philosophical conlangs of its ilk, it failed to provide the deep insight and logical thought that its creator had hoped for. (See Eco 1993 for a detailed history of these philosophical languages.)

Conlangs have also often been invented as auxiliary languages for the purpose of promoting intercultural harmony, with the creators believing that speaking different languages was a source of strife and that speaking a common language would increase understanding (cf. the story of the tower of Babel from Genesis 11:1–9). L.L. Zamenhof's Esperanto, published in 1887, is the most successful conlang of this type, with hundreds of thousands, perhaps even millions, of speakers across the world with some degree of fluency (Bergen 2001, Lewis et al. 2015), including hundreds of native or nearly native speakers (Versteegh 1993, Corsetti 1996). But Esperanto and its ideological peers failed to achieve their creators' fundamental goal for essentially the same reason the philosophical languages did: the language a person uses simply does not have the kinds of profound effects on thought and behavior that was believed and hoped for. A host of evidence weighs heavily against all but some limited aspects of this sort of linguistic relativism (see Gleitman and Papafragou 2005 for an overview), but the concept is so compelling that it is regularly resurrected in popular media under sensationalist headlines like 'Why speaking English can make you poor when you retire' (Bowler 2013) and 'No one could see the color blue until modern times' (Loria 2015).

In building his conlangs, J.R.R. Tolkien was not preoccupied with the same lofty concerns for universal truth, logical thought, and world peace that his contemporaries and predecessors had been. Tolkien was a philologist, familiar with many different languages, including Welsh, Finnish, and Anglo-Saxon. He had a solid understanding of the similarities and differences across languages, as well as how languages evolve over time. He used this

knowledge to create a variety of conlangs, some with rich interconnected historical derivations, for the primary purpose of the intellectual enjoyment of doing it and for the accomplishment of creating a work of linguistic art. He wrote his Middle-earth novels (published over a span of forty years, from *The Hobbit* in 1937 to the posthumous *The Silmarillion* in 1977) as a container to showcase these languages, because he knew they would not be taken seriously otherwise; that is, Tolkien created the Middle-earth novels because of his conlangs, not vice versa (Tolkien 1981:219). His Middle-earth novels have become some of the most beloved works of fantasy literature in the world, having been translated into dozens of languages and spawning some of the most successful movies of all time (as of 16 January 2016, the six movies in *The Lord of the Rings* and *The Hobbit* trilogies all hold spots in the top 50 movies on Box Office Mojo's ranking of movies by all time worldwide box office earnings, with combined gross earnings of nearly US$6 billion).

Tolkien's deep knowledge of language and attention to detail lent his conlangs significant verisimilitude which set the standard for conlangs ever since, inspiring the creation of more sophisticated, more realistic conlangs in science fiction and fantasy, such as Victoria Fromkin's Paku (from the 1970s television series *Land of the Lost*), Matt Pearson's Thhtmaa (from the 1990s television series *Dark Skies*), Marc Okrand's Atlantean (from the 2001 movie *Atlantis: The Lost Empire*), Paul Frommer's Na'vi (from the 2009 movie *Avatar*) and Barsoomian (from the 2012 movie *John Carter of Mars*), Christine Schreyer's Kryptonian (from the 2013 movie *Man of Steel*), and David J. Peterson's Dothraki and Valyrian (from the 2010s television series *Game of Thrones*) and Irathient and Castithan (from the 2010s television series *Defiance*). The depth and naturalistic realism of these conlangs have facilitated a tighter bond between the audience and the fictional work (for those who are so inclined to care about such details, of course; similar bonding effects can be observed with any accurate representations of specialized topics within a fictional setting: medieval weaponry, interstellar travel, extraterrestrial ecology, etc.), most notably for Klingon from the *Star Trek* franchise. The passion among fans for Klingon and other conlangs has spawned countless mailing lists, websites, publications, clubs, conventions, and even language institutes where these languages are used and learned.

It is this passion for fictional conlangs that I think linguists can and should tap into. The explicit use of conlangs can attract students into linguistics courses that they might not otherwise have thought to take because of their enthusiasm for particular popular conlangs, and the opportunity to build their own conlangs can inspire students to seek out and understand the structure of underdocumented languages on their own, because they want to make their conlang personal and special. That enthusiasm and personal attachment can easily be channeled from conlangs to linguistics, enlarging our audience, enriching their classroom experience, and solidifying their commitment to the material.

However, outsiders to conlanging, including many linguists, have long held negative attitudes towards the practice (Versteegh 1993:539–40). Noam Chomsky notoriously expresses this viewpoint in a 2003 interview for the second season of *Da Ali G Show*, by telling Ali G that 'you can [create a new language] if you like, and nobody will pay the slightest attention to you, because it would just be a waste of time'. Indeed, it was precisely these kinds of attitudes that led Tolkien to write his Middle-earth novels as a vessel for his conlangs, since he believed his conlangs would not be taken seriously in isolation.

These attitudes are changing. More people are recognizing the care, effort, and expertise in linguistics that goes into some of the more successful conlangs, more linguists are coming out of the closet as conlangers, and conlanging itself is making its way into serious linguistics.

Indeed, even linguists who look down upon conlanging have likely been using conlangs all along without even realizing it. As I show in the rest of this paper, this shift in attitude is beneficial to the field of linguistics, as greater acceptance of conlangs provides us with valuable tools for teaching linguistics.

3. USING CONLANGS FOR DATA SETS. In a typical linguistics course, I often want to give students one or more short data sets, where each set clearly demonstrates one particular phenomenon. However, it is not uncommon to discover that no such data set is readily available; instances of the phenomenon in the languages I find may have exceptions or irregularities that are difficult to understand, or may have complex interactions with other phenomena, or may depend on extra knowledge that the students do not yet have access to. I have encountered this problem nearly every year I have been teaching, and I suspect most linguists have encountered it in their own courses as well.

Sometimes, my solution is to use a conlang instead of a natural language. The simplest conlang for this scenario is what is known as an A POSTERIORI CONLANG, a conlang that takes a pre-existing language as input and makes one or more modifications to it. A simple a posteriori conlang can thus be constructed by taking data from a natural language and simplifying or regularizing it (e.g. by removing suprasegmental information when concerned only with segmental alternations), resulting in streamlined data that allows students to focus on the one phenomenon of interest without being distracted by extraneous complexities that are not directly relevant to topic at hand. Of course, when manipulating data this way, the students must be told that real languages do not behave so nicely and that the data have been regularized for convenience. This kind of a posteriori conlang data set is probably the most common way that conlangs find their way into the linguistics classroom, partly because the need for them is so common, and partly because this act does not feel like conlanging to an outsider, and thus, is not subject to the negative attitudes that a more prototypical conlang receives.

The kind of conlang most people think of is called an A PRIORI CONLANG, which is a conlang built from the ground up, without being directly derived from an existing language. I have also adopted this solution for some data sets, most notably, when I have taught historical linguistics and wanted a large data set for multiple related languages with multiple historical interactions that are individually readily identifiable. A sufficient number of these data sets are hard to come by to suit my purposes for both in-class discussion and take-home assignments. Constructing a data set from scratch allows me to have fine-grained control over the data. If I want to have a huge set of data from six languages, in which two of them exhibit different kinds of palatalization, one of which interacts opaquely with a later vowel lowering, I can construct them to do so exactly as desired, without having to search through dozens of texts to find the right kind of data, which will likely be infested with undesirable complexity anyway.

This kind of artificially constructed data is ubiquitous in mathematics and the natural sciences ('a train traveling west at 88 km/hr leaves Boston at noon...', 'a 13 kg child is suspended in a swing by a 2 m chain...', etc.), so it is not surprising that it could be used in linguistics, too. Just as students can validly learn how speed and harmonic oscillation work by considering abstract constructed scenarios, so too can they validly learn how reduplication works by considering data from an a priori conlang. The concrete reality of the behavior of the Acela Express, or of the playground swings in a specific neighborhood playground, or of Ponapean morphology does not preclude the use of a priori data for the purposes of learning. Indeed,

abstract data more divorced from the minute details of reality can be preferred when simplicity matters, as scientists have long known.

