Morphosyntactic opacity in Aymara complement agreement: An OT account

Raúl Aranovich
University of California Davis

Aymara has differential agreement between the verb and its complements. Oblique complements introduced by different verbal suffixes trigger different agreement rules, according to Silverstein's animacy scale. I interpret this phenomenon as a case of "morphosyntactic opacity", and I develop an analysis for it based on a stratified version of Optimality Theory.

1 Complement marking in Aymara

Aymara, an Andean language with more than 1.5 million speakers, (Hardman 1981, Büttner 1983, Hardman *et al*. 1988, Briggs 1993) is an SOV language, predominantly agglutinative, with no prefixes. A characteristic feature of Aymara is the use of suffixes to mark the information structure of the sentence: *-wa* 'focus', *-xa* 'topic', *-sa* 'interrogative', and *-ti* 'interrogative/negative'. In addition there is a 'honorific' suffix *-ya*. The dependents of the clause are identified by a set of nominal suffixes, as well as by a complex system of subject and complement agreement verbal suffixes. Subjects (nominative) are unmarked. Direct objects (accusative) are identified by loss of the last vowel. Indirect objects (dative) bear the suffixes *-ru* (1a) or *-ta* (1b)[1].

(1a) *Naya-w jupa-r t'ant' chur-ta.* (p. 110)
She-FOC him-DAT bread.ACC give-1/3.AOR
'She gave him bread.'

(1b) *Jupa-t kis alani-:.* (p. 219)
him-DAT cheese.ACC buy-1/3.FUT
'I will buy cheese from him.'

1.I want to acknowledge Juan de Dios Yapita, Orhan Orgun, Martina Wiltshko, and Rose-Marie Dechaine for their comments and suggestions. All errors and shortcomings are my own. Page numbers in the examples are in reference to Hardman *et al.* 1988. The following abbreviations are used in the glosses: ACC: accusative, ACT: actor, AOR: aorist, BEN: benefactive, beneficial, CAUS: causative, DAT: dative, FOC: focus, FUT: future, HARM: harmful, HON: honorific, INT: interrogative, NOM: nominative, PSD: possessed, PSR: possessor, TOP: topic, 1-2-3: 1st-2nd-3rd person, 4: 1st person inclusive.

There is also a set of oblique functions, distinguished by several nominal suffixes. Each of these obliques is normally introduced by a verbal derivational suffix. Beneficiaries are marked by the nominal suffix *-taki*, and introduced by the verbal suffix *-rapi-* 'beneficial' (2a). possessors are marked by the nominal suffix *-na*, introduced by the verbal suffix *-raqa-* 'harmful' (2b). Actors are marked by *-mpi*, and introduced by the causative suffix *-ya-* (2c).

(2a) *Naya-w jupa-r* ***jupa-tak*** *t'ant'* *chura-**rap**-ta.* (p. 110)
I-TOP him-DAT her-BEN bread.ACC give-BEN-1/3.AOR
'I gave him bread for her.'

(2b) *Naya-x* ***juma-n*** *wawa-m* *sartaya-**raq**-sma* (p.110)
I-FOC you-PSR baby-PSD.ACC wake.up-HARM-1/2.AOR
'I woke up your baby.'

(2c) *Naya-w jupa-r* ***jupa-mp*** *t'ant'* *chura-**y**-ta* (p.108)
I-TOP him-DAT her-ACT bread.ACC give-CAUS-1/3.AOR
I made her give him bread

The Aymara verb inflects for tense and person of the subject and complement, with a system of portmanteau suffixes. The aorist suffix *-i* is selected for a third person subject and a third person object (3a), but when the object changes to second person the suffix must also change to *-tam* (3b). Table 1 gives the agreement suffixes for the Aorist and the Future tenses.

(3a) *K"it-s* *t"aq-**i*** (p.234)
who.ACC-INT look.for-3/3.AOR
'Who was he looking for?'

