

What Do Grammar and Technology Have in Common?¹

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Introduction

I raise a question in the title of this paper that, I hope, will raise interest among language teachers. Because technology is more exciting than grammar, my goal here is to consider grammar in conjunction with the more exciting topic—technology. My goal is to demonstrate that the two really do have a good deal in common. “What do grammar and technology have in common?” The answers to this question form a base for some important observations about language teaching and how we go about training people who want to be teachers. I suggest that there are at least three answers to this question: 1. Both grammar and technology are critical tools in language teaching but the tools should not overshadow the real goal of instruction. 2. Both can be rather frightening in the sense that there is a great deal of technical expertise that underlies understanding them and putting them to good use. And 3. what is going to constitute a frame for my remarks here, when it comes to language teaching, grammar and technology have developed in parallel. Reviewing history often gives us a clearer perspective on the here and now, and teachers should understand the history of their discipline. As far as language teaching is concerned, both grammar and technology—and the ends to which they are put— seem to re-invent themselves at accelerating intervals. So let’s have a look at how technology and grammar have grown up around each other, and then try to talk about grammar in a new light.

Prehistory and Grammar-Translation and Pipes: The Conduit Model

A history has to start somewhere, and for purposes here I begin at the “Big Bang” of language teaching. That is, the point at which we recognize in hindsight something like “methodology” in a field called something like “language teaching.” The words “in hindsight” are significant because what we now know as “grammar translation” was really named only after something else arose that could be contrasted with it. Before the birth of modern linguistics and modern language pedagogy, there was a “methodology” which saw the study of grammar in combination with vocabulary as the starting point for language learning. This is grammar-translation, and in it we see very clearly a tenet of modern linguistics that harkens back to Plato’s Theory of Forms and continues today as what we might call the “transmission model” or “conduit model” of language (Shannon and Weaver 1949, Reddy 1993).

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Figure 1: The conduit model of communication (from Whitaker 2001)

This is the idea that meaning exists somewhere “out there” even before we open our mouths to say anything, and that this meaning gets packaged one way in language A and another way in language B. Furthermore, we need only repackage language A into language B via a set of translation rules—the grammar. (See Figure 1.) What is the nature of this conduit? In its early form—circa the 17th to the 19th century—it was probably fairly rudimentary since it derived from the idea that Latin was a perfect language and all other languages were somehow second best. (Ancient Greek, of course, was the second perfect language and so these are the two that get lumped together now when we talk about “the classics.”) But at the end of the Middle Ages, Latin was in decline and vernacular languages were on the rise. With the rise of vernaculars, Latin was used in smaller and more ‘elite’ circles – among the nobility, among academics, and in ecclesiastical practice. This led, in turn, to a decreasing facility with the language. And the force of this decreasing facility created a downward spiral of pressure – it made Latin harder to use, so it was used less. Using it less made it harder to use, and even harder to acquire. As a result the need to learn Latin became less obvious and less pressing. In turn, the standards for Latin acquisition became less taxing – teaching omitted spontaneous oral practice, then prose composition, and so on, until translation from Latin texts into native languages was the main and then the only practice of Latin study. We might say in passing that this decline was also affected by what might be called ‘hyper-grammar’ in Germany. German linguistic studies came to focus on a rigorous analysis of grammar and syntax in texts, with elaborate schemes of classification. These studies were invaluable academically, since they led to the realization that Indo-European languages were all related in a family that fit into a sort of tree structure and gave rise to the comparative method in historical linguistics. But the impact of all this for language study was disastrous. Grammar-translation arose out of the need to produce students capable of detailed and sophisticated analyses of classical texts. (The parallels with the study of old Chinese texts and *kanbun* in Japanese should not be lost on anyone.) Communication had nothing to do with it.

