SEMANTICS IN INDIGENOUS AMERICAN LANGUAGES: 1917–2017 AND BEYOND[1]

Lisa Matthewson

University of British Columbia

Over the 100 years since *IJAL*'s inaugural issue, research on semantics in indigenous languages of the Americas has advanced the field in at least three major ways. It has greatly expanded our empirical knowledge of semantics in non-European languages, it has provided methodological breakthroughs, and it has had significant impact on linguistic theory. This paper provides an overview of contributions and progress in these three areas over the past century, focusing in particular on languages of the Pacific Northwest. It concludes with thoughts about what needs to be done in the next century.

[Keywords: semantics, fieldwork methodology, Pacific Northwest]

1. Introduction. In the study of natural language semantics, two questions are of primary importance. First, what semantic properties are common to all languages? Second, how do languages differ in their semantics? Progress in answering these questions depends on detailed, comprehensive study of as wide a range of languages as possible. They cannot be answered by in-depth analysis of only one language family, nor can they be answered by superficial description of a large number of unrelated languages.[2]

Over the 100 years since *IJAL*'s inaugural issue, researchers working on indigenous languages of the Americas (henceforth: American languages) have helped bring us closer to answers to these two important questions. In this paper, I provide an overview of the contributions that research on these languages has made to our understanding of semantics since 1917, focusing in particular on languages of the Pacific Northwest. I show that over the century in question, research on semantics in American languages has advanced the field in at least three major ways. It has greatly expanded our empirical knowledge of semantics in non-European languages, it has provided methodological breakthroughs, and it has had significant impact on linguistic theory.

After setting the stage by presenting a snapshot of the state of the art a hundred years ago, I proceed in **3** to a survey of the types of empirical results

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[1] For comments on an earlier version of this paper, I am very grateful to an *IJAL* reviewer, and to James Crippen, Henry Davis, Carrie Gillon, and Judith Tonhauser.

[2] For this proposal, see, for example, Davis, Gillon, and Matthewson (2014; 2015), among many others.

that have been provided by researchers working on the semantics of American languages. I then discuss methodological contributions, and finally theoretical impact. I conclude with a brief outlook to the next hundred years, in which I argue that although there are grounds for optimism, we still have much to discover, and the required research is urgent.

2. The state of the art in 1917: Boas's agenda. This section presents a snapshot of the state of the art in 1917, focusing on Boas's introductory *IJAL* article and the program of research it lays out.

In his inaugural paper, Boas (1917) implicitly expressed his commitment to the two questions introduced above. The issue of cross-linguistic commonalities is alluded to when he writes that "The unconsciously formed categories found in human speech have not been sufficiently exploited for the investigation of the categories into which the whole range of human experience is forced" (1917:5). By this, Boas seems to mean that we should attempt to discover which distinctions are universally encoded, or at least which distinctions are possible in human language generally; he proposes that American languages will be of "great help" in this investigation (1917:5). Boas also strongly advocates examining the ways in which systems differ cross-linguistically. He writes (1917:5) that "The variety of American languages is so great, that they will be of high value for the solution of many fundamental psychological problems."

Boas not only supports the investigation of universals and variation in general, he argues in particular that our understanding of natural language semantics can be advanced by the study of American languages. This is the case, he suggests, because American languages differ from European languages in their semantics in significant respects, and they also differ from each other in various ways. Touching on issues which would intrigue any modern formal semanticist, Boas highlights the distinctive meanings of functional elements in American languages, writing that "Besides the greater or lesser development of categories that are parallel to our own, many new ones appear" (1917:7).

Among the loci of semantic variation identified by Boas, we find deixis (which is often much more grammaticized in American languages than in European languages, and which encodes "new ideas" such as "visibility, or position in regard to the speaker in the six principal directions" [1917:6]), tenses (which "may be almost suppressed or may be exuberantly developed" [1917:6]), and modes (which "may include many ideas that we express by means of adverbs, or they may be absent" [1917:6]).

A final reason, according to Boas, that the study of semantics in American languages is fruitful is because of their polysynthetic nature (in Boas's terms, they display "clearness of etymological processes" [1917:5]). He proposes that "The isolation of formal elements and of stems, or of co-ordinate

stems,—whichever the case may be,—is easily performed, and the meaning of every part of an expression is determined much more readily than in the innumerable fossilized forms of Indo-European languages" (1917:5).

Boas was right that the languages of this region offer the potential for compositional semantic insights which do not come as readily in Indo-European languages. One example of this is the overt marking of (in)transitivity in Salish languages. Salish transitive verbs are, almost without exception, overtly marked with transitive suffixes. The facts in this area have led some researchers to believe that verb roots are largely—perhaps even exclusively—underlyingly unaccusative and telic. Suggestive evidence for this is given in (1), from St'át'imcets (a.k.a. Lillooet) (Salish). The bare roots on the left have unaccusative meanings, and their transitive counterparts on the right are formed by addition of either the causative (in 1*a*–1*c*) or the directive transitivizer (in 1*d*–1*f*).

	Intransitive		Transitive	
(1*a*)	*zuqʷ*	'die'	*zuqʷ-š*	'kill someone/something'
(1*b*)	*ƛ'iq*	'get here, arrive'	*ƛ'iq-š*	'bring someone/something'
(1*c*)	*qam't*	'get hit (by flying object)'	*qam't-š*	'hit someone/something'
(1*d*)	*mayš*	'get fixed'	*máyš-ən*	'fix someone/something'
(1*e*)	*qʷəz*	'get used'	*qʷəz-ən*	'use someone/something'
(1*f*)	*ɬwal*	'get left behind'	*ɬwál-ən*	'leave someone/something behind'

(adapted from Davis and Matthewson 2009:1101–2)

This surface transparency of argument structure alternations provides a window into derivational operations that are obscured in more familiar languages. As such, Salish languages have the potential to shed light on debates about the lexical semantics of verb roots and the causative–inchoative alternation. If all Salish roots are unaccusative (as argued, for example, by Davis 1997; 2000 and Davis and Demirdache 2000), this would support approaches in which transitives (and perhaps even unergatives) are compositionally derived from monadic roots (Hale and Keyser 2002 and Ramchand 2008, among others; cf. Koontz-Garboden's 2007 Monotonicity Hypothesis).[3]

We have seen that Boas's inaugural article laid out an ambitious agenda for studying semantics in languages of the Americas. We have also seen that

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[3] Things are not as simple as this brief discussion makes out. There is vigorous debate among Salishanists about the correct analysis of verb roots, in particular about whether unergative or semantically bivalent roots exist. See Gerdts (1988; 1998; 2006), Thomason and Everett (1993), Jelinek (1994), Thomason et al. (1994), Thomason (1994), Mattina (1996), Gerdts and Hukari (1998; 2006*a*; 2006*b*; 2012), Wiltschko (2001), and Davis and Matthewson (2009), among others.

he was presciently modern in his proposal that the study of universals and of variation can be enhanced by paying attention to these languages. However, his article also illustrates the infancy at that time of the field's knowledge about semantics. When it comes to the state of empirical knowledge, Boas is well aware of the issue; he writes that "It is not necessary to set forth the fragmentary character of our knowledge of the languages spoken by the American aborigines" (1917:1). With respect to methodology and analysis, a naïve optimism can perhaps be detected in Boas's claim that the isolation of the meaning of individual morphemes "is easily performed" in these languages (1917:5). Today, we know that isolating the precise empirical properties, let alone developing a satisfactory analysis, of even a single functional morpheme can take years.