In addition, constructed data sets, by their very nature, prevent students from being able to seek out the answers elsewhere, so that they are free to come up with a solution on their own without being influenced by (or able to plagiarize from) an existing analysis. If I give my students sentences from an a priori conlang, they cannot have their creativity caged by someone else's syntactic analysis of this language, because no such analysis exists. As a phonologist, I do not have as ready access to obscure syntactic data as a syntactician would, so for nearly any natural language I am likely to have data for, syntactic analyses will almost certainly be available with a simple Google search. Indeed, that is probably how I would have found the data in the first place. By constructing a priori data instead, I can ensure that the students' analyses are limited only by their imaginations and abilities, rather than by whatever analyses they may find elsewhere.

4. USING CONLANGS FOR CLASS ACTIVITIES. My most well-received uses of conlanging in my courses are when my students get to do it themselves for an activity or assignment. When I teach historical linguistics, I include a section on family relationships and how a single language can evolve into separate languages over time. Normally in the course, we work backwards, looking at multiple modern languages and using the comparative method to reconstruct the ancestral proto-language. However, though the students understand how the direction of time relates to the data they are looking at, I have always found that they did not really connect with that understanding on an intuitive level. In 2014, inspired by discussion in my linguistic typology course (discussed in §5), I introduced a new activity into my historical linguistics course, giving the students the opportunity to observe language evolution step by step by shaping it themselves, using the knowledge they had gained so far (I use this activity fairly late in the semester, in the ninth week, after they already have a fairly solid understanding of which kinds of sound changes are and are not natural).

In this activity, each student receives a handout with a list of about 60 words from a simple a priori conlang of my design (it has no grammar, only a rudimentary lexicon), printed in a single column, with five large spaces to the right, as for the sample words in 1 (the full version of this handout is available online at http://sanders.phonologist.org/Papers/conlang-exercise.pdf):

(1)

'mouth'	pa					
'go'	tahə					
'yellow'	noə					
'head'	amadi					
'large'	qahai					

The students are then split into two groups. Each group is instructed to apply a few sound changes of their choice to the list of words, writing the final output in the first blank column. They can choose any sound changes they want, though they are encouraged to select sound changes that they have either seen before in class or could reasonably assume are possible sound changes by extrapolating from those they have seen. They are also instructed at times to replace a few words, sometimes with completely new words conforming to the current phonological structure of their language (to simulate vocabulary replacement due to semantic shift) and sometimes with words borrowed from their neighbors, modified to conform to the phonology of

their language (to simulate vocabulary replacement due to borrowing and nativization). These two groups are then split in half again, and the process is repeated: a few sound changes, a few neologisms, and a few borrowings. This continues until every student has their own individual descendent of the original language (five columns will accommodate up to 32 students). We then finish by having each student pronounce some of their more interesting words and discussing some of the sound changes that they created.

The tree in Figure 1 represents a sample outcome for the historical development of the original word *amadi* 'head' over the course of two such splits in this activity. In the first split, one group of students decides to introduce lenition, with all intervocalic plosives becoming spirants (*amadi > amaði*), while the other group decides to have their language undergo syncope of medial vowels in words consisting of more than two syllables (*amadi > amdi*) (in an actual run of this activity, the two groups will have multiple sound changes at each split). Once the students have filled in the first empty column of their worksheet with the outcomes of their sound changes, the two groups are split again. One half of the lenition group decides to delete word-final high vowels (*amaði > amað*), and the other half decides to continue the original lenition process of their branch to full deletion (*amaði > amai*). One half of the syncope group decides to use nasal place assimilation (*amdi > andi*), and the other half decides to coalesce tautosyllabic vowel-nasal sequences into nasal vowels (*amdi > ãdi*).
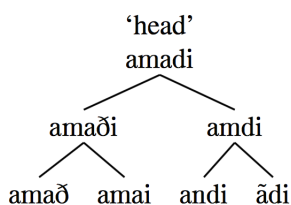

FIGURE 1. Sample historical development of *amadi* from class activity on sound change.