While all this was going on in the universe of language pedagogy, technology had no moving parts. (I omit the invention of the printing press in 1436 from this discussion of technology for the moment.) We are referring to an age when there was no such thing as voice recording. “Recordings” of language were written records, and it is hard to overestimate the extent to which that fact gave shape to the pedagogy of

language learning.² The object of study—language— was the written word. The duplication and dissemination of learning materials (such as they were—dictionaries, grammar primers, and perhaps annotated translations) relied almost exclusively on the written word. If there was an oral component to language learning, it might have been (and I’m speculating here) the classroom in which exercises were practiced, discussed, etc. But in a world where the contrast between written and spoken language had yet to be “discovered,” and where the written form of language was the highest form of language, how could the focus of instruction be anything but its written form? Thus grammar-translation enjoyed a place in language learning for quite some time—until the late 19th century when we all know the pace of things began to pick up considerably.



Figure 2: Image of a gramophone ca. 1887
(www.charm.rhul.ac.uk/history/p20_4_1.html)

Structuralism and the Direct Method

At almost the same the time that Berliner was inventing his gramophone (in 1887), a scholar named Ferdinand de Saussure was giving lectures at the University of Geneva (1906-1911) on a new field called linguistics. Linguists will remember that Saussure’s scholarship caused a revolution in how we think about language with his recognition that language is a system of signs that can be divided into *langue* (the underlying rules of language) and *parole* (speech itself). It is also important to note that Saussure and his followers focused on *langue* (the abstract rules) to the exclusion of *parole* (what people actually say). But once speech had found its own recognition, the genie was out of the bottle. And the gramophone made it all real. Spoken language was on its way.

It is of some interest to note that Japanese *kokugo* grammar seems to have just missed any significant influence from structuralism by about 25 years. *Genbun-itchi* and the reform of written Japanese was well underway by the time Saussure was giving his lectures in Geneva. The linguistic analysis that Meiji scholars found in Europe and brought back from their travels was still very Latin-centric. And

² Linell (2005) has much to say about the impact that writing had and continues to have on linguistic theory.

maybe it was a better fit since the view of Latin as a perfect grammar has a tidy parallel in the view of Chinese as the immutable source for language standards (at least written standards) in Japan. In any event structuralist principles weren't applied to Japanese until American structuralists took on the task in the middle of the 20th century. This is the reason that *kokugo* grammar (to my mind at least) still bears the traces of western language (Latin) grammar in its preoccupation with notions such as person or *nin-shō* (*ichi-nin-shō*, *ni-nin-shō*), grammatical case (the *kaku* of *kaku-joshi* or *shukaku*, *taikaku*, *shakaku*,) etc. That might not have happened had structuralism and linguistics as a science been firmly in place in Europe when Japanese scholars arrived.

Not surprisingly, it was around the turn of the 20th century that the “direct method,” sometimes also called “natural method,” arose in language teaching circles. The direct method refrains from using the learners' native language and uses only the target language. It was established in Germany by a familiar name—Maximilian Berlitz—although it has been re-invented under other names. The direct method operates on the idea that second language learning has to be an imitation of first language learning, as this is the natural way humans learn any language - and so no grammar explanation is required. Grammar is to be acquired inductively. The direct method was clearly in response, in part at least, to the grammar translation method that had forced so much translation and so many grammar rules and vocabulary memorization into the minds of learners.



Figure 3: Reel-to-reel tape recorder/player (jasonbradford.com/tag/recommendations/)

Sound Recording and Audio-Lingual Method

It took about approximately 40 years for sound recording to develop into something more portable and easier to manipulate than the cumbersome gramophone. Reel-to-reel recording was made commercially

available in the 1940's and many of us remember using language materials that were available on either reel-to-reel tape or 78 RPM vinyl recordings. Coincidentally, at just about that time another new field of inquiry emerged in the social sciences: behavioral psychology or behaviorism. The contributions that B.F. Skinner made to learning theory are myriad, but underlying them is the central notion that all things that organisms do — including acting, thinking, feeling, talking and learning— can and should be regarded as behaviors. And there is no need to analyze them in terms of intangible entities such as “mind.” Learning, then, is a matter of conditioning. Reward desirable behavior (positive feedback); withhold approval for or penalize undesirable behavior (negative feedback). (A more contemporary offshoot of operant conditioning is called “behavioral modification.” Skinner has by no means been discredited.)