3. Empirical issues in the semantics of American languages. My goal in this section is to provide an overview of the types of semantic topics that have captured the attention of researchers on American languages since 1917. I concentrate primarily in this section on *IJAL* papers, and the discussion is guided by an examination of work that has appeared in the *Journal* between its inception and the time of writing.

3.1. The first 50 years. In **2**, I observed that when *IJAL* began, very little was known about semantics in American languages; no formal analysis or even in-depth description had yet been attempted.[4] Of course, it would be surprising if anything substantive were known about the semantics of American languages at that time. Although philosophers of language have been studying semantic questions for centuries, empirical linguistic study of semantics did not begin to take hold until the mid-twentieth century. Fieldwork on American languages that targeted specific semantic questions emerged even later. The archives of *IJAL* reflect this state of affairs: semantics was not studied in the early decades.[5] In the first dozens of volumes, semantics is addressed only in the form of lexical semantic observations embedded in vocabulary discussions. By my reckoning, the first paper to address a semantic issue in a targeted fashion was Lee (1944). This is a paper on the thought processes of the Wintu, as revealed (according to Lee) by features of their nominal system.

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[4] David Beck (personal communication) points out that what passed for semantics in the very early days included Uhlenbeck's (1916) proposal that transitive verbs in American languages are fundamentally passive rather than active, and that this reflects "primitive" patterns of thought. See Sapir (1917) for arguments against both the linguistic and the ethno-psychological aspects of Uhlenbeck's proposals.

[5] Targeted semantics journals were not founded until much later, the earliest being *Linguistics and Philosophy* in 1977. *Language* began in 1925 and contains a few papers on American languages in the early decades, but these seem to parallel those in *IJAL* in their style and focus.

Beginning in the mid-1940s, a sparse set of papers begins to appear that deal in a descriptive fashion with semantic topics such as classificatory verb stems (Hoijer 1945), definiteness (Geary 1946*a*), negation (Lee 1946), and the subjunctive (Geary 1946*b*). Attention to semantics is also exemplified by Whorf's (1950) famous treatise on the Hopi conception of time. This is a bold paper, which stunningly contains not a single example sentence in Hopi. The paper concentrates almost exclusively on a single Hopi word (*tunátya,* roughly 'hope') plus its inceptive form (*tunátyava*) as support for Whorf's proposal that the Hopi language "contains no reference to TIME" (1950:67) and, furthermore, that Hopi speakers have no linear conception of time or distinction between past, present, and future.[6]

3.2. The second 50 years.   The modern era of semantic work on American languages begins halfway through *IJAL*'s first century. The first two *IJAL* papers to use targeted semantic fieldwork both appeared in volume 35 in 1969. Voegelin and Voegelin (1969) and Hale (1969) present pioneering reports on the meaning of, respectively, the Hopi particle /ʔas/ and the Papago (Tohono O'odham) particle /čim/.[7] Here for the first time we see the testing of explicit semantic hypotheses, as well as fieldwork techniques that involve the collection of minimal pairs and of negative data. Voegelin and Voegelin report on their fieldwork methods as follows (1969:194): "we began to obtain native speaker reactions to altering a previously recorded sentence with /ʔas/ by omitting the /ʔas/. To test whether a sentence, played back from a tape-recording, would be acceptable without /ʔas/, we ourselves would alter the sentence by repeating it—except for /ʔas/." Voegelin and Voegelin also note (1969:194) that "it is hard to convey in a published report the fascination which this kind of field work affords. Anyone who has lingering doubts about the accessibility of the subtle semantics of a language should have the experience of doing anthropological linguistic field work in which a linguist collaborates with a native speaker and both wrestle with a particular problem of meaning."

Importantly, the techniques used enabled the authors to make statements about what their respective particles CANNOT mean (negative evidence), as well as what they can (positive evidence). For example, in both Hopi and Tohono O'odham, the addition of the particle to certain stative sentences (which normally allow either a past or present tense interpretation) restricts the possible temporal interpretation to past (Voegelin and Voegelin 1969:195 and Hale 1969:209).[8]

[6] For a lengthy and spirited rejection of Whorf's proposals about Hopi, see Malotki (1983).

[7] The authors of these two papers were in contact; Voegelin and Voegelin acknowledge Hale's "generous help over a summer's work" (1969:194). For subsequent work on Tohono O'odham /čim/, see Copley (2005) and Copley and Harley (2014).

[8] Ironically for Whorf (1950), Voegelin and Voegelin show that Hopi /ʔas/ has subtle and predictable effects within a complex system of temporal interpretation.

Studies of semantics, including hypothesis-driven studies and those based on targeted fieldwork, pick up through the 1970s and then rise every decade after that, culminating by the end of the *Journal*'s first century in a veritable explosion of semantic work. In the most recent 26 issues of the *Journal* (i.e., from 2010 to the time of writing), there are over 40 papers which pay significant attention to semantics, amounting to over one third of the total papers published.

Perusal of semantic contributions over the whole century reveals that American languages have tended to lead researchers to concentrate on a number of core themes, some of which had been predicted by Boas (1917). By far the largest number of semantics-related papers in the *Journal* deal with argument structure and argument-structure-changing operations, in which category I include discussion of valency, noun incorporation, direct–inverse systems, participant hierarchies, and event structure. This preoccupation is a natural result of the wealth of inflectional morphology devoted to such properties and processes in languages of the Americas.

One recent example of the ongoing concentration on this subject area is Brittain and Acton (2014), a paper which analyzes the contribution of two Cree (Algonquian) verb-final suffixes, *-piyi* and *-∅*. Brittain and Acton argue that these suffixes are situated in little-*v* (see Ritter and Rosen 2010) and function to manipulate argument structure. Specifically, *-piyi* derives unaccusatives, while *-∅* derives unergatives. Brittain and Acton further argue (following Davis and Demirdache's 2000 argumentation for St'át'imcets) that *-piyi* "suppress[es] the 'causing process' sub-event in a causative representation" (2014:475). Their analysis is thus "compatible with the view that some, if not all, unaccusatives are semantically causative (among others, Levin and Rappaport Hovav 1995)" (2014:475).