As the groups split again and again, the cognates across the classroom could diverge even more, perhaps through apheresis of the initial *a*, epenthesis of *h* or *ʔ* in onsetless syllables, loss of voicing contrast in obstruents, etc.

The students are encouraged to be creative, but realistic. The goal is to mimic how real language families evolve. By this point in the semester, they have seen how cognates in the same family can drastically diverge with the interaction of just a few sound changes (cf. Spanish *casa* [kasa] and French *chez* [ʃe]), which they are eager to replicate in different ways. They also often have particular ideas about what they want their final language to look like (e.g. having an elaborate vowel system or phonemic affricates), so they will think of natural ways to obtain their desired results. There is also usually a bit of a competitive streak in the classroom, with various students vying to use the craziest sound changes or combinations of sound changes they can, just to outdo each other. Once the conlanging portion of the exercise is complete, we then discuss the process and the results, critically evaluating the choices made, so that they gain an even better understanding of what kinds of sound changes they are likely to find in the wild.

This is perhaps the most beloved activity of any that I have used in the linguistics classes I have taught. I frequently have students comment fondly on that particular day in class, some reporting that they have replicated it since with their friends or even on their own for fun. I only wish I had created this activity earlier in my career, because I believe it is one of my successful pedagogical tools. A drawback to this activity is that it takes a significant amount of time to have

any useful results, between one to two hours, depending on the size of the class and the amount of leeway given.

I also use a variant of this activity in the same historical linguistics course, in the realm of semantic change rather than sound change. However, rather than having the students divide into increasingly smaller dialects, they have a single common semantic web on the chalkboard that all of them contribute to. I seed the exercise by writing up a single constructed word, like *maneru* 'water'. Students are then asked to come up one at a time and write a new meaning for this word that is plausibly derivable through ordinary semantic drift from the seed meaning or from any other meaning that has previously been written on the board, connected to it by a short line; crucially, they must also verbally explain how the new meaning is derived, using appropriate jargon. For example, the students might connect 'water' to 'lake' by narrowing, to 'dampen' by metonymy, or to 'fluid' by widening. A sample semantic web is given in Figure 2, showing a possible outcome after eight students have added new meanings.

lake ⟵—| water |—⟶ dampen

fluid (connected below water)

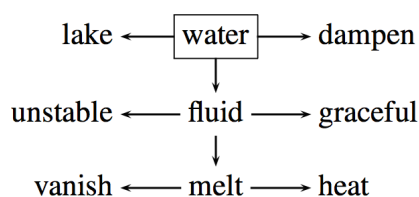unstable ⟵— fluid —⟶ graceful

vanish ⟵— melt —⟶ heat

FIGURE 2. Sample semantic web for 'water' from class activity on semantic change.

The goal of the exercise is to show how cognates can have quite different meanings, such as the well-known case of the descendants of the Proto-Indo-European root *bhel-* 'shine, burn'. In English alone, we find the descendants *blue, bleach, blaze, blemish, blind, blend, blond, blank, blanket, blush, black, flame, flamingo,* and *phlegm* (Watkins 2011:9–10), which cover a wide range of meanings, including many different colors. Of course, the students could simply be told that semantic change can lead to such divergent meanings, but the potential for extreme semantic divergence carries much more impact when they can see it happening step by step, especially since they cannot predict what directions the other students in the class may go.