In language learning, behaviorism gave rise to what we know as the “Audio-lingual Method.” The Audio-lingual Method combined the concept of teaching “linguistic patterns” with the behaviorist notion of “habit-formation.” Where the Direct Method focused more on vocabulary, the Audio-lingual Method was unapologetically focused on grammar, maintaining that it should be taught by induction rather than deductive explanation. The tie to behaviorism was that correct use of a trait would receive positive feedback while incorrect use of that trait would receive negative feedback. There was, in fact, a tendency to manipulate language rules and disregard content in the name of science. Thus, grammar was very much at the core of teaching and learning. And American structuralists (such as Bernard Bloch and Eleanor Jorden in the field of Japanese) hitched their wagon firmly to the star of Behaviorism. The field of linguistics graduated to the category of “science” with the associated precept that only observable phenomena were the object of study. The grammars that came out of this movement (Jorden’s among them) are unsurpassed, even today. Since this method was one of the first to have its roots firmly grounded in linguistic and psychological theory, that apparently added to its credibility and probably had some influence in the popularity it enjoyed. It viewed learning as internalization (via habit-formation) of a body of rules (a grammar) that had been isolated by scientific method as established by Saussure and promulgated by those who followed. And what better tool could habit-formation wish for than the portable sound recorder?



Figure 4: Portable tape recorder/player
(www.carouselhouse.com/slim_line.php)

Inadequacies of early structuralism and behaviorism

Behavioral psychology and structuralist linguistics were inadequate to explain some things that were perceived to be central to their respective disciplines. In short, behavioral psychology couldn't explain language acquisition, and (American) structuralism never got past the level of morpho-phonology or observable phenomena. Stepping in to fill the void, Chomsky (1959) showed the gross inadequacies of behaviorism and established a new goal for the field of linguistics: plumbing the depths of mental structures. The study of linguistics became the study of psychology and language acquisition.

Through these changes, linguistics held on to certain underlying structuralist assumptions about the nature of language. One of these is a view of language as an independent entity with an inner logic of its own. Structuralism and its offshoots enshrine this by eliminating any and all aspects of language that are not amenable to the analytical techniques that they employ from consideration, lumping such aspects together as *parole* or 'performance.' The abstractions that get patched together in the so-called 'grammar' acquire their own independent existence, are in some sense real features of real languages as spoken by real people" (Love 2003, 71). This process is known as reification—treating a relatively abstract construct as if it were a single, bounded, undifferentiated, fixed and unchanging thing, the essential nature of which can be taken for granted. A concept like grammar represents the totality of language in an "intellectually graspable but essentially immutable form" (Love 2003, 73). This is the cornerstone of transformational-generative (or Chomskian) linguistics, and as such, it formed the basis of linguistics and language teaching methodology for almost 40 years.



Figure 6: Sony Walkman portable tape player (commons.wikimedia.org/wiki/File:Walkman.jpg)

2. Communicative Language Teaching

In the midst of the focus on acquisition, the assumption continued to hold sway that second-language acquisition should be viewed much as first-language acquisition. But what changed was that

communicative approaches to language teaching and learning arose in response to the perceived need to attend to the use of language in the world. Communicative approaches took their procedures from explanations of language that attempted to reunite form and function. Functionalism appeared in language pedagogy in a number of guises.