(3b) *Jum* *t"aq-**tam*** (p.234)
you.ACC look.for-3/2.AOR
'He was looking for you'

Table 1: Aymara person/tense suffixes

Aorist				
S \ C	1	2	3	4
1		-sma	-ta	
2	-ista		-ta	
3	-itu	-tam	-i	-istu
4			-tan	

Future				
S \ C	1	2	3	4
1		-:ma	-:	
2	-ita:ta		-:ta	
3	-itani	-:tam	-ni	-istani
4			-ñani	

2 Grammatical relations, animacy, and opacity

The direct object is not the only complement that controls agreement. If there is an indirect object (marked by *-ru* or *-ta*), the verb agrees with it (4a)-(4b).

If the sentence has an oblique argument (i.e. a beneficiary with *-taki* or a possessor with *-na*), this oblique argument is the one that controls complement agreement, even if a direct or an indirect objects are present (5b)-(5c).[2]

(4a) *Juma-ru-w ch'uq alja-**:ma**.* (p. 211)
you-DAT-FOC potato.ACC sell-1/2.FUT
'I will sell potatoes to you.'

(4b) *Naya-t mayt'asiniway-**itu.*** (p. 214)
I-DAT borrow.on.way-3/1.AOR
'He borrowed it from me on his way.'

(5a) *Jupa-r ch'uq chura-**m.*** (p. 218)
her-DAT potato.ACC give-2/3.IMP
'You will give her the potatoes.'

(5b) *Naya-taki-w jupa-r ch'uq chura-rap-**ita:ta***. (p. 218)
I-BEN-TOP her-DAT potato.ACC give-BEN-2/1.FUT
'You will give her the potatoes for me.'

(5c) *Juma-taki-w jupa-t kis ala-rapi-**:ma.*** (p. 219)
You-BEN-TOP him-DAT cheese.ACC buy-1/2.FUT
'I will buy cheese from him for you.'

The generalization that arises from these examples is that there is a hierarchy for control of complement agreement in Aymara, specified in (6).

(6) **Complement agreement hierarchy**: Oblique > Indirect object > Direct object.

Causative constructions, however, do not strictly abide by this hierarchy, since not all oblique *-mpi* arguments control complement agreement. Aymara causatives are formed with the suffix *-ya*, which can be added to a nominal or to a verbal base. When the base is a verb, the actor of the verbal base is realized as an indirect object, marked by *-ru* (7a). If the verbal base already has a *-ru* complement, the actor is realized as a *-mpi* complement (7b).

(7a) *Juwanti-ru-y wayu-ya-m.* (p.214)
Juanito-DAT-HON carry-CAUS-2/3.imp
'make Juanito carry it.'

2.There must be a verbal affix for this to take place. Oblique complements may be present, but without the corresponding verbal suffix they are unable to control agreement.

(A) *Juma-r Pawlu-tak ch'uq alja-**:ma.*** (p. 219)
You-DAT Paul-BEN potato.ACC give-1/2.FUT
'I will give you the potatoes so that you take them to Paul.'

(7b) *Naya-w jupa-r* ***jupa-mp*** *t'ant' chura-**y**-ta.* (p.108)
I-TOP him-DAT her-ACT bread.ACC give-CAUS-1/3.AOR
'I made her give him bread.'

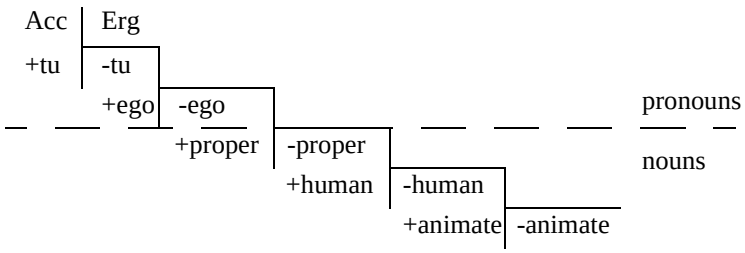
The *-ru* and *-mpi* complements are in competition to determine which one controls verbal agreement. Whichever of the two complements is 1st or 2nd person will win over a 3 person complement, regardless of their grammatical role in the clause. Compare examples (8a) and (8b)[3].

(8a) *Juwanti-x Mariya-mpi-w juma-r ch'uq chura-ya-**:tam***. (p. 222)
Juan-FOC María-ACT-TOP you-DAT potato.ACC give-CAUS-3/2.FUT
'Juan will make Maria give potatoes to you.'

(8b) *Juwanti-x juma-mpi-w Mariya-r ch'uq chura-ya-**:tam***. (p. 222)
Juan-FOC you-ACT-TOP you-DAT potato.ACC give-CAUS-3/2.FUT
'Juan will make you give potatoes to Maria.'

I argue that what determines the agreement facts in (8a)-(8b) is Silverstein's (1976) animacy hierarchy (9). When there is a choice as to which complement can control agreement, the one that is higher up in the animacy hierarchy is the controller. A similar analysis has been proposed for other cases of differential agreement (Comrie 1980).

(9) Silverstein's hierarchy



An issue that arises at this point concerns the failure of the animacy hierarchy to affect agreement in other cases. I argue that this is a case of MORPHOSYNTACTIC OPACITY. Opacity is a classic problem in the phonology-morphology interface. Phonological rules that apply in a certain derived environment fail to apply in a similar environment. Vowels in certain English roots, for instance, change

3.If neither agent or beneficiary is overtly expressed, a causative sentence may be ambiguous:

(A) *Juwanti-x ch'uq chura-ya-**:tam***. (p. 223)
Juan-FOC potato.ACC give-CAUS-3/2.FUT
'Juan will make someone/you give potatoes to you/someone.'

from tense to lax when some affixes are attached to the root. This happens in the pair *serene - serenity*. In other cases, however, vowels do not undergo laxing. The pair *eager - eagerness* illustrate the point. The theory of Lexical Phonology (Kiparsky 1982) explains opacity as a level ordering phenomenon. The affixes *-ity* and *-ness* are attached to their bases at different levels (or strata): *-ity*, a non-neutral suffix, at stratum 1, *-ness*, a neutral suffix, at stratum 2. At each level or stratum a different set of phonological rules may be active. Thus, laxing is not active at stratum 2.

Aymara complement agreement is opaque as well. Oblique complements introduced by the verbal suffixes *-rapi-* and *-raqa-* will always control agreement. This agreement rule fails to apply in the case of the oblique complement associated with the causative suffix *-ya-*. In this case, a rule based on Silverstein's animacy hierarchy determines agreement. I propose a level ordering solution to this problem. Suffixing of *-ya-* takes place at an earlier stage than suffixing of *-rapi-* or *-raqa-*. When *-rapi-* or *-raqa-* are added to the base, the newly created argument structure triggers an agreement rule that does not take into account the animacy hierarchy. Causative stems are not subject to this rule, since the changes in argument structure have already taken place at an earlier stage. A default agreement rule, based on the animacy scale, applies to causative stems at the postlexical level. I frame this analysis in a stratified version of Optimality Theory (Kiparsky 2000).

3 An OT account of agreement in Aymara

Recent work in Optimality Theory (Aissen 1999, Kiparsky 2001, Sharma 2001, Woolford 2001) seeks to account for the effects of Silverstein's animacy scale and other grammatical scales on different morphosyntactic phenomena (voice, case, etc.). Following on that line of work, I suggest that agreement in Aymara is determined by a ranked set of ordered constraints, based on a relational scale (10a) and a person scale (10b)[4].

(10a) Su > Obl > IO > DO
(10b) Loc(al) > 3

Agreement indices come to be associated with the features of the nominals they cross-reference. The scales in (10a)-(10b) determine a markedness hierarchy for agreement: It is more marked to agree with a DO than to agree with an IO. Subject agreement is the default, if there is to be any agreement at all. Like-

4.In the notational conventions I adopt here, *a* > *b* means that *a* outranks *b*. The person scale is just a simplification of Silverstein's animacy scale. The relational scale, however, departs from more familiar proposals, in which IO outranks Obl, and DO outranks IO (Perlmutter and Postal 1983, Carrier-Duncan 1985, Larson 1988). Motivation for a scale in which DO is the bottom member of the scale come from other work on argument linking (cf. Dowty 1991).

wise, it is more marked to agree with a third person than with a first or second person. These markedness relations can be captured in the following markedness constraint subhierarchies, where $*V_{i/X}$ means 'penalize verbs with indices bearing feature X'.

(11a) $*V_{i/DO} >> *V_{i/IO} >> *V_{i/Obl} >> *V_{i/Su}$
(11b) $*V_{i/3} >> *V_{i/Loc}$

Tableau 1 shows that the ranking in (11a) picks the candidate that agrees with the subject and an oblique argument as the optimal one. Candidates with IO or DO agreement are ruled out because they incur more severe constraint violations. Candidate (d) violates the constraint $*V_{i/Obl}$, as the winner candidate does, but (d) is less harmonic than (a) with respect to the higher constraint $*V_{i/IO}$. This ensures that the verb always agrees with the subject (cf. Woolford 2001 for a similar treatment of Nominative as the default case). The comparative, output-oriented nature of OT is illustrated quite clearly by Tableau 2. When there is no oblique, the winner is the candidate in which the verb agrees with the indirect object, in spite of the fact this candidate violates the same constraint that disqualified candidate (b) in Tableau 1. This is because in candidate set 2 there is no competing output that is more harmonic than (a) with respect to $*V_{i/IO}$. An analysis based on ranked violable constraints, then, captures the insight that a verb should agree with an oblique if there is one, or else with an IO, or else with a DO, but always with a subject.

Tableau 1: Agreement with Oblique

[NP NP-0 NP-ru NP-mpi V]	$*V_{i/DO}$	$*V_{i/IO}$	$*V_{i/Obl}$	$*V_{i/Su}$
☞ a. [NP_i NP-0 NP-ru NP-mpi_j $V_{i/j}$]			*	*
b. [NP_i NP-0 NP-ru_j NP-mpi $V_{i/j}$]		*!		*
c. [NP_i NP-0_j NP-ru NP-mpi $V_{i/j}$]	*!			*
d. [NP NP-0 NP-ru_j NP-mpi_i $V_{i/j}$]		*!	*	

Tableau 2: Agreement with IO

[NP NP-0 NP-ru V]	$*V_{i/DO}$	$*V_{i/IO}$	$*V_{i/Obl}$	$*V_{i/Su}$
☞ a. [NP_i NP-0 NP-ru_j $V_{i/j}$]		*		*
b. [NP_i NP-0_j NP-ru $V_{i/j}$]	*!			*
c. [NP NP-0_i NP-ru_j $V_{i/j}$]	*!	*		

Since person differences among complements do not affect agreement in the case of *-na* or *-taki*, the markedness constraints based on the person scale must

be inactive, i.e. they are dominated by the relational constraints in (11a). The ranking that results from this is R1 (12).

(12) R1: $*V_{i/DO}$ >> $*V_{i/IO}$ >> $*V_{i/Obl}$ >> $*V_{i/Su}$ >> $\mathbf{*V_{i/3}}$ >> $*V_{i/Loc}$

Ranking R1will not select the right candidate in the case of some causative sentences with *-mpi*, in particular when the IO is second or first person and the oblique 3rd (8a). The right result is obtained by re-ranking the markedness constraint *Vi/3, based on the person scale, so that it dominates $*V_{i/IO}$ (13). In this ranking, it is worse to agree with a third person than to agree with an indirect object. The competition is presented in Tableau 3.

(13) R2: $*V_{i/DO}$ >> $\mathbf{*V_{i/3}}$ >> $*V_{i/IO}$ >> $*V_{i/Obl}$ >> $*V_{i/Su}$ >> $*V_{i/Loc}$

Tableau 3: Agreement with Local person

NP-ru = 2, NP-mpi = 3	$*V_{i/DO}$	$*V_{i/3}$	$*V_{i/IO}$	$*V_{i/Obl}$	$*V_{i/Su}$
a. [NP_i NP-0 NP-ru NP-mpi_j $V_{i/j}$]		*!		*	*
☞ b. [NP_i NP-0 NP-ru_j NP-mpi $V_{i/j}$]			*		*

4 Opacity in OT syntax: a stratified account

The competitions and the constraints I am proposing are very simple, and they may be likely to be found in an introduction to OT syntax. What is unusual about my proposal is to have two different constraint rankings for the same language. This goes against globality and parallelism, two of the basic assumptions of Optimality Theory. As in other OT approaches to opacity, however, something has to give. Kiparsky (2000) proposes to address the problems that opacity poses to parallelism in OT by adopting a system of stratified constraint systems. His proposal avoids the introduction of new faithfulness constraints (i.e. Output/Output constraints, Paradigm Uniformity constraints, Sympathy constraints), while capturing the generalization that opaque processes are tied to the morphological structure of the word. Kiparsky's theory applies to the opaque interaction of stress, vowel deletion, and epenthesis in Levantine Arabic. I follow a similar approach to account for morphosyntactic opacity in complement agreement in Aymara.

A well-thought level ordering solution to an opacity problem cannot just introduce arbitrary levels for the purpose of having different cyclic rule orders. A generalization must be found regarding the status of the environments that trigger the rules. In lexical phonology, these generalization often make reference to 'natural' morphological strata (i.e. the stem, the word, and the postlexical level) and to the mutual precedence relations among affixes. Before spelling out the level ordering solution to the opacity problem in Aymara, I am going to show that affixing of the causative *-ya-* occurs at an earlier stratum than affixing of the benefactive *-rapi-* and the harmful *-raqa-*.

Aymara is an agglutinative language, in which a great number of suffixes can follow a root. In complex words like (14), *-ya-* always precedes *-raqa-* or *-rapi-*. *-Ya-*, unlike *-raqa-* or *-rapi-*, can be affixed to nominal stems to derive a verbal form (15b). In addition, causative verbs with *-ya-* can be nominalized by the derivational suffixes *-iri* 'agent' or *-wi* 'place' (16a)-(16b), but this does not seem to be possible for verbal bases with *-raqa-* or *-rapi-*.

(14)	*sar-ta-ya-raq-sma*		(p. 110)
	go-upward-CAUS-HARM-3/2		
	'wake yours up'		
(15a)	*suti*	'name'	
(15b)	*suti-ya-ña*	'christen'	(p. 108)
(16a)	*suti-y-iri*	'godfather/godmother'	(p. 191)
(16b)	*suti-ya-wi*	'baptism'	(p. 191)

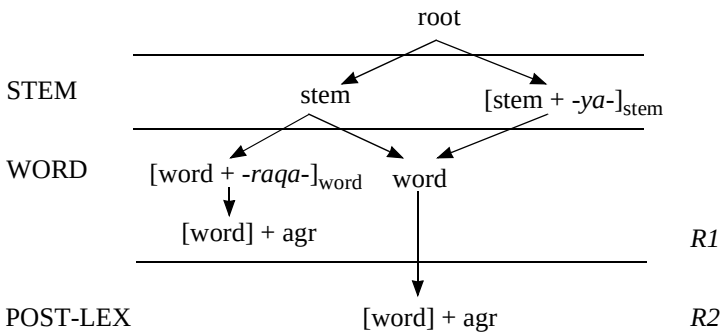
The conclusion is that *-ya-* is a stem-level suffix, while *-raqa-* and *-rapi-* are word-level suffixes. The relative order of the suffixes is explained by the assumption that words can be derived from stems, but not vice-versa. *-raqa-* and *-rapi-* can only derive verbs from verbs, a categorial constraint that is characteristic of verbal inflectional morphology. Finally, -ya- can interact with other stem level morphemes, while *-raqa-* and *-rapi-* cannot.

Causative, benefactive, and harmful suffixes have something in common: they are all associated with changes in the array of verbal complements at the syntactic level. The proposal that linguistic rules affecting the dependents of a sentence may belong to different strata or domains is not new. Wasow (1977) proposes a distinction between lexical and syntactic rules, to account for the contrast between adjectival passives and verbal passives. In collaboration with Jeffrey Runner (2001, 2003), I suggest that the opposition between lexical and syntactic rules can be formulated in a lexicalist theory. Since Bresnan's (1982) analysis of passives, lexicalist theories have abandoned the idea of syntactic derivations in favor of lexical redundancy rules. If sentences are projected from lexical heads, then changing the argument structure of a verb at the lexical level will result in a sentence with a new syntactic make-up. To keep Wasow's distinction alive, Runner and I suggest that there are different types of lexical rules, those that change the lexical semantic structure of a lexeme at the stem level (v.g. *spray/load* alternation), and those that alter the argument structure of a verb at the word level (v.g. dative shift). Aymara differential complement agreement offers additional evidence for the distinction. Alternations in verbal argument structure at the stem level trigger one type of agreement rule, while alternations at the word level trigger another type of agreement rule.

Causative morphology, then, derives a lexical item with an expanded number of complements at the stem level, while benefactive or harmful morphology expands the number of complements at the word level. Agreement features (i.e. indexing) are only appropriate for words. As the figure in (17) shows, candidates with agreement features specified can be evaluated at two different stages or

levels: at the word level itself, or at a postlexical level (which can be thought of as the constructional level). Each level has the same universal set of agreement constraints, which apply cyclically. The rankings, however, are different. At the word level, the constraint ranking is that in R1. Agreement constraints based on the relational scale dominate those based on the person scale. At the postlexical level the ranking is R2, where the constraint penalizing agreement with a third person complement has been promoted.

(17) A stratal model of Aymara agreement



A crucial assumption is that only forms that are derived at the word level can be evaluated at that level. Simple stems, and causative stems (derived at the stem level) will go through the word level underspecified for agreement. These forms will be specified for the 'default' agreement features at the postlexical level, according to R2. Words derived at the word level are specified for agreement at that level, and these features block the effect of R2 at the postlexical level. In other words, only those derived forms that change their argument structure at the word level will trigger agreement at the word level. This sort of DERIVED ENVIRONMENT effect is commonly found in lexical morphology. Simple stems and complex stems derived at a pre-word stage will not be subject to the agreement constraints at the word level.

Other attempts to account for morphosyntactic opacity in OT have relied mostly on the introduction of new constraints to preserve parallelism. Ackema and Neeleman (2001) develop such a model of OT to account for competitions between syntax and morphology in the building of linguistic structures. One of the problems they address is why compounds of the form *truck drive* are licensed by an affix, as in *[truck driv]-er*, but cannot appear as independent words, as in **Max truck drives*. They argue that syntactic operations take precedence over morphological operations. structure building at the morphological level violates the constraint in (18a). But this constraint may be overruled by the constraint in (18b)

(18a) NO MORPHOLOGY: Do not build structures in the morphological component.

(18b) PROJECTION PRINCIPLE: Respect selectional restrictions.

The presence of an affix in the input (in the case of *truck driver*) requires that structure be built at the morphological level to satisfy the Projection Principle. When an output candidate violates No Morphology for this reason, then other morphological structure-building operations (i.e. compounding) are free to apply. I believe an alternative analysis of these facts based on the idea of level ordering and cyclicity is preferable. A constraint allowing for compounds of the **truck-drive* sort is active (i.e. not dominated by a markedness constraint) at the morphological level, but not at the syntactic level. compounding is only possible, however, in a 'derived' environment, i.e. if the category of the verbal base changes as a result of affixing. The details of this analysis will have to be spelled out in another place, but this sketch shows how the approach I have developed for morphosyntactic opacity in Aymara can be extended to other cases.

5 Conclusion

I have shown that a stratified model of OT can account for opacity phenomena in morphosyntax with a minimal loss of parallelism. The generalization that drives this model is that in the grammar of Aymara complement agreement different constraints are activated depending on the level of the affix (stem-level or word-level) that introduces additional verbal complements. The constraints that I have proposed for complement agreement are based on familiar markedness scales of grammatical relations and animacy features. No additional constraints are needed in a stratified model of OT. At each stratum or level, candidates derived at that level are evaluated in parallel by the same set of constraints, with minimal differences in their ranking (this is OT's version of cyclicity). Aymara differential complement agreement, then, provides convincing evidence for a stratified model of OT.

References

Ackema, Peter, and Ad Neeleman. 2001. 'Competition between Syntax and Morphology.' In Géraldine Legendre, Jane Grimshaw, and Sten Vikner (eds.), *Optimality-Theoretic Syntax*. Cambridge, MA: MIT Press. 29-60.

Aissen, Judith. 1999. 'Markedness and Subject Choice in Optimality Theory.' *Natural Language and Linguistic Theory* 17. 673-711.

Aranovich, Raúl, and Jeffrey T. Runner. 2001. 'Diathesis Alternations and Rule Interaction in the Lexicon.' In K. Megerdoomian and L.A. Bar-el (eds.) *WCCFL 20 Proceedings*. Somerville, MA: Cascadilla Press. 15-28.

Bresnan, Joan. 1982. 'The Passive in Lexical Theory.' In Joan Bresnan (ed.), *The Mental Representation of Grammatical Relations*. Cambridge: MIT Press. 3-86.

Briggs, Lucy T. 1993. *El idioma aymara: variantes regionales y sociales.* La Paz:

Ediciones ILCA.
Büttner, Thomas Th. 1983. *Las lenguas de los Andes centrales: estudios sobre la clasificación genética, areal y tipológica*. Madrid: Ediciones Cultura Hispánica del Instituto de Cooperación Iberoamericana.
Carrier-Duncan, Jill. 1985. 'Linking of Thematic Roles in Derivational Word Formation.' *Linguistic Inquiry* 16. 1- 34.
Comrie, Bernard. 1980. 'Agreement, Animacy, and Voice.' In Gunter Brettschneider and Christian Lehmann (eds.), *Wege zur Universalien Forschung*. Tübingen: Gunter Narr Verlag. 229-234.
Dowty, David. 1991. 'Thematic Proto-Roles and Argument Selection.' *Language* 67. 547-619.
Hardman, Martha (ed.). 1981. *The Aymara Language in its Social and Cultural Context: A Collection of Essays on Aspects of Aymara Language and Culture.* Gainesville: University Presses of Florida.
Hardman, Martha, Juana Vásquez, and Juan de Dios Yapita. 1988. *Aymara: Compendio de estructura fonológica y gramatical*. La Paz: Instituto de Lengua y Cultura Aymara.
Kiparsky, Paul. 1982. 'Lexical Morphology and Phonology.' In Yang, I. S. (ed.) *Linguistics in the Morning Calm*. Seoul: Hanshin.
Kiparsky, Paul. 2000. 'Opacity and Cyclicity.' *The Linguistic Review* 17. 351-365.
Kiparsky, Paul. 2001. 'Structural case in Finnish.' *Lingua* 111, 315-376.
Lapointe, Steven. 1981. 'General and Restricted Agreement Phenomena.' In Michael Moortgat, Harry van der Hulst, and Teun Hoekstra (eds.), *The Scope of Lexical Rules*. Foris. Dordrecht; 125-159.
Larson, Richard. 1988. 'On the Double Object Construction.' *Linguistic Inquiry* 19. 335-391.
Perlmutter, David, and Paul Postal. 1983. 'Some Proposed Laws of Basic Clause Structure.' In David Perlmutter (ed.), S*tudies in Relational Grammar I.* University of Chicago Press, Chicago.
Runner, Jeffrey T. and Raúl Aranovich. 2003. 'Noun Incorporation and Rule Interaction in the Lexicon.' In Stefan Müller (ed.), *Proceedings of the HPSG-2003 Conference*. Stanford: CSLI Publications. 359-379.
Sharma, Devyani. 2001. 'Kashmiri Case Clitics and Person Hierarchy Effects.' In Peter Sells (ed.), *Formal and Empirical Issues in Optimality Theoretic Syntax.* Stanford: CSLI Publications. 225-256.
Silverstein, Michael. 1976. 'Hierarchy of features and ergativity'. In: Dixon, R. M. W. (ed.), *Grammatical categories in Australian languages*. New Jersey: Humanities Press. 112-171
Wasow, Thomas. 1977. 'Transformations and the Lexicon.' In Peter W. Culicover, Thomas Wasow, and Adrian Akmajian (eds.), *Formal Syntax.* New York: Academic Press. 327-360.
Woolford, Ellen. 2001. 'Case patterns.' In Géraldine Legendre, Jane Grimshaw, and Sten Vikner (eds.), *Optimality-Theoretic Syntax*. Cambridge: MIT Press. 509-543.

Raúl Aranovich
Department of linguistics
University of California Davis
One Shields Avenue
Davis, CA 95616
U.S.A.