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Morphosyntactic Processing in SLA: An Interview with Alison Gabriele

Photo 7.1 Alison Gabriele

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Section I: Your Life Story

Thank you so much Prof. Gabriele for kindly agreeing to do this interview on second language acquisition (SLA). As an entry question, I would like you to briefly introduce yourself, providing us with a panoramic view of your life as well as highlighting your most important achievements (academic and non-academic). Please tell us a short story of your life (both personal and professional) from childhood to the present moment, highlighting turning points.

I grew up in Queens, a borough of New York City. My great-grandparents and grandparents came to the United States from Ireland, Scotland, and Southern Italy. My relatives assimilated quickly into the culture of the US, as many at that time did, so I didn't have the opportunity to learn a language other than English from my family, but I was exposed to bits of different cultures. I started to study Spanish in junior high school, which I loved, although we were mostly reciting verb endings and completing grammar exercises. I continued to study Spanish all through high school and college, ultimately leaving the US for the first time when I was 21 to study abroad in Salamanca, Spain. I had been an English literature and rhetoric major in college, but my experience in Spain led me to want to pursue study of linguistics and second language acquisition. I started graduate school right after completing my BA degree, going on to get a PhD in Linguistics at the Graduate Center of the City University of New York in 2005. I got a job at the University of Kansas after graduation, and I have been there ever since, earning tenure in 2011, and being promoted to Professor in 2018. In this time, I have directed or codirected 14 PhD dissertations, advising many fantastic graduate students who are now pursuing their own careers. Along the way, I gave birth to my daughter Eliza in 2013, and lost my husband completely unexpectedly due to a brain aneurysm in 2016. That traumatic event was a huge turning point in my life but being forced to grapple with that challenge has taught me a lot about the value of having supportive friends, family, and colleagues and the value of doing work that you care about.

You have numerous research and teaching grants as well as memberships and awards. Could you tell us which one was the most outstanding? One of your long-lasting awards has been Membership of Phi Beta Kappa Honor

Society since 1997. Could you briefly talk about the nature of this award and the membership criteria?

While I was at the CUNY Graduate Center as a graduate student, I worked as a research assistant for Drs. Gita Martohardjono and Ricardo Otheguy. They were both amazing mentors. As one part of the job, I helped them to prepare large grant applications, and I learned an enormous amount about the process, everything from how to translate an idea to a testable research hypothesis to how to develop a research budget. That experience was critical, and I was able to attain dissertation funding from the National Science Foundation for my own project. That grant really helped me to start my own research program, allowing me to develop experiments in multiple languages and conduct data collection at multiple sites. Since then, as a professor at the University of Kansas, I've been able to work on two other grant projects funded by the NSF with my colleague Dr Robert Fiorentino, who is a neurolinguist. These projects have been great opportunities for us to do interdisciplinary work, training graduate students in both cognitive neuroscience and second language acquisition. I think all of these research experiences have been extremely valuable to me at different points in my career. In terms of teaching awards, I was really happy to win the Byron A. Alexander award for graduate student mentoring because the nominations for this award come directly from the students.

I was inducted into Phi Beta Kappa as an undergraduate, and I believe at the time, at my university, it was based only on our Grade Point Averages, but I believe that eligibility varies based on the particular chapter. I place a lot of value on a liberal arts education and a dedication to intellectual curiosity and lifelong learning, values that are at the core of Phi Beta Kappa's mission. Given our current political climate, I think Phi Beta Kappa plays a really important role in communicating these values.

Section II: Your Contributions to SLA

Could you tell us how and why you got involved in SLA in the first place? What has been your main research focus in SLA so far and why have you adopted this focus? Has this focus changed over the years? What else needs to be done in this area in the future?

I really discovered my interest in second language acquisition while I was engaged in the process of learning a second language in Spain on a study abroad experience during my senior year of college. I found that my years of studying Spanish grammar were not serving me well in a natural context. At the dinner table, my own Spanish felt stilted and awkward. My host mother corrected all of my grammatical mistakes. It was really fascinating to me that I was making some of the same mistakes that my host mother's grandchild was making, and I started to think a lot about the similarities and differences between first and second language acquisition and what was behind the errors that I was making. From a broader perspective, I think that is still what I am trying to understand. I was trained as a linguist, and a lot of my research focus has been on understanding the impact of linguistic factors, such as the role of transfer in second language acquisition. I also think it is really important to understand the specific linguistic properties of the L2 and how they impact acquisition. For example, acquiring tense in English as a second language may differ from the acquisition of Japanese as a second language because of the way in which tense is encoded in the grammar and realized phonologically. There are important differences across languages in how lexical and grammatical gender is realized as well. In any linguistic domain, we learn an enormous amount from doing crosslinguistic research and examining as many languages as possible. This is definitely an area in which SLA research can expand.

*A couple of your latest coauthored works focus on 'island violations' and 'island sensitivity' and individual differences (*e.g., *those published in* Glossa *and* Second Language Research (SLR)). *Could you please elaborate on these terms as well as whether your research indicates these are any different in L1 and L2 and across learners?*

'Islands' refer to positions in the grammar from which wh- words such as *what* cannot be extracted. For example, complex noun phrases such as 'the claim that Lily saw a unicorn' have been argued to be islands for extraction because questions such as 'What did Susana believe [the claim that Lily saw __]?' receive low ratings on grammaticality judgment tasks. The ungrammatical sentences are referred to as island violations. There is a debate in the syntax and psycholinguistics literature as to whether island violations are rejected because they are ruled out by the syntactic

constraints of the grammar or because they are simply too complex to process. Jon Sprouse and his colleagues have suggested that if island violations are rejected simply due to processing complexity, then you would predict that individuals with higher processing resources would be expected to accept them (e.g., Sprouse et al., 2012a, 2012b). In contrast, a grammatical account of islands does not predict this relationship; island violations should just be ruled out regardless of processing abilities. We have tested these predictions in several studies with both native speakers (Pham et al., 2020) and second language learners. I think it is a really interesting question for L2 learners because we know that processing is more difficult in a second language, and it has been proposed that L2 learners rely on abstract syntactic constraints less, so it is particularly interesting to see if there is such a relationship between acceptance of island violations and processing abilities. While our results are complex, and do not suggest that L2 learners and native speakers are identical, the most important result is that, across studies, L2 learners are indeed sensitive to island violations, showing patterns similar to native speakers, and sensitivity to island violations in L2 learners is not modulated by individual differences in processing abilities (e.g., Aldosari et al., 2022; Aldwayan et al., 2010; Covey et al., in press; Johnson et al., 2016). These results are more in line with grammatical accounts of islands and suggest that L2 grammars are constrained by syntax.

One of your recent publications in SLR *is titled 'Microvariation and transfer in L2 and L3 acquisition', which is a commentary on Marit* Westergaard's *(2021) article 'Microvariation in multilingual situations: The importance of property by property acquisition' in* SLR. *Could you briefly talk about the original article, and why you decided to write a response to that? What are the key themes and arguments in your commentary?*

Westergaard's article presents a proposal for language acquisition broadly, arguing that first language (L1), second language (L2), and third language (L3) acquisition are fundamentally similar processes. Much of the debate in the current literature centers on the L3 component of the proposal, which argues that transfer proceeds on a property-by-property basis, with the most structurally similar language selected in each case. Thus, it is predicted that it should be possible to see evidence of transfer from both the L1 and L2 in L3 acquisition, as opposed to transfer

exclusively from a single language. In contrast, theories of 'wholesale transfer' such as Jason Rothman and colleagues' Typological Proximity Model propose that the most typologically related language (L1 or L2) is selected for transfer at the initial state of L2 acquisition (e.g., Rothman, 2011). I was invited to write a commentary (Gabriele, 2021) because I had previously conducted an L3 study with my student Valeria Kulundary. Kulundary and Gabriele (2012) looked at the acquisition of coordinate clauses and relative clauses in L3 English by native speakers of Tuvan who had acquired Russian as a second language. Our results were complex because there was evidence of transfer from L2 Russian to L3 English in the acquisition of coordinate clauses, but there was not clear evidence of transfer with respect to the relative clauses. Thus, the results can potentially be accounted for by a model such as Westergaard's, which considers transfer on a property-by-property basis and considers more fine-grained linguistic differences between languages. In the commentary, I discussed the fact that, despite these clear strengths, the predictive power of the model can be developed further as it is currently challenging to make testable predictions in advance with respect to which precise combinations of L1/L2/L3s are predicted to be easier or more difficult to acquire.

One recent line of your research has concentrated on processing various aspects of language like referential ambiguity, referential failure, and referential dependencies as well as the processing of number and gender agreement and morphosyntactic development/processing in various languages like Arabic, English, Spanish, Hindi, and Japanese. Could you briefly share with us the general conclusion of relevant research?

It is really hard to unite all of these very different studies under one general conclusion but, interestingly, our work on gender and number agreement (e.g., Alemán-Bañón et al., 2012, 2014, 2018; Covey et al., 2018; Gabriele et al., 2013, 2021; Lopez-Prego & Gabriele, 2014) did actually lead us on a path to the newer and currently in-progress research on referential dependencies (e.g., Fiorentino et al., 2018; Feroce et al., 2020). Almost all of the work that you mentioned was done in collaboration with Robert Fiorentino and our students. In a nutshell, we have argued that L2 learners can ultimately acquire syntactic features such as gender despite the fact that grammatical gender agreement is not instantiated in English, the native language of many of our participant groups. Nevertheless, there is

variability in the L2 learners, and in our studies of novice learners variability in the processing of number and gender agreement was best explained by individual differences in language abilities and cognitive abilities such as working memory (Gabriele et al., 2021). We began to be interested in whether or not variability in second language processing was similar or different to variability in native language sentence processing. However, we wanted to look at a domain in which there was strong evidence of variability even in native speakers, and this led us to begin to look at referential dependencies. Linking a pronoun to an antecedent in the discourse is complex because antecedent choice is impacted by many different factors. There is evidence that individual differences in language and cognitive abilities impact native speakers' sensitivity to certain cues that impact antecedent choice. We decided to conduct a study that examined referential processing in both the L1 and the L2 and examine the two languages in the same individuals, an approach that to our knowledge has not been taken in many studies thus far. Our goal is to examine to what extent variability in native language processing predicts success in processing the second language. This work is currently in progress.

A body of your research has focused on 'event-related potentials' for investigating morphosyntactic processing. Could you elaborate on what these potentials are? What are the alternative methods for investigating the constructs you have studied using event-related potentials and why did you choose the latter in your studies?

Yes, as I mentioned above, all of this work has been a collaborative effort with my colleague Robert Fiorentino, who specializes in neurolinguistics. Event-related potentials (ERPs) provide a measure for looking at how the brain processes language in real time. ERPs are voltage changes that can be recorded at the scalp and time-locked to specific events of interest, such as the presentation of a word. ERPs provide very high temporal resolution, so they are ideal for tracking the temporal dynamics of sentence processing. Importantly, different ERP components are modulated by different aspects of linguistic processing, which allows us to examine the qualitative nature of both L1 and L2 processing. As just one example, we have conducted several studies of gender and agreement using ERPs (e.g., Alemán-Bañón et al., 2014, 2018; Gabriele et al., 2013, 2021). These studies rely on a violation paradigm in which we are measuring whether native speakers and learners are sensitive to agreement violations. This question could alternatively be examined by using a

grammaticality judgment task to examine whether the violation is detected or with self-paced reading to examine whether learners exhibit longer reading times when processing ungrammatical agreement dependencies as opposed to grammatical ones. However, what ERPs provide is an index of the qualitative nature of how learners are processing the violation. Native speakers canonically elicit a response called the P600 when presented with agreement violations, a component which indexes syntactic reanalysis or repair. In some studies, L2 learners have yielded a different component, the N400, which indexes the strength of lexical associations. Thus, as opposed to the other methods I mentioned, using ERPs allows us to examine whether processing in L2 learners is qualitatively similar or different to native speakers. Our results have suggested that qualitatively native-like processing is possible for L2 learners.

Another major line of your inquiry has been studying the acquisition of L3, like in 'Examining the role of syntactic development in the L2 on the acquisition of an L3'. How is L3 acquisition different from L2, and how are L3 and L2 acquisition different from L1 in general, and in the areas you have investigated?

As I discussed above, I conducted one L3 study with my student Valeria Kulundary. We were particularly interested in language transfer so the major difference to consider is that there are multiple possible sources of transfer in L3 acquisition as both the properties of the L1 and the L2 can potentially impact L3 development. A point of debate in the current literature centers around whether there is 'wholesale' transfer of a single language at the initial stage of L3 acquisition or whether transfer occurs on a property-by-property basis with both the L1 and the L2 potentially impacting L3 development. My student Henry Pratt is currently conducting a study on counterfactual conditional sentences (e.g., *If I had more money, then I would buy a house*) in L3 Brazilian Portuguese by speakers of English and Spanish (Pratt, 2021). In the *if*-clause, which expresses a hypothetical condition, the verb in Brazilian Portuguese is in the (past) subjunctive, which is a property that is similar in Spanish. In the *then*-clause, which expresses a result dependent on the truth conditions of the *if*-clause, the verb is in the conditional. Brazilian Portuguese allows synthetic conditionals, which is similar to Spanish, as well as analytic conditionals, which is similar to English. The goal is to try to tease apart whether

L3 learners transfer only from Spanish, the most typologically related language, or whether there is any evidence of transfer from English as well. L3 studies are extremely complicated to conduct due to the complexity of considering how each language can impact development and the difficulty in controlling the background of the participants. For example, we need to test at least one group of L3 learners of Brazilian Portuguese who have unambiguously acquired the morphological properties of counterfactual conditional sentences in L2 Spanish, which is challenging because we are targeting a complex structure. It also means we need to test participants on the linguistic properties in all three languages so that we can be certain of what the representation is for each property in each language.

One of your earliest publications in Studies in Second Language Acquisition *in 2009 was on transfer and transition in the acquisition of aspect. Could you talk about this study clarifying the distinction between transition and transfer as well as the major findings of the study? Are those observations still valid today, and do you expect further studies to be conducted on the topic?*

That study was a bidirectional study of English-speaking learners of Japanese and Japanese-speaking learners of English. I focused on the progressive in L2 English and the imperfective marker *te-iru* in L2 Japanese. There are interesting crosslinguistic differences in these forms. The English present progressive is compatible with achievement verbs such as *arrive* (*The plane is arriving at the airport*), but in Japanese the combination of an achievement verb and the imperfective marker *te-iru* results in a perfective interpretation (*The plane has arrived*). The acquisition of these aspectual markers thus presented interesting test cases for transfer because for both groups of learners (L2 English and L2 Japanese) they needed to acquire the semantics of the aspectual form in the L2 and rule out or 'preempt' interpretations available in the L1 but not the L2. The results showed that preemption was more difficult overall and, additionally, that the L2 learners of English had more difficulty than the L2 learners of Japanese. I argued that the L2 English learners potentially had a more difficult task because of the semantic complexity of progressive achievements and the transparency of the input cues potentially available to the learner. I believe the observations are still valid today because it is clear that L2 acquisition is impacted both by the properties of the learner's native language and by the complexity of the target form in the L2 as

well. As we do more and more crosslinguistic research, examining similar properties in different languages, this point becomes clearer, and I think there is always room for work on a broader array of languages.

What do you think is your most significant contribution to the field of SLA? Of the works you have published, which one do you think has been the most influential in this regard? What do you wish you could have done more research on or written more about, if you had had more time and the chance to do so?

I think the Gabriele (2009) study on aspect is interesting in terms of what it can tell us about transfer, and it shows the clear advantage of using the bidirectional design that I explained above. I think our L2 processing studies have shown that adult L2 learners, similar to native speakers, can indeed deploy their knowledge of abstract syntax during online processing and that learners' ability to do so is not determined by whether or not the first language and the second language are similar with respect to the syntactic property under investigation. In addition, in our recent work we have also systematically revealed a number of individual differences that explain some of the variability observed in L2 processing (e.g., Covey et al. in press; Johnson et al., 2016; Gabriele et al., 2017, 2021). Our work has revealed a significant role for both working memory and attentional control in both native speakers and L2 learners, suggesting that the individual differences that modulate processing may be similar in the two populations. In general, my research program has tried to shed light on both the possibilities and the limitations of adult second language acquisition, furthering our understanding of the cognitive process of language acquisition and how it differs in adulthood. If I had more time, I would like to be able to do a collaborative study that compares across child L1, child L2, and adult L2 acquisition to systematically examine development across these populations in a specific linguistic domain.

Section III: Current and Future Trends in SLA

In the rest of the interview, I will focus on current issues and debates in SLA. To begin with, how do you define 'second language acquisition', and how significant are the terms 'second' and 'acquisition' as key words used to tag the field?

For me, the study of 'second language acquisition' is the investigation of the complex processes and mechanisms underlying the acquisition of a second language. Both terms seem important to me but, of course, we need to acknowledge that many studies published in the 'second language acquisition' literature are studies of L3, L4, Ln learners and heritage language learners as well.

What is for you the single most important factor affecting the acquisition of a second language? What are some of the other less important factors, and why do you think the factor you named as the answer to the first part of the question is of paramount importance?

I think one way to identify the most important factor affecting the acquisition of a second language is to see what is held constant across the many different theories and approaches to L2 acquisition. Along these lines, I really like the approach taken in VanPatten et al.'s (2020) *Theories in Second Language Acquisition* textbook in which they ask researchers working within different theoretical frameworks to discuss several key observations in L2 acquisition. The first observation is that input is essential to L2 acquisition, and I guess I would highlight this factor as being of paramount importance because the process of L2 acquisition simply can't proceed without meaningful input. The role of input and input processing is conceived somewhat differently in, for example, generative approaches and usage-based approaches, but it needs to be an essential component of any L2 theory. I am hesitant to talk about 'less important' factors without referring to specific empirical findings that establish them as less important. But I have found Richard Sparks and colleagues' work informative in this respect; this body of work suggests that higher levels of L2 anxiety or lower levels of L2 motivation may be the consequence of lower levels of performance in both the L1 and the L2 as opposed to the cause (Ganschow & Sparks, 1996; Ganschow et al., 1994; Sparks et al., 1997, 2004).

What role do you think individual attributes like age, motivation, and aptitude, among others, play in acquiring an L2? Which one do you think has the highest contribution and why?

I think a lot of the research on age of acquisition has showed us that while 'earlier is better', the relationship between age of acquisition and performance is not causal. As just one example in the sound domain,