The Notional Functional Syllabus, as its name indicates, led the way in communicative language teaching by its attention to "functions" as the organizing elements of language and language learning. The Notional Functional Syllabus focused strongly and exclusively on the pragmatic purposes to which users put language. On the other hand, functionalism was neither a method nor an approach to language pedagogy since it did not prescribe how to teach a second language. What it did was to name communicative tasks that second language learners should focus on. A Notional Functional Syllabus textbook might be organized in a sequence of functional topics such as:

- * Introductions, Greetings, Good-byes;
- * Invitations, Apologies;
- * Gratitude, Compliments;
- * Requests, Commands, Warnings, Directions;
- * Asking/giving Permission;
- * Advice, Intentions;
- * Expressing opinions

Language pedagogy was not long in filling the methodological void. The Notional Functional Syllabus was a precursor to what is now known as "communicative language teaching," the basic features of which are:

1. An emphasis on learning to communicate through interaction in the target language.
2. The introduction of authentic material in the classroom.
3. The provision of opportunities for learners to focus not only on language, but also on the learning process itself.
4. An enhancement of the learner's own personal experience as important contributing elements to classroom learning.
5. An attempt to link classroom language learning with language activation outside the classroom (Brown 2000).

Certain other theoretical constructs that derive from this view of language have tacitly entered the discourse on language teaching as not only concrete but also mechanical entities: notable among these are some concepts introduced by Stephen Krashen: the Monitor, the Affective Filter, input/output, the switch, the device, the distinction between Acquisition and Learning (Krashen 1981, 1982, 1985). These joined competence and performance and the universal grammar as if they were "discoveries" — they had been there all along, we just didn't have the theoretical tools to find or see them.

There is a great deal of room for interpretation here as far as the place of grammar is concerned. (See papers in Doughty and Williams 1998.) Looked at one way, communicative language teaching still

has much in common with its forbears. Language learning is still a process by which a learner internalizes the formal forms of language— grammar—whether those forms are discovered, transmitted from others, or experienced in interaction with others. There continues to be a focus on internalization—a focus that reflects far-reaching assumptions about the nature of the learner, of the world, and of their relationship. Linguistic knowledge of all kinds is largely cerebral, and its internalization is construed as an unproblematic process of absorbing the given, as a matter of transmission and assimilation (Lave & Wenger 1991, 47). Grammar is the dependent variable and features of context are the independent variables. What is more, the role of the receiver is left to chance; the message is the most important part of the model. It became hard to think about the object of study in any other terms, and yet some central problems of language learning had yet to be addressed.

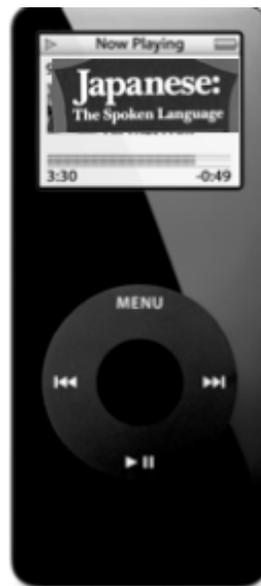


Figure 7: PDA with language learning software

The WWW and Integrated Linguistics

More and more models of language and language learning draw on developments in cognitive psychology and cognitive anthropology, and these in turn are tied to developments in technology. In this view, language learning is seen as increasing participation in a community of practice, a process that concerns the whole person performing in the world. This idea derives largely from the field of Cultural Studies, particularly the notion that language is performative. To contrast the old and the new, in conventional linguistics, language is understood as a system of signs and meanings that exists as a structure outside of actual practice—embodied in the dictionary or grammar. The function of language is to express propositions whose truth value can be monitored and whose well-formedness can be objectively judged apart from who is saying it, where she is saying it, to whom she is saying it, why she is saying it, etc.

But language is not only propositional, it is also proscriptive, or, we might say, performative. Speakers and listeners are active participants in acts of meaning-making in response to particular

constellations of events—contexts. Tomasello's (1999, 2003) work in particular focuses on the intention-reading aspects of language, as a parallel to the patterned, formal aspects. Language, in this model, is an artifact of culture; it is one system of conventions among many, and is by nature an ongoing process of common agreement to produce social reality. Linguistic conventions that have been established by historical accident may come to seem natural and static over time, and linguistics enshrines this. But every instantiation of language in context reestablishes a constellation of conventional associations and makes the relationship between language and the world new and real again. One offshoot of this is that in its very architecture language anticipates the social relations that it permits. Earlier Erving Goffman (1959) put this another way in his observations of everyday behavior (including language), is mostly an act. Every instance of linguistic behavior is laden with the performance of cultural meaning. Rather than existing a priori outside of human intervention, language is "an activity engaged in by people who share a socially and culturally constructed world" (Lave & Wenger 1991: 49). Learning language entails learning a new, relational view of the person: learning language is not merely a condition for membership in another culture, but is itself an evolving form of membership in that culture. (Lave & Wenger 1991: 53).