This is another popular activity in my classes, as students get quite invested and inventive in their attempts to expand the semantic web. Regardless of the seed meaning, they manage to include everything from abstract concepts like science and cowardice, to colors, to various antonyms like old and young. In some cases, they will invent fanciful cultural idioms and slang when they want to make particularly tenuous leaps, by analogizing from English and other languages (blue/sad, marbles/sanity, cool/excellent, etc.). And of course, they make sure the semantic web includes their favorite subjects (sex, drugs, and linguistics). The semantic web eventually becomes a wonderfully convoluted mess that provokes a number of memorable quotes (e.g. 'can I go from "orgasm" straight to "sin", or do I need to go through "sex" first?'). This activity can easily get out of hand if left unchecked; the first time I ran it, some inappropriate jokes were made during the activity, which I did not correct at the time, and I only learned later that a student had been offended. I learned from that experience to keep a tight leash on the students, to head off potentially problematic topics, and to challenge offensive comments as soon as they arise. Of course, what counts as 'problematic' and 'offensive' will vary from class to class, so it is important to have a good sense of what topics the students can handle and to err on the side of caution, especially for larger classes.

The combination of these two activities gives the students the opportunity to directly observe how related languages slowly drift apart through incremental change and how that

incremental drift can result in drastically different outcomes. Crucially, these outcomes can be so different that a genetic relationship may no longer be apparent upon casual observation (cf. *blue* and *flamingo*), which ultimately ties back into a central point of the course: superficial similarity between languages is neither sufficient nor necessary to show they are related. This point can be somewhat abstract and difficult for the students to fully accept, but by giving them fun and memorable hands-on activities in which they can see this result develop before their eyes, they can gain a much deeper understanding of it.

5. USING CONLANGS FOR LONGER PROJECTS. The third way I include conlanging in my teaching is by fully embracing it as the primary pedagogical tool for an entire course. Between 2008 and 2015, I have taught a version of this course six times, in which each student gets to build their own conlang (the spring 2015 syllabus for this course is available online at http://sanders.phonologist.org/Papers/conlang-syllabus.pdf). The academic framework for the course is linguistic typology. We explore various typological patterns using data from natural languages, and step by step, the students use these patterns to shape the decisions they make in the structure of their own conlangs, with an eye towards making their conlang believable and naturalistic (both Rosenfelder 2010 and Peterson 2015 are suitable supplemental reference texts, though the latter is more polished and has useful discussion related to Peterson's prominence as a professional conlanger). In addition, we explore both conlanging and linguistic typology themselves as subjects, looking at the history and philosophy of conlanging, issues and methods in the field of linguistic typology, and the various ways conlangs, linguistic typology, and linguistics as a whole enter into public discourse.

Besides weekly homework, the final project for the course is a polished grammar of their conlang, describing every aspect of their conlang that would be found in any ordinary descriptive grammar. The students are given a fair amount of leeway in the purpose of their conlang (some wish to explore interesting linguistic properties they have heard of but do not understand, others have a particular fictional setting of their own design they want to enrich with a realistic conlang, while others are driven to consider linguistic hypotheticals, such as what kind of Slavic language might have resulted from Chinese-style historical change applied to Proto-Slavic). They make full use of that leeway in fascinating and creative ways.

About half of the scheduled class time is spent on discussion of assigned readings and prepared lectures on particular typological issues, with the students posing questions or introducing their own knowledge from the languages they are individually familiar with. The rest of the time is spent on what essentially amounts to a creative writing workshop. Each student presents regular updates to the entire class on the current state of their conlang (roughly every three weeks), including their reasoning and supporting research behind their decisions. These updates are required to be in the form of both a handout and a spoken description, so the students get regular practice at presenting with a handout to an audience, typically resulting in increasingly quality and clarity over the course of the semester. In addition, each update is followed by discussion from the entire class, who give the presenters feedback on their conlangs, often in the form of suggestions for natural languages or linguistic phenomena to look into for inspiration. I guide these discussions, pointing out when some design decision is typologically odd or interesting and inserting short relevant lectures on incidental topics that come up in discussion and which might not otherwise fit into the regular schedule of lectures.

This is a very popular course. I have even had students tell me that they became linguistics majors specifically so they could take this course, and it is often cited by my students

as their favorite course of the semester, the year, or even their entire college career. Many of the students come in to the course already having created multiple conlangs since childhood, but without explicit training in linguistics. They leave the course having their linguistic interests validated and their linguistic knowledge improved, whetting their appetite for more. There is clearly a strong demand for a course like this, and I think it is imperative that we linguists tap into that demand, so that we can better promote interest in the field. Fortunately, many of us have.

The following list of courses are those I know of in which conlangs and/or conlanging are central topics. I dare not presume to have constructed an exhaustive (or even representative) list of such courses, because many courses do not have publically accessible syllabi or descriptions, and because courses like this are often experimental and may have only be taught once or twice and then forgotten. I list here only those conlang courses I have managed to discover, either through scouring the internet or by word of mouth through the linguistics and/or conlang communities; URLs are given where public syllabi are available online:

- Douglas Bingham (San Diego State University), *Invented Languages: Klingon and Beyond*
- Alan Black and Lori Levin (Carnegie Mellon University), *ConLanging: Learning About Linguistics and Language Technologies Through Construction of Artificial Languages*, http://tts.speech.cs.cmu.edu/11-823/
- Ed Cormany (Cornell University), *How to Build a Language*
- Jeffrey Punske (Southern Illinois University), *Invented Languages and Fictional Worlds*
- Jessie Sams (Stephen F. Austin State University), *Invented Languages*
- Christine Schreyer (University of British Columbia Okanagan), *Introduction to Linguistic Anthropology*
- Sheri Wells-Jensen (Bowling Green University), *Extraterrestrial Linguistics*, http://personal.bgsu.edu/~swellsj/xenolinguistics/

Many of these courses share some fundamental overlap with the ideas described in my own courses, strongly suggesting that we may collectively be on the right track, since we have independently come to similar conclusions about how to incorporate conlangs into the classroom. Note, however, there are also some interesting differences in the approaches taken by these courses; for example, Black and Levin's course relies heavily on computational methods, including morphological parsing, while Cormany's course is a freshman writing seminar, which provides an important opportunity to bring insights from linguistics to bear on matters of prescriptivism in writing.

Grading student work in a course like this can be challenging, especially for linguists who are more used to evaluating the objective merits of a linguistic analysis rather than the subjective merits of a piece of creative writing. Important factors to take into consideration are the scope and complexity of the work (e.g. many carefully ordered phonological rules versus a few simple rules that do not interact) and the structure and clarity of the presented material. Whether or not the plausibility of the conlang should be evaluated depends on the nature of the course. In my typology course, I emphasize naturalness and typological expectations, but I do not penalize a student for making seemingly implausible choices in their conlang, if they can provide reasonable justification for their choices. I find that students respond well when questioned about the plausibility of their conlangs; they either shift their conlangs to conform

more towards known typological patterns or offer inventive, well-reasoned justifications for keeping their unusual design choices (anything from nonhuman biology to historical development from the complex interaction of more plausible intermediate changes).

6. CONCLUSION. Based on my experiences, I strongly recommend that other linguists consider ways they can incorporate (or further incorporate) conlangs into their own courses. Constructed data sets, whether built from a posteriori or a priori conlangs, can present linguistic phenomena in ways that allow students to focus on the essential details of interest, without being distracted — or worse, discouraged — by irrelevant complexity. Such data sets can be fine-tuned to the precise specifications needed for a particular moment in the course in ways that often cannot be done easily with naturally occurring data. But many linguists already know this, at least subconsciously, so the real innovation in using conlangs in the classroom is for the students to do the constructing.