Information structure is a second major topic of interest in *IJAL* semantics papers, including discussion of discourse structure, obviation, and pragmatic functions of word order (see Krifka 2008 for an introduction). Again, this focus is a natural response to salient typological features of the languages of the region: widespread *pro*-drop, flexible word order, and rich inflectional morphology on verbs that marks obviation and related phenomena. A recent example of work in this vein is Harbour, Watkins, and Adger (2012). These authors argue that in Kiowa (Kiowa-Tanoan), both focused and topical noun phrases are preferentially displaced to a pre-particular syntactic domain, while "incidental, non-topical" elements remain in post-particular position. In recent years, there has in general been an increase in semantically sophisticated attention to focus effects in American languages; see for example Culy (1999), Vallejos Yopán (2009), and Verhoeven and Skopeteas (2015).

As foretold by Boas, location and deixis are another rich ground for discussion, with a steady trickle of papers over the decades dealing with these topics. Recent examples include Gillon (2009)—a description and analysis

of the deictic features of determiners and demonstratives in S̲k̲wx̲wú7mesh (a.k.a. Squamish) (Salish)—and Kaufman (2013), which explores the Biloxi (Siouan) system of positional auxiliary verbs.

Other popular semantic themes include evidentiality (e.g., De Haan 2001 and Blain and Déchaine 2007, among many others), control (in the sense of agent control, see Saunders and Davis 1982 and subsequent work), verbal plurality/pluractionality (e.g., Garrett 2001 and Gillon and Mailhammer 2015), switch-reference (see McKenzie 2015*b* for a comprehensive overview), classifiers (e.g., volume 73, number 4 from 2007, which is devoted entirely to this topic), and tense and aspect systems (papers too numerous to list, but see **5** below). Again, these themes all arise naturally from typologically interesting and prevalent features of the languages of the region. Finally, in the 1990s, and even more since the year 2000, papers begin to appear regularly on issues which would be considered more "mainstream" from a formal semantic perspective: topics such as quantification (e.g., Jelinek and Demers 1997), modality (e.g., Johns 1999 and Epps 2010), questions (e.g., Cysouw 2007), free relatives (e.g., Caponigro, Torrence, and Cisneros 2013), definiteness (e.g., Gunlogson 2001), specificity (e.g., Quesada 2000 and Lyon 2015), or reported speech and indexicality (e.g., Munro et al. 2012).

In summary, Boas had high hopes for what the study of semantics in American languages would reveal. This brief overview of some of the semantic topics discussed in *IJAL* demonstrates that his hopes were amply fulfilled. Researchers of both descriptive and theoretical persuasions have been, and continue to be, fascinated by interesting semantic features of the languages of the region.

4. Methodological contributions.   In **3.2**, I dated the beginning of the "modern era" in semantic research in *IJAL* to the appearance of two papers: Voegelin and Voegelin (1969) and Hale (1969). What sets these papers aside from preceding ones is their fieldwork methodology, which involves targeted elicitation of speaker judgments about the acceptability of sentences. Voegelin and Voegelin followed up the following year with a spirited defense of the use of native-speaker intuitions in semantic fieldwork (Voegelin and Voegelin 1970). In this second paper, they argue against a "pessimistic recognition of a cut-off point in the informant's awareness of his own language" which would incorrectly "mean that anthropological linguistics has necessarily to stop short of subtle semantics" (1970:243).[9]

This small set of papers around the onset of the 1970s is the first to read as modern in their methods and their results. The major respects in which they

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[9] Voegelin and Voegelin also, impressively for the time period, tentatively propose a semantic universal: "whenever anything marked as past is associated with a marked future, the interpretation is necessarily something like UNACHIEVED INTENTION" (1970:245).

still differ methodologically from 21st-century *IJAL* semantics papers is that in the earlier time period, object language sentences were almost exclusively presented in isolation rather than in particular discourse contexts, and interpretations were presented almost exclusively only in the form of English translations. Nevertheless, both Voegelin and Voegelin's and Hale's papers represent an enormous step forward over Boas's (1917) rudimentary (and insufficient) methodological suggestions; Boas had advocated the collection of "large masses of texts" (1917:1) and stressed that different genres of material should be represented, including everyday conversation (1917:2). (He also correctly observed, however, that there was "ample room for improvements of method" [1917:2]). [10]

IJAL has been the venue for other methodological breakthroughs. Bittner (1987) is an early and excellent example of scientific hypothesis-testing methods being systematically applied to semantic questions in American languages. In this paper, Bittner argues that in West Greenlandic (a.k.a. Kalaallisut) (Eskimo-Aleut), objects of antipassive predicates always take narrow scope with respect to operators like modals, tense, aspect, or negation. She supports this proposal using both positive and negative data, and she relies on speakers' acceptability judgments of utterances in well-defined discourse contexts. Bittner describes her elicitation techniques in part as follows (1987:209):

> . . . the informant was presented with several scenarios (A, B, C, etc.) designed to distinguish between wide and narrow scope readings. For instance, for the transitive and the anti-passive equivalents of 'I have to help one of the students' . . . , the "wide scope" scenario was that there is some particular student, say Suulut, who has problems and I have to help him. The "narrow scope" scenario was that all the students have problems but I only have to help one of them, any odd one—could be Suulut, or Peter, or Jacob, whoever. As long as I help one I have done my share; the other teachers will take care of the rest.

Bittner further explains that the scenarios were explained verbally and in writing in Kalaallisut; the consultant was then asked to judge whether each sentence could be used in each scenario. Such methods, which enable hypotheses to be empirically tested and robustly supported, were not at all the usual custom in the 1980s, though they have become the norm rather than the exception in the past three decades. Bittner's explicitness about her elicitation methodology is also exemplary (and is actually still not the norm in formal semantic research; see Tonhauser and Matthewson 2016 for discussion).

Since the 1980s, researchers on American languages have been at the forefront of the development and refinement of fieldwork techniques for investigating semantics. They have certainly been active in the explicit discussion of these matters. Matthewson (2004*b*) is a relatively early work dedicated to

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[10] In his own research, Boas clearly drew on targeted elicitation, even if he did not make a practice of publishing negative data. Thanks to James Crippen (personal communication) for reminding me of this point.

the question of semantic fieldwork methodology. Although this paper presents techniques which are intended to be applicable to fieldwork on any language, it was published in *IJAL* because all of its examples were drawn from American languages. More recently, Tonhauser et al. (2013) present a range of novel and rigorous diagnostic techniques for investigating projective content. They illustrate these fieldwork techniques in Paraguayan Guaraní (Tupi-Guaraní), as well as English, but similarly indicate that they are intended for general use.

Contributions by American language researchers to semantic fieldwork methodology are highlighted also by two recent edited volumes. Berez, Mulder, and Rosenblum (2012), a volume dedicated to fieldwork methodologies in research on American languages, contains five papers that deal at least partly with semantic issues. And the first volume to have appeared that is devoted entirely to methodologies in semantic fieldwork (Bochnak and Matthewson 2015) contains no fewer than 11 papers by researchers who work on American languages.

Researchers on American languages have also been contributing to methodological advances by means of online elicitation materials. A prime example of this is Benjamin Bruening's Scope Fieldwork Project (<http://udel. edu/~bruening/ scopeproject/scopeproject.html>). In the course of his research on quantification and scope in Passamaquoddy-Maliseet (Algonquian), Bruening created a large set of photographs that illustrate various scopal scenarios (cf. Bittner's scopal scenarios, discussed above). These elicitation materials have since been used in research on languages such as Blackfoot (Algonquian) (Weber and Matthewson 2014) and Mandarin Chinese (Scontras et al. 2014).

Another innovation in semantic fieldwork methodology that has been pioneered by researchers on American languages is the targeted storyboard technique (Burton and Matthewson 2015). This method involves pictorial sequences designed to elicit spontaneous narratives from consultants. Crucially, the stories are crafted to elicit specific linguistic structures, elements, or meanings; in this respect, the technique differs from earlier apparently similar tools such as the Pear Stories (Chafe 1980) or the Frog Stories (Berman and Slobin 1994). After the speaker has told the story in their own words, follow-up elicitation enables the collection of negative data and the completion of minimal pairs. Many storyboards are available for general use at <http://www.totemfieldstoryboards.org/stories>. Since its original development for research on languages of the Pacific Northwest of North America, the storyboard technique has been used in the study of a range of languages including Hausa (Chadic) (Mucha 2012), Paciran Javanese (Western Malayo-Polynesian) (Vander Klok 2013), and Washo (isolate) (Bochnak 2015*b*).

5. The impact on linguistic theory of research on American languages. Research on American languages has contributed in significant

ways to the development of semantic theory. Indeed, this could hardly fail to be the case, given what previous sections have outlined: the increasing number of semanticists who are paying attention to American languages, the increasing number of American language researchers who are paying attention to semantics, and the intrinsically interesting and unusual properties of the languages of the region. In this section, I present a necessarily brief and incomplete summary of some of the important breakthroughs that the field owes to research on American languages. I focus particularly on languages of the Pacific Northwest, and on a parochial set of topics related to my own areas of expertise.

5.1. Quantification.   In the early 1980s, Barwise and Cooper (1981) proposed a set of semantic universals based on formal study of generalized quantifiers in just one language, English. The explicit proposing of semantic universals was a bold and unusual move for the time, and one which would naturally seem to invite empirical testing in other languages. However, the vast majority of responses to Barwise and Cooper's work, for more than the first decade after it was published, dealt only with English data. This changed with a project originally spearheaded by Emmon Bach, Angelika Kratzer, and Barbara Partee, designed to test the properties of quantification cross-linguistically. This project culminated in a landmark volume (Bach et al. 1995), in which several authors argued that various American languages completely lacked D(eterminer)-quantification and thus constituted counterexamples to Barwise and Cooper's NP-Quantifier Universal (see Baker 1995, Faltz 1995, Jelinek 1993; 1995, and Vieira 1995).[11] Jelinek's work on Straits Salish was particularly important here. Beginning in the 1980s (e.g., Jelinek 1984; see also Jelinek and Demers 1994), Jelinek had proposed the Pronominal Argument Hypothesis, according to which some languages lack non-pronominal DPs in argument positions. She then argued that the absence of D-quantification in Straits derived from its status as a pronominal argument language.[12]

Jelinek's proposals have inspired much subsequent cross-linguistic research on quantification, leading to further empirical discoveries along with theoretical innovation. For example, there has been lively subsequent debate about whether generalized quantifiers do exist in Salish languages. In Matthewson (1998; 2001), I argued that they do, based in part on the existence of proportional readings of quantifiers like 'many' and 'few'. However, I showed

[11] In the decades since, the study of quantification has certainly not been restricted mainly to English. A recent example of a major cross-linguistic study is Keenan and Paperno (2012).

[12] See related discussion for Swampy Cree in Reinholtz and Russell (1995). For a different recent take on the diversity of quantificational strategies in American languages, see Bittner and Trondhjem (2008). For arguments that Straits and other Salish languages are not pronominal argument languages, see Davis and Matthewson (2009), among others.

that quantified noun phrases are formed differently in Salish than in more familiar languages (necessarily always paralleling English partitives like *all the women,* rather than canonical generalized quantifiers like *every woman*). Both of these properties are illustrated in (2) for St'át'imcets.[13]

(2) [xʷʔit   ʔi=plíšmən=a]   ʔúχʷal'
     [many   DET.PL=policeman=EXIS]   go.home

    'Many (of the) policemen went home'.

(2a) False in context: (cardinal)
    There are 100 policemen (along with a bunch of cooks and
       teachers) at a party. Twenty-five policemen go home, and 75
       stay.

(2b) False in context: (cardinal)
    There are 25 policemen (along with a bunch of cooks and teachers)
       at a party. All the 25 policemen go home.

(2c) True in context: (proportional)
    There are 30 policemen (along with a bunch of cooks and
       teachers) at a party. Twenty-five policemen go home, and five
       stay. (St'át'imcets) (Matthewson 1998)

Davis (2010), however, argues that in St'át'imcets, the apparent generalized quantifiers do not participate in the predicted scopal interactions. This is illustrated in (3). If the phrases *tákəm ʔi=šk'ʷúk'ʷmiʔt=a* 'all the children' and *šáq'ʷuɬ ʔi=púkʷ=a* 'half the books' were behaving as true generalized quantifiers, we would expect the two scopal readings in (3a) and (3b).

(3) Context: Four children are meant to read four books over the
       summer holidays.
    [tákəm   ʔi=šk'ʷúk'ʷmiʔt=a]   paqʷal'ikšt–mín–itaš
    [all   DET.PL=child=EXIS]   read–RED–3PL.ERG

     [šáq'ʷuɬ   ʔi=púkʷ=a]
     [half   DET.PL=book=EXIS]

    'All the children read half the books'.