Flege and MacKay (2004) showed that age of acquisition was strongly related to number of years of education in the immersion environment and that years of schooling actually accounted for a much larger amount of the variability in performance than age of acquisition. Flege's body of research has also established the importance of language use. Early learners who use the L1 less perform more like natives than early learners who use the L1 more. These studies show us how important it is to consider a range of factors, and not just any one factor such as age of acquisition which is likely to be related to a host of other factors related to input, language use, schooling, and so on. Along the same lines, I don't think it is easy to just speak to the importance of any one factor without mentioning how it potentially interacts with others. I mentioned Richard Sparks' work on L2 motivation above and how he has shown that it may be a consequence of performance in the L1 and L2 as opposed to a cause. With respect to aptitude, I think it is really important to also consider the proficiency level of the learner as well as the task that the learner is completing. Our own work has shown a role for language aptitude, but only when related to performance on more metalinguistic tasks (Gabriele et al., 2021). Our learners in this study were at a novice or low-proficiency level. Other studies, such as Abrahamsson and Hyltenstam (2008), which focused on near-native L2 learners, showed that aptitude didn't account for variability in performance on a grammaticality judgment task, at least for adult learners. Thus, I think it is important that we not consider these factors in isolation and that we evaluate their contribution with appropriate statistical modeling.

How do you compare the role of input, interaction, feedback, and output in second language acquisition? Which one do you think contributes more to L2 acquisition and why?

I mentioned above that at least across most theories of L2 acquisition there is agreement that meaningful input is essential to language development. I think how learners engage with the input, how they respond to particular kinds of feedback, and how interaction is ultimately related to development form some of the key questions being actively addressed in the large and interesting body of research in the input and interaction framework. This work suggests that certain kinds of interaction and feedback indeed facilitate development (see Gass & Mackey, 2020).

How do you compare the role of language, society, and internal mechanisms in either facilitating or blocking interlanguage development? Are any of these variables more or less important to L2 acquisition than the others and in what ways?

I think sociocultural factors may play a crucial role in impacting what languages are learned as second languages and what heritage languages are maintained. These social factors may also lead to certain varieties of language being thought of as more prestigious, which may lead to certain variants of linguistic properties being used more than others, even by second language learners who may notice a difference between the language being used inside and outside of the classroom. Thus, I don't think these factors play a direct role in impacting L2 grammatical development, but a potentially mediating one in terms of the input that a learner is exposed to.

How do you think the field of SLA has changed over time since its inception? Were there any key issues at the start that are no longer important? Are there any pressing concerns and hot debates now that were not significant back then?

I am not sure that the key issues or pressing concerns have changed so much as the approach to addressing those questions. Lichtman and VanPatten (2021) recently argued that several of Krashen's (1982) key proposals are still being addressed in modern-day L2 research, just under the auspices of different terminology (such as implicit/explicit for the acquisition/learning distinction). Some of the earliest proposals relied much more on anecdotal evidence as opposed to large-scale, rigorous, empirical investigations. I think the research methodology and the statistical techniques that are employed have become much more sophisticated since the inception of the field.

How do you conceive of future developments in the field of SLA? What direction do you think future SLA research should take, and what are the prominent issues requiring immediate attention both in research and in practice? What are some of the uncharted areas in SLA?

I can only speak for my own subfield, but I think that the continued use of psycholinguistic techniques and brain imaging methodologies has the potential to bring us to a more fine-grained understanding of the ways in which second language processing and native language

processing are similar or different. These techniques allow us to track the dynamics of language processing and see how learners use linguistic information in real time. As I mentioned above, I think we need more studies that try to examine a broader array of factors simultaneously so that we come to a better understanding of how these factors interact. The properties of the relevant languages (both L1 and L2) are important in addition to the characteristics of the individual learner and the specific properties of the task at hand. These kinds of studies are difficult to conduct logistically but are necessary for us to come to a more comprehensive understanding of L2 acquisition and processing. One fairly uncharted area in L2 acquisition is coming to an understanding of how processing in the L1 and the L2 are related—so few studies examine the two languages in one individual, but we think that this may be a very interesting direction to pursue.

Thank you so much again Prof. Gabriele for your scholarly contribution. It has been a pleasure talking to you. Is there anything else you would like to add?

No, thank you for this opportunity.

Reflection Questions

Why might it be interesting to examine both the first language and the second language within one individual?

Why are there limitations in examining only one individual difference measure in isolation?

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