One time assignments in which students create some small portion of a conlang are an ideal starting point for this sort of activity. By giving students the ability to create data, rather than simply analyze it, they engage with the material in completely different ways by exercising mental muscles they may not ordinarily get to use in their linguistics courses. Aside from the two examples I give in §4 of constructed sound changes and semantic changes in the context of a historical linguistics course, there are many other conceivable types of short conlang assignments. For example, in a phonology course, students could be tasked with constructing data sets that exhibit some particular property (e.g. having two different kinds of derivational opacity using only three ordinary phonological rules); these data sets may then be solved in class, either collectively or in small groups. In this sort of assignment, the way the data is approached is inverted: the students already know what the answer is but must create data that result in that answer. This inverted perspective can give students insight into the course material that might otherwise be missed, given them a more comprehensive understanding. Schreyer describes the outcomes of her experiences with student conlangs, noting that 'many students have commented that the language creation project is one of their favorite assignments and that it helps them solidify the concepts they have learned in class' (2013:2). Additionally, an important benefit of this kind of assignment is that students learn how to usefully present data to other people (a helpful skill for any budding linguist, for both their future research and their future teaching).

Extending student-driven conlanging to a project taking up an entire course is a much more demanding task, because it requires building an entire syllabus around the project. Students will typically not have all of the knowledge of linguistics needed to successfully build a suitable conlang, so this sort of project would normally need to be supported by some other content as a framework, such as linguistic typology, linguistic anthropology, language technology, or introductory linguistics. As with individual conlang assignments, a conlang project lasting an entire term has the benefits of allowing students to approach linguistic data from a different perspective, but on a larger scale.

In addition, by giving students such a huge commitment to their conlang, they develop a strong sense of responsibility for the shape of their conlang. Their personal investment in their conlang makes them more committed to the course material. Linguistics students are already prone to doing outside research and bringing that knowledge into the classroom, but my subjective view is that this effect is far stronger in my linguistic typology course. Rather than simply memorizing what an ergative-absolutive language is and applying that definition where appropriate, as they might in a traditional typology or morphology course, they actively research

the topic on their own accord, looking at multiple languages and multiple sources, so that they can implement ergativity in a realistic way that they can be proud of. It is, after all, their language, and people's ownership over their language (whether natural or constructed) gives them motivation to educate themselves that they ordinarily would not have.

A course like this is also a draw for students who are interested in conlangs for some reason or another. Prominent displays of conlangs in popular culture, such as the TV show *Game of Thrones*, reach millions of people, generating enough interest in these conlangs to justify the publication of reference books (such as Peterson 2014 for Dothraki and Okrand 1985/1992 and Okrand 1997 for Klingon), not to mention Nichols's (2000) translation of Shakespeare's *Hamlet* into Klingon. There is clearly a base of conlang fans in the world, and though such fans are likely to already be predisposed to studying linguistics, many of them may not have actually considered taking a linguistics course (countless children fascinated with dinosaurs never end up taking archaeology courses), perhaps because they did not realize linguistics was even a field of study. Having a course specifically focused on conlangs can bring such students into the field.

I have also found that the creative writing approach I use in my typology course appeals more strongly to certain students than traditional linguistics courses, which they find overly mathematical and dry. I have had many students report that they learned much more in this course than in any other linguistics course and gained a deeper appreciation of linguistics, simply because the nature of the course allowed them to approach the material in a way that better suited the way their thought processes worked. That is, they claim that the creative aspect connected with them and inspired them in ways that traditional linguistic analysis does not.

While this may be true, I actually believe that a large part of the success of this course with many students is that the creative process has an inherent tolerance for mistakes and methodology that traditional linguistics assignments do not. When a student solves a problem for a syntax class, an error in a tree is simply an error. But in an artistic assignment such as building a conlang, a seeming error could become something else: perhaps it is simply an idiomatic form, or perhaps it can expanded into a regular structural property. Or, it may just be erased from existence in the next iteration of the language. Crucially, the student is not penalized for the error, which gives them the confidence to experiment, and thus, to learn. Indeed, I have had more than one student explicitly report something like this very idea, and I think many more students would concur given the opportunity.

To summarize, conlangs are a valuable pedagogical tool, and linguists should be more proactive in embracing them in their courses, especially by adopting assignments in which the students can build their own languages. A properly constructed conlang is not just a work of art, but a demonstration of understanding how language works.

REFERENCES

Adams, Michael (ed.) 2011. *From Elvish to Klingon: Exploring invented languages*. Oxford: Oxford University Press.

Bergen, Benjamin K. 2001. Nativization processes in L1 Esperanto. *Journal of Child Language* 28.575–95.

Bowler, Tim. 2013. Why speaking English can make you poor when you retire. BBC News. Online. http://www.bbc.com/news/business-21518574. Accessed 16 January 2016.

Box Office Mojo. 1999/2016. Online. http://www.boxofficemojo.com/. Accessed 16 January 2016.

Corsetti, Renato. 1996. A mother tongue spoken mainly by fathers. *Language Problems and Language Planning* 20.263–73.

Eco, Umberto. 1993. *La ricerca della lingua perfetta nella cultura europea*. Rome: Laterza.

Gleitman, Lila, and Anna Papafragou. 2005. Language and thought. *The Cambridge handbook of thinking and reasoning*, ed. by Keith J. Holyoak & Robert G. Morrison, 663–2. Cambridge: Cambridge University Press.

Halle, Morris, and Samuel Jay Keyser. 1971. *English stress: Its form, its growth, and its role in verse*. New York: Harper & Row.

Higley, Sarah L. 2007. *Hildegard of Bingen's unknown language: An edition, translation, and discussion*. New York & Hampshire, England: Palgrave MacMillan.

Ito, Junko; Yoshihisa Kitagawa; and Armin Mester. 1993. Prosodic faithfulness and correspondence: Evidence from a Japanese argot. *Journal of East Asian Linguistics* 5.217–94.

Lewis, M. Paul; Gary F. Simons; and Charles D. Fennig, eds. 2015. Ethnologue: Languages of the World. 18th ed. Dallas, Texas: SIL International. Online version: http://www.ethnologue.com

Loria, Kevin. 2015. No one could see the color blue until modern times. *Business Insider*. Online. http://www.businessinsider.com/what-is-blue-and-how-do-we-see-color-2015-2. Accessed 16 January 2016.

Nicholas, Nick. 2000. *The Klingon Hamlet*. New York: Pocket Books.

Okrand, Marc. 1985/1992. *The Klingon dictionary*. New York: Pocket Books.

Okrand, Marc. 1997. *Klingon for the galactic traveler*. New York: Pocket Books.

Okrent, Arika. 2010. *In the land of invented languages: Adventures in linguistic creativity, madness, and genius*. New York: Spiegel & Grau.

Peterson, David J. 2014. *Living language Dothraki: A conversational language course based on the hit original HBO series Game of Thrones*. New York: Living Language.

Peterson, David J. 2015. *The art of language invention: From Horse-Lords to Dark Elves, the words behind world-building*. New York: Penguin Books.

Roget, Peter Mark. 1852. *Thesaurus of English words and phrases classified and arranged so as to facilitate the expression of ideas and assist in literary composition*. London: Longman, Green, & Co.

Rosenfelder, Mark. 2010. *The language construction kit*. Chicago: Yonagu Books.

Schreyer, Christine. 2013. The culture of conlanging: What can we learn about culture from created languages? *Fiat Lingua*. Online. http://fiatlingua.org/wp-content/uploads/2013/07/fl-000017-00.pdf. Accessed 16 January 2016.

Sutton-Spence, Rachel, and Donna Jo Napoli. 2009. *Humour in sign languages: The linguistic underpinnings*. Dublin: Trinity College Dublin.

Tolkien, J.R.R. 1981. *The letters of J.R.R. Tolkien*. Humphrey Carpenter & Christopher Tolkien, eds. Boston: Houghton Mifflin.

Versteegh, Kees. 1993. Esperanto as a first language: Language acquisition with a restricted input. *Linguistics* 31.539–55.

Watkins, Calvert. 2011. *The American Heritage Dictionary of Indo-European roots*. 3rd ed. Boston & New York: Houghton Mifflin Harcourt.

Wilkins, John. 1668. *Essay towards a Real Character and a Philosophical Language*. London: Royal Society of London.