As a result, in addition to asking what kind of cognitive processes and conceptual structures are involved in language or communication, we ask what kinds of social engagements provide the proper context for learning to take place. Learners are not gaining a discrete body of abstract knowledge, which they will then transport and reapply in later contexts. Instead, they are acquiring the skill to perform by engaging in processes—in the classroom under attenuated conditions guided/provided by the teacher. "There is no necessary implication that a learner acquires mental representations that remain fixed thereafter, nor that the 'lesson' taught consists itself in a set of abstract representations... [V]erbal meaning [is] the product of speakers' interpretive activities, and not merely the 'content' of linguistic forms." (Hanks 1996,14-15)

Structure—grammar— does not disappear from the radar screen. But it is shifted from the level of mental representation to that of participation frames. And this shift is accompanied by a more subtle change from seeing grammar as a set of *invariant* structures to seeing grammar as a set of guidelines for (social/communicative) action—guidelines that are flexible and adaptive. Another way of phrasing this is to say that structure is more the outcome of action rather than its invariant precondition. "Preexisting structures may vaguely determine thought, learning, or action, but only in an underspecified, highly schematic way. And the structures may be significantly reconfigured in the local context of action" (Hanks 1996, 17). An example from Japanese might help to make this clear. A Japanese learner who understands that the grammar of *keigo* is in some sense an artifact of Japanese social structure will not get very far linguistically if s/he doesn't at the same time understand and realize that social structures are fluid and under constant (re)negotiation. It is apprehending the culture-specific terms of that negotiation that bring the learner to higher proficiency in linguistic performance, not the ability to articulate finer and finer distinctions in the rules of *keigo* themselves.

There are many parallels between this integrated view of language and technology. In fact there are many arguments to be made for the case that we enjoy greater integration of technology into our lives than ever before. Social networks on the World Wide Web are changing the way we think about friends; witness the fact that “friend” itself has become a verb—a linguistic change triggered by technology. Our students come to us tuned in to technology as a way to communicate and to inform. It is their way of life to multi-task and to collaborate, whether they do that face-to-face or from afar, synchronously or asynchronously. Technology is second-nature to young learners. They text, they IM, they use cell phones, blogs, wikis and podcasts (sometimes in multiple modalities at once!).

It isn't my purpose here to try to predict which technologies will prove to be the most useful in language teaching or learning. But I would like to offer two observations here that bear on our relationship as language teachers with technology. One is that technology is not culture-neutral. Technology itself is a cultural tool. So email, instant messaging, and forms of synchronous chat are deeply affected by the culture of their users (Thorne 2003). The implications of this for teaching are as serious as they are for any kind of cultural encounter for which we prepare our students. The second (related) observation is that, all these advances in technology (if that is indeed what they are) notwithstanding, the fundamental nature of language has not changed. It's still hard to learn a foreign language and, the claims of Rosetta Stone to the contrary; there is no magic pill that makes it any easier now than it was in 1910 to learn a new language.

Grammar as a Basis for Action

What are the implications of this overview tell us about the relationship of grammar and technology for language teaching and learning? Let me suggest some points for further consideration:

1. In trying to connect grammar with the real world, what often strikes the learner is the interplay between figure (rule) and ground (context) and our own human capacity to shift between the two, our ability to find structure among the many elements of our experience. How do I know whether *A, takaku nai desu ka* is a question that assumes the object is expensive, or is checking to verify that it is not? Language presents us with multi-layered problems of interpretation—and application. The structures may be simple, but the contexts in which they are embedded make the formal features hard to sort out.
2. There is little controversy in saying that grammar is significant to classroom practice, to SLA methodology, and to linguistic theory. But grammar is a slippery entity tending to materialize in unexpected places amid a great many distractions that divert our attention elsewhere. I suggest that grammar—pedagogical grammar, at least—is best viewed as a constellation of rules of thumb that initiate linguistic action. This acknowledges that grammar can be relevant and useful at multiple junctures in the learning process. It also acknowledges that learners' apprehension of grammar is in a continual state of restructuring as their experience with the linguistic landscape of Japan deepens.
3. As for language learners who make the most practical use of grammar, it is the rare language learner who denies the importance of grammar to the task of language learning. Yet in the face of so much professional discord over the importance or unimportance of grammar to language learning, it is the rare student of

language who can navigate the shoals of language-learning with self-assurance when it comes to grammar. When we ask learners to tell us what grammar is, the response is usually something about rules. Grammar rules help learners to construct sentences, and this in turn means they can communicate (either spoken or written). Presumably the learner in general could just communicate using words, but without a context or shared knowledge those words would almost surely fail to communicate anything. So grammar acts as a tool to create meaning. But grammar alone fails to create meaning; other elements are also necessary. We need to ask ourselves whether our learners understand the importance of grammar or whether they tend to focus on the form regardless of the meaning it conveys?

In the field of language teaching and teacher training, it is too often the case that grammar and technology part ways. Technology is innovative and cool while grammar has a reputation for being dry and dreary. But we should not be led into a false sense of security by the notion that when we spend a lot of time learning how to use some new kind of high tech toy we have improved our teaching. There are still many instances where technology doesn't bring anything to the party—it doesn't make sense in terms of pedagogy. If you want to teach your students how to get into and out of the teacher's office without sounding and looking and acting like an American, there really is not any high tech tool that can replace the physical practice of knocking at the door, making the appropriate eye contact, and saying the expected thing while also showing the right amount of deference and restraint at every step along the way.

Similarly, we need new approaches to grammar that convey to learners that grammar is actually an excellent barometer of their accommodation to the conventions of the target culture. This means that knowledge of pedagogical grammar is still an indispensable tool for the Japanese language teacher. Quite rightly a pedagogical rule gives learners a guideline as what to use, but we also need to view rules at different levels according to the competence of the learner and to let learners know that they will constantly refine their rules as they learn more about the language. What this integrated view suggests is that grammar rules are conventions according to which lexical items, phrases and clauses are combined. At a slightly more sophisticated level grammar tells us what the roles and relations are among these elements in the communication of meaning. But it is also the case that conventions evolve through custom, and native speakers play with grammar. There is no debate as to whether or not it is necessary to teach grammar - formal instruction is necessary. As someone once said, learners need to use grammar to communicate when words are not enough. Perhaps they could rely on their strategic competence but this doesn't move them forward in their learning. It has also been said that in Communicative Language Teaching success comes too soon for learners; the emphasis on communication means that learners use highly developed strategic competence to achieve results. As a result learners begin to think that formal input is secondary and unnecessary, as they have already communicated their message—regardless of whether they have conveyed that message in a culturally acceptable way or not. Formal instruction provides learners with new forms to think about, it reminds them that they have not mastered everything and it creates an environment for further language development. When teachers learn how to focus on form and consciousness raising, they

are better able to facilitate accuracy—at higher and higher levels. They learn how to create a learning environment where the learner notices new language and exploits it in genuine communication activities.

Finally we also need to remind ourselves why learners come to our classes—they come to us because we are (ostensibly) experts who know how to provide opportunities to get it right. The principal goal of teaching is to realize mutual goals - allow restructuring, focus on accuracy and develop fluency. Anyone can learn some language online or via technologically sophisticated tools, but with formal language instruction we give learners the opportunity to overuse a form in order to get it right in the context. They may have noticed the language item outside the classroom but we create the environment—in the classroom or on the web—to master it. Formal instruction is not only necessary, it is what our learners pay for.

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