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[13] Abbreviations used in this paper: 1 = first person, 3 = third person, ACC = accompanying, AUX = auxiliary, CAUS = causative, CIRC = circumstantial modal, CN = common noun connective, CNJ = conjunctive, CONJ = conjunction, CTR = control transitive, CUST = customary, DEM = demonstrative, DET = determiner, DIR = directive transitivizer, DM = determinate, EPIS = epistemic modal, ERG = ergative, EXIS = assertion of existence, FUT = future, IND = independent, INF = informative, IPFV = imperfective, IRR = irrealis, LEX = lexical particle, LC = limited control, MOD = modal, NEG = negation, NMLZ = nominalizer, PART = particle, PL = plural, POSS = possessive, PRES = present, RED = redirective transitivizer, REDUP = reduplicant, REFL = reflexive, REL = relative clause marker, RL = realis, S.PL = plural subject, SBJ = subject, SBJV = subjunctive, SG = singular, SR = switch reference, SUB = subordinator, TR = transitive.

(3*a*) Wide scope reading for the subject:
    For each child x, x read a (potentially different) half of the books.

(3*b*) Narrow scope reading for the subject:
    For one half of the books (e.g., books 1 and 2), each child read that half.

Davis establishes by means of acceptability judgments in specific discourse contexts that (3) does not allow either of these readings. Instead, the sentence is acceptable only in contexts which support a cumulative reading (Scha 1981):

(3*c*) Cumulative reading:
    All the children read at least one book, and a total of two out of the four titles were read.

Cumulative readings are scopeless readings, in which a predicate relates two sets which each have a certain total size. They crucially do not involve generalized quantifier interpretations. Taken together, these findings provide a set of diagnostics for establishing generalized quantifierhood, contribute to the question of whether GQs are universal, and suggest that the traditional theoretical correlation of proportional readings with generalized quantifierhood cannot be correct.

5.2. Tense.   Boas (1917) flagged tense as an area in which the study of American languages would have much to offer, and his prediction has been upheld. A salient intriguing feature of the languages of this region is that many of its languages appear, at least on the surface, to lack tense distinctions. Research on these languages kick-started, and continues to inform, a lively theoretical debate about the existence or otherwise of truly tenseless languages—that is, of languages that lack grammaticalized encoding of the relation between utterance time and reference time.

The issue is illustrated in (4) and (5) for Gitksan (Tsimshianic). Both eventive and stative predicates allow either past or present reference times in the absence of overt marking. Indeed, there are no overt markers available in the language for either present or past tense (although there are, of course, temporal adverbials).[14]

(4) Bax=t   Yoko.
    run=DM   Yoko

   'Yoko ran'/'Yoko is running'. (Gitksan)   (Jóhannsdóttir and Matthewson 2007, cited in Matthewson 2013:356)

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[14] Gitksan data are presented in the orthography developed by Hindle and Rigsby (1973).

(5) Siipxw=t James (k'yoots).
    sick=DM James (yesterday)

    'James was sick (yesterday)'/'James is sick'. (Gitksan)
      (Matthewson 2013:357)

For future time reference, overt marking is obligatory, in the form of the pre-verbal element *dim*. *Dim* is necessary and sufficient for a future interpretation, as shown in (6) and (7).

(6) *(Dim) limx=t James t'aahlakw.
    *(FUT) sing=DM James tomorrow

    'James will sing tomorrow'. (Gitksan)   (Matthewson 2013:357)

(7) *(Dim) siipxw=t James t'aahlakw.
    *(FUT) sick=DM James tomorrow

    'James will be sick tomorrow'. (Gitksan)   (Matthewson 2013:357)

Thus, although the temporal reference of unmarked predicates, as in (4) and (5), is not completely free, it is far from obvious that we should postulate a standard tense system in this language.

Based on similar absences of overt tense distinctions (as well as other empirical diagnostics), many researchers have proposed truly tenseless analyses of American languages. See, for example, Bohnemeyer (2002; 2009) for Yucatec Maya (Mayan), Shaer (2003) for West Greenlandic, Bohnemeyer and Swift (2004) for Inuktitut (Eskimo-Aleut), Ritter and Wiltschko (2009) for Blackfoot (Algonquian) and Halkomelem (Salish),[15] Bittner (2005; 2011; 2014) for Kalaallisut, Smith, Perkins, and Fernald (2003; 2007) for Navajo (Dene), and Tonhauser (2011) for Paraguayan Guaraní. It is worth pointing out that one of these papers appeared in *IJAL* (Smith, Perkins, and Fernald 2007); along with other work by Smith and colleagues (Smith, Perkins, and Fernald 2003, Smith and Erbaugh 2005, and Smith 2008), this produced one of the most influential strains of analysis in the tenselessness literature. Smith and colleagues propose a set of general principles which, in conjunction with aspectual properties, provide default temporal interpretations. These default interpretations are especially visible in languages without tenses (such as Navajo), but they can be overridden by adverbials or by contextual information. Smith et al.'s system has been adopted for use in a wide range of languages, including recently by Mucha (2013; 2015) for Hausa.

On the other side of the debate, tensed analyses of languages without an overt past–present distinction have also been proposed. Following Matthewson's (2006*b*) tensed analysis of St'át'imcets, Jóhannsdóttir and Matthewson

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[15] Ritter and Wiltschko actually only argue that Blackfoot and Halkomelem do not encode tense in Infl; they do not explicitly discuss whether reference times are semantically restricted by other means.

(2007) argue that Gitksan possesses a phonologically null non-future tense, which restricts reference times to times preceding or overlapping with the utterance time. This analysis correctly accounts for not only the core data in (4)–(7) but also more complex facts having to do with 'past-futures' ('would'-readings) and embedded tenses. Other tensed analyses of American languages include those by Enrico (1983) for Haida (isolate), Hayashi and Spreng (2005) and Hayashi (2011) for Inuktitut, Wolvengrey (2006) for Cree (Algonquian), Reis Silva and Matthewson (2007) for Blackfoot, Thomas (2012) for Mbyá (Tupi-Guaraní), Welch (2015) for Tłįchǫ Yatìı (a.k.a. Dogrib) (Dene), and Toosarvandani (forthcoming) for Northern Paiute (Uto-Aztecan).

While there is as yet no consensus about whether truly tenseless languages exist,[16] the quality of the empirical and theoretical discussion of the issue has risen greatly over the past twenty years. Sophisticated semantic fieldwork and theoretical rigor are now the norm when investigating languages with interesting or apparently non-existent tense systems. The field is gradually converging on a set of diagnostics for establishing the existence of tenses even when they are not surface-obvious. And the issue is important: as pointed out by Tonhauser (2015:139), "the debate about whether tenseless languages receive tensed or tenseless analyses is not merely a matter of terminology or theoretical preference, but has consequences for the long-term goal of identifying universals and variation in cross-linguistic temporal reference." The current lively state of the discourse in this area is due in large part to the in-depth empirical and analytical research that has been carried out on American tense systems.

Before leaving the topic of tense, I should point out that tenselessness is not the only interesting issue in this realm. Boas already observed that in American languages, tenses may not only be almost suppressed but may also be "exuberantly developed" (1917:6). In this vein, see, for example, Martin's (2010) study of five past tenses in Creek (Muskogean) or Hayashi's (2011) analysis of Inuktitut as possessing multiple past and future tenses. Another issue of interest is the phenomenon of optional tense; see, in particular, Cable (2015) on Tlingit (Na-Dene) and Bochnak (2016) on Washo. Finally, the temporal interpretation of noun phrases has received a large amount of attention; see, for example, Burton (1997) and Wiltschko (2003) on Halkomelem, Demirdache (1997) and Matthewson (2005) on St'át'imcets, Tonhauser (2006; 2007; 2008) on Paraguayan Guaraní, and Thomas (2014) on Mbyá.

5.3. Aspect.   Situation aspect and grammatical aspect have both been very rich areas of study in American languages, especially since the 1980s. The available space does not allow me to do justice to the full range of issues, let alone to their theoretical significance. I therefore highlight just one topic, the issue of Aktionsart (a.k.a. lexical aspect/situation aspect) as it has been discussed in Salish languages.

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[16] See, for example, Sybesma (2007) for arguments that Mandarin has a T node, in spite of many claims to the contrary.

Salish languages have become well known over the past decade for their intriguing properties with respect to Vendler classes. Of particular interest is the telicity or otherwise of the classes of predicates that correspond to English accomplishments. Salish languages pattern with a range of others[17] in that accomplishment predicates do not entail culmination in the perfective aspect. This has been shown for at least Comox-Sliammon (Davis 1978 and Watanabe 2003), St'át'imcets (Matthewson 2004*a* and Bar-el, Davis, and Matthewson 2005), Sk̲wx̲wú7mesh (Bar-el 2005, Bar-el, Davis, and Matthewson 2005, and Jacobs 2011), Halkomelem (Gerdts 2008), and SENĆOŦEN (a.k.a. Saanich) (Kiyota 2008 and Turner 2011). Some examples of non-culminating interpretations are given in (8)–(11).

(8) K'ʷul'–ún'=ɬkan   ti=c'láʔ=a,   λ'uʔ ʔáy=λ'uʔ
     make–DIR=1.SG.SBJ   DET=basket=EXIS   but   NEG=just

    kʷ=cukʷ=š
    DET=finish=3POSS

    'I made the basket, but it didn't get finished'. (St'át'imcets)
    (Bar-el, Davis, and Matthewson 2005)

(9) Na p'ayak–ant–as ta   John ta   snexwilh–s
     RL heal–TR–3ERG   DET   John DET canoe–3POSS

    welh haw k–as   7i   huy–nexw–as.
    CONJ NEG IRR–3CNJ PART finish–LC–3ERG

    'He fixed his canoe but he didn't finish (fixing) it'. (Sk̲wx̲wú7mesh)
    (Bar-el, Davis, and Matthewson 2005)

(10) ləʔə sən   kʷəʔ xʷəč–ət   kʷs   Jack ʔiʔ ʔawa
     AUX   1.SG   INF   wake.up–CTR   DET   Jack ACC NEG

    kʷs–xʷəy–s
    SUB–wake.up–3.SG

    'I woke up Jack but he would not wake up'. (SENĆOŦEN)
    (Kiyota 2008:59)

(11) niʔ cən   q̓a:y–t   t̓θə speʔəθ ʔiʔ ʔəwə niʔ–əs
     AUX 1.SG.SBJ   kill–TR   DET bear   and NEG   AUX–3.SG.SBJ

    q̓ay
    die

    'I killed the bear but it didn't die'. (Halkomelem)   (Gerdts 2008,
    cited in Jacobs 2011 and in Demirdache and Martin 2015)

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[17] For example, Tagalog (Dell 1983), Japanese (Ikegami 1985), Hindi (Singh 1998), Malagasy (Travis 2005), Thai (Koenig and Muansuwan 2000), Mandarin (Koenig and Chief 2008), Karachay-Balkar and other languages (Tatevosov 2008 and Tatevosov and Ivanov 2009), among others. In the Pacific Northwest, besides Salish we have also Kwak'wala (Wakashan) (Greene 2013).

In Salish, the property of non-culmination appears only with certain transitivizers and is intimately related to the agent-control system of the languages. Thus, all the predicates in (8)–(11) contain control transitivizers; their counterparts with non-control (or limited control) transitivizers do entail culmination and would therefore be infelicitous with these continuations. (See the references cited above for discussion and data, and on the control/aspect connection, see also Carlson 1996.)

Various analyses of this phenomenon have been proposed. For example, Bar-el, Davis, and Matthewson (2005) derive all accomplishments from telic unaccusative roots (cf. the discussion in **2** above) and assign the control transitivizer a semantics involving quantification over inertia worlds, such that the culmination is not entailed to take place in the actual world (but there is an implicature that it does). Jacobs (2011) analyzes the control transitives as encoding event initiation, while the limited control transitives encode event culmination.

A second salient feature of Salish Aktionsart—again shared with various other languages[18]—is the inherent inchoativity of both activity predicates and a subclass of stative predicates, at least according to some authors (e.g., Bar-el 2005 and Kiyota 2008). One diagnostic that is used to motivate the inchoative analysis is the punctual adverbial test, illustrated in (12) and (13). The predicates *hiləkʷ* and *shupn* can only be interpreted as inchoative in sentences of this type.

(12) hiləkʷ   tə   Jack   kʷs   tečəl–s   θə   Mary
     become.happy   DET   Jack   SUB   arrive–3.SG   DET   Mary

   'Jack got happy when Mary arrived'. (SENĆOŦEN)   (Kiyota
      2008:260)

(13) Na   shupn   lha   Carrie   kwi   s–es   tin–tin   ta
     RL   whistle   DET   Carrie   DET   NMLZ–3POSS   REDUP–ring   DET

     new'tstn
     phone

   'Carrie whistled when the phone rang'. (Inappropriate if Carrie was
      already whistling) (Skwxwú7mesh)   (Bar-el 2005:155)

Turner (2014), however, argues against the inchoative analysis for SENĆOŦEN, proposing instead that the difference between SENĆOŦEN and languages like English lies in the tense system rather than the aspectual one (see her paper for details; see also Turner 2011).

As with the tense literature discussed above, studies of Aktionsart in American languages have made important contributions to the field's understanding of what the range of empirical possibilities are, and are thus contributing to our overall search for semantic universals and our grasp of the possible range of semantic variation.

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[18] For example, Korean (Choi 2015) and Siamou (Niger-Congo) (Toews 2015).

Space unfortunately prevents me from discussing grammatical aspect here, although as might be expected, a large amount of interesting research has been done on this topic in American languages. In *IJAL* alone, readers are referred to at least Kroeber (1988) on Comox-Sliammon, Hardy and Montler (1988) on Alabama (Muskogean), James (1991) on Moose Cree, Smith (1996) on Navajo, Garrett (2001) on Yurok (Algic), and Harley and Flavez Leyva (2009) on Hiaki (Uto-Aztecan); see also Rice's (2012) review of Wilhelm's monograph on Dëne Sųłiné (Dene/Athapaskan).

5.4. Modality. American languages often possess complex mood systems, as well as modal adverbs, attitude verbs, and evidentials (some of which may serve double duty as modals; see references in **5.5** below). In spite of this, mood and modality are actually rather sparsely discussed in the archives of *IJAL.* The theoretical literature, on the other hand, has paid quite a bit of attention to the interesting properties of modality in American languages.

One feature of American modals that has generated lively discussion is their so-called variable force. This refers to the ability of individual modal elements to be used both in contexts that support necessity claims and in contexts that support possibility claims. This is illustrated in (14) and (15) for the St'át'imcets modal circumfix *ka-. . .-a.* This element can be used to express ability (traditionally often analyzed as a type of circumstantial possibility), but also to express circumstantial necessity (a 'had to' interpretation).

(14) wáʔ=łkan   **ka–**xát–š**–a**   ta=k'ə́ƛ'h=a.
    IPFV=1.SG.SBJ   **CIRC–**lift–CAUS**–CIRC**   DET=rock=EXIS

    'I can lift the rock'.   (Davis, Matthewson, and Rullmann
      2009:210)

(15) kənš–q'áʔ ku=ƛ'ə́x šzaq' ƛ'uʔ **ka–**nšnánʔ**–a**.
    try–eat   DET=sweet bread but **CIRC–**sneeze**–CIRC**

    'She started to eat some sweet bread, but she had to sneeze'.
      (Davis, Matthewson, and Rullmann 2009:222)

The same ability to be used in both necessity and possibility contexts holds of all modals in St'át'imcets, including epistemics, deontics, and futures; see Matthewson, Davis, and Rullmann (2007) and Rullmann, Matthewson, and Davis (2008) for further data and discussion. "Variable force" effects also exist for some modals in Gitksan (Peterson 2010 and Matthewson 2013), Nez Perce (Penutian) (Deal 2011), Nsyilxcen (a.k.a. Okanagan) (Salish) (Menzies 2012), and Washo (Bochnak, forthcoming), as illustrated in (16)–(19) respectively.

(16) Context: You're wondering where your friend is. You notice his rod
      and tackle box are not in their usual place.
    Yugw=**ima**=hl dim   ixw–t.
    IPFV=**EPIS**=CN   FUT   fish.with.line–3

    'He might be going fishing'./'He must be going fishing'./'He's

probably going fishing'./'He's likely going fishing'./'He could be going fishing'./ 'Maybe/perhaps he's going fishing'. (Gitksan)   (Peterson 2010:161)

(17)   Context: I am watching people clean out a cooler and throw away various things.

hi–wqíi–cix–∅   'iléx̂ni   hipt   ke   yox̂
3SBJ–throw.away–IPFV.PL–PRES   a.lot   food   REL   DEM

hi–pá–ap–**oʼqa**
3SBJ–S.PL–eat–**MOD**

(17a)   'They are throwing away a lot of food that they **could** eat'.

(17b)   'They are throwing away a lot of food that they **should** eat'. (Nez Perce)   (Deal 2011:574)

(18a)   Context: You know that Mary loves to go running and often goes on runs randomly. She could also be at the store or at school. I ask you, where is Mary?

Mary   **mat**   ac–qíc–əlx
Mary   **MOD**   CUST–run–LEX

'Mary might be running'. (Nsyilxcen)   (Menzies 2012:2)

(18b)   Context: Mary runs every day to train for a marathon. She usually runs at 6PM on Tuesdays. Today is Tuesday and it's 6PM. I ask you, where is Mary?

Mary   **mat**   ac–qíc–əlx
Mary   **MOD**   CUST–run–LEX

'Mary must be running'. (Nsyilxcen)   (Menzies 2012:2)

(19a)   Context: You hear a knock at the door. You can't see through the window who it is, and you're not expecting anyone, but you can make out that the person looks about the same height as Beverly.

bévali   k'–éʔ–hel–i–gi   **k'–éʔ–i**
Beverly 3–be–SBJV–IND–REL   **3–MOD–IND**

'It might be Beverly'. (Washo)   (Bochnak, forthcoming)

(19b)   Context: You are planning to drive over the mountains. It has started to snow, and you know that whenever it snows, the road over the mountains is closed.

déʔeš–ʔáŋaw–i–š   yéweš   gum–beyéc'ig–i–gi   **k'–éʔ–i**
snow–good–IND–SR   road   REFL–close–IND–REL   **3–MOD–IND**

'It's snowing a lot, so the road must be closed'. (Washo) (Bochnak, forthcoming)

Modals with these properties present a challenge for standard analyses (e.g., Kratzer 1991 and much subsequent work). The challenge has been met in

different ways by different authors. Very briefly, some have proposed that the modals in question are actually necessity modals, with an ability to be weakened in context (Matthewson, Davis, and Rullman 2007, Rullmann, Matthewson, and Davis 2008, Davis, Matthewson, and Rullmann 2009, and Bochnak, forthcoming), while others have argued that the modals are possibility modals (Peterson 2010 and Deal 2011). The different analyses make partially different empirical predictions, particularly for downward-entailing contexts; however, these contexts are often, for language-internal reasons, difficult to test. In general, the phenomenon of apparent variable force has led to fruitful theoretical debate on the correct analysis of quantificational force in modals. See also Kratzer (2012) and Yanovich (2013) for discussion of variable force effects.

In very recent years, scholars working on American languages have started to apply formal theoretical tools to other issues in modality, with exciting empirical and theoretical results. Work in this vein includes, for example, Louie's (2014) investigation of interactions between circumstantial modals and temporality in Blackfoot. Louie shows that Blackfoot's ability modal, *ohkott-*, patterns as an eventive predicate, while the future modal *áak-* and the 'might' modal *aahkama'p* pattern like stative predicates. Louie argues for an action-dependent framework that incorporates an agentivity requirement on the ability modal. She also extends her analysis to account for properties of Blackfoot conditionals. Another important recent contribution is Bogal-Allbritten's (2016) study of the Navajo attitude verb *nisin,* which can be used to report attitudes both of thinking and desiring. Adapting insights by Kratzer (2006; 2013) and Moulton (2009; 2015), Bogal-Allbritten argues that some aspects of the semantics traditionally assigned to attitude verbs are in fact provided by material in the clauses they embed, with Navajo *nisin* being a limiting case in which the attitude verb only determines the attitude holder.

5.5. Evidentiality and other topics.   This paper cannot hope to present a comprehensive—or even a balanced—overview of research on the semantics of American languages. I have focused so far on some of the topics with which I am the most familiar, and for which languages of the Pacific Northwest region have been at or near the forefront of progress. In this final section, I give a brief nod to other topics.

An important area in which American languages have contributed greatly to our understanding is evidentiality. Researchers on evidentials in languages of this region have brought novel and subtle empirical properties to light, as well as making influential analytical proposals. Significant works in this area include, for example, Faller's (2002) groundbreaking study of Cuzco Quechua evidentials (see also Faller 2003; 2007; 2011), Aikhenvald's (2004) comprehensive typological survey, Murray's (2010) dissertation on Cheyenne (see also Murray 2011; 2014; 2016; forthcoming *b*), Peterson's (2010)

dissertation on Gitksan, and Waldie's (2012) dissertation on Nuu-chah-nulth (Wakashan). *IJAL* papers on evidentiality include De Haan (2001), James and Clarke (2001), Blain and Déchaine (2007), and Munro et al. (2012); see also Matthewson, Davis, and Rullmann (2007), Gutiérrez and Matthewson (2012), and recent work by Tonhauser (2014), among many others.

There are many other areas in which American languages have advanced our understanding of natural language semantics. Space considerations sadly prevent me from discussing, for example, the many theoretically informed contributions on the following topics (note that both topics and references are non-exhaustive!):

- Noun incorporation and semantic incorporation (Bittner 1987, Axelrod 1990, Van Geenhoven 1998, Wilhelm 2002, Wharram 2003, Gerdts and Hukari 2008, and Rice 2008)
- Determiner semantics (Matthewson 1998; 1999, Gillon 2009; 2011; 2013, and Lyon 2013; 2015)
- Mass vs. count (Wilhelm 2006; 2008, Gillon 2010; 2012, Franchetto, Santos, and Lima 2013, Davis 2014, Lima 2014, and Deal 2016)
- Gradability (Bochnak 2013; 2015*a* and Bogal-Allbritten 2013; 2016)
- Focus and questions (Koch 2008; 2013, AnderBois 2009; 2012, Lyon 2013, and Littell 2016)
- Discourse functions and clausal relations (McKenzie 2012; 2015*a*, Toosarvandani, forthcoming, and Crippen, in preparation)
- Disjunctions and other sentential connectives (Murray, forthcoming *a*)
- Plural events and pluractionality (Matthewson 2000, Van Geenhoven 2005, Houser, Kataoka, and Toosarvandani 2006, Sanchez-Mendes and Müller 2007, Wood 2007, Müller and Sanchez-Mendes 2008, Salanova 2011, Faller 2012, Henderson 2012, and Cable 2014)
- Spatial reference (Bohnemeyer 2011; 2012)
- Discourse particles (Saunders and Davis 1977, Kratzer and Matthewson 2012, Heins and Matthewson 2015, LeSourd 2015, Gutzmann, Hartmann, and Matthewson 2016, Davis and Matthewson 2016, and Littell 2016)
- Presupposition and projective content (Matthewson 2006*a*; 2009 and Tonhauser et al. 2013)

This brief overview, I hope, suffices to convince any reader that research on semantics in American languages has had substantial impact on linguistic theory. American languages are genetically and typologically very different from the standard European languages overwhelmingly studied by semanticists. Their study in recent decades has brought to light new insights both about properties that recur across languages, and about the extent of cross-linguistic diversity. The theoretical landscape has been shaped and altered by insights from American languages in many areas, and this shows no signs of slowing down.

6. Looking to the future. There is bad news, there is good news, and there is a call for action.

The bad news is, I am sure, familiar to every reader of this *Journal*: the endangerment status of most indigenous languages of the Americas. This is a tragedy of monumental proportions for all kinds of reasons—social, cultural, political, and scientific. From the point of view of semantics, one massive problem is that semantics is extremely difficult to do on the basis of corpus data alone. Establishing the truth conditions of sentences, or the pragmatic contribution of utterances, is simply far more successful when one can work with native speakers. Acceptability judgments and negative data are indispensable, as are the insights, intuitions, and intellectual contributions of the speakers. The endangerment or even extinction of American languages therefore seriously jeopardizes our chance to uncover their semantic properties. And it should be very clear that in spite of the amount of excellent work that has already been done, there is far more that we still need to find out. There is still much to be discovered even about relatively well-studied areas such as tense, let alone about under-researched areas like presuppositions or discourse particles.

The good news is that there has been a significant recent increase in semantic research on these languages, in particular and most importantly by young researchers. A large proportion of the contributions cited in the previous subsection, for example, are by recent graduates. These young scholars are well trained in both fieldwork methodologies and formal tools, and they have long careers of research and of training others ahead of them. It seems certain that they will continue to contribute fresh empirical discoveries and novel theoretical insights based on their research on American languages.[19]

My call to action is simply that much more of this needs to happen. Given the high endangerment status of most American languages, continued and increased investigation of the semantics of these languages is of the utmost urgency. To those who are already working in this area: keep going! Submit your work to our flagship journal *IJAL,* to regional journals such as the *Northwest Journal of Linguistics,* to conferences like SULA and WSCLA, and to more general and theoretical venues. Keep archiving your data for future generations. Continue to develop and refine methods for testing semantic and pragmatic hypotheses in the field. Inspire, teach, and coauthor with others who are younger than you. Recruit, mentor, and support indigenous scholars.

To those who have not yet dared to, or felt moved to, work on semantics in an American language: I urge you to consider doing so! Many, many future

[19] This research, in particular by young scholars, is very well fostered by the SULA conference (Semantics of Under-Represented Languages in the Americas), as well as by other region-focused conferences such as WSCLA (Workshop on Structure and Constituency in Languages of the Americas).

generations can work on English, but NOW is the time to work on endangered and understudied languages. The rewards of this work are immeasurable, and the results will be useful forever.

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