

Explaining Syntactic Universals
(MARTIN HASPELMATH, LSA Institute, MIT, LSA.206, 19 July 2005)

1. Explanation in functional linguistics and in generative linguistics

1. Two very different approaches to explanation in linguistics

– the functional-typological ("Greenbergian") approach:

theory-neutral language-particular description
& system-external explanation of universals, based on performance regularities

– the generative ("Chomskyan") approach:

language-particular description based on a theory-specific metalanguage
& a constrained universal metalanguage as explanation

an example: article-possessor complementarity

- | | |
|---|--|
| <p>(1) a. English
 <i>the book</i>
 <i>(*the) my book</i></p> | <p>b. Italian
 <i>il libro</i> 'the book'
 <i>il mio libro</i> 'my book' (lit. ' the my book')</p> |
|---|--|

functional explanation: (cf. Haspelmath 1999a)
—possessed NPs are significantly more likely to be definite in discourse than non-possessed NPs (= performance regularity), so that the definite article is more predictable in such contexts
—in some languages (e.g. English) this redundancy is exploited, and the definite article is omitted when the possessor is present, whereas other languages (e.g. Italian) are consistent in coding definiteness and tolerate redundancy

generative explanation: (cf. Lyons 1986, Giorgi & Longobardi 1991)
—noun phrases consist of a determiner plus N'; the determiner position may only be filled once
—the determiner may be an article, demonstrative, possessive pronoun (*her, his, my, ...*), etc.
—possessive pronouns may be determiners (e.g. English) or adjectives (e.g. Italian):

- | | | | |
|--------|----|----|----|
| (2) a. | b. | c. | d. |
| | | | |

2. Basic goals of linguistics

3 descriptive goals, 3 explanatory goals:

—we want to **describe** particular languages in such a way that we can predict speaker behavior (**phenomenological description**, Chomsky's "observational adequacy")

—we want to **describe**/infer the mental system of rules underlying speakers' competence (**cognitive description**, Chomsky's "descriptive adequacy")

—we want to **describe**/infer the basic building blocks of the cognitive system that makes knowledge of language possible (the "**cognitive code**", Chomsky's "**Universal Grammar**")

—we want to **explain why** languages have the phenomenological/cognitive properties they do

—we want to **explain why** language acquisition is possible despite the poverty of the stimulus (Chomsky's "explanatory adequacy"/"Plato's Problem")

—we want to **explain why** the basic building blocks are the way they are (Chomsky's "beyond explanatory adequacy"/Minimalism)

— (and of course others, e.g. why do members of a community speak the same language(s)?)

Differences between generative and functional linguistics with respect to these goals:

(i) **Explanation of basic building blocks:**

of prime importance for Chomsky since the 1990s (but not for many other generative linguists); irrelevant for most other linguists, plays no role here

(ii) **Explanation of language acquisition:**

of prime importance for generative linguistics, much less important for functional linguistics (cf. Tomasello 2003); plays no role here

(iii) **Explanation of language properties:**

of prime importance for functionalists ("Why are languages the way they are?"); generativists largely reduce this to the description of Universal Grammar

(iv) **Description of the cognitive code/Universal Grammar:**

of prime importance for generative linguistics; functionalists tend to either deny the existence of Universal Grammar or regard this task as premature

(v) **Description of the cognitive system:**

of prime importance to generative linguistics (and to some functional linguists, cf. Langacker's "Cognitive Grammar"); many functionalists find this goal too difficult at present

(vi) **Phenomenological description:**

valued highly in the functional-typological approach; regarded as a trivial preliminary step by generativists

linguistics in comparison with other disciplines:

	linguistics (unit: language)	biology (unit: species)	chemistry (unit: compound)
phenomenological description	descriptive grammar	zoological/ botanical description	color, smell etc. of a compound
underlying system	"cognitive grammar"	description of species genome	description of molecular structure
basic building blocks	"cognitive code" (= elements of UG)	genetic code	atomic structure
explanation of phenomenology and system	diachronic adaptation	evolutionary adaptation	?
explanation of basic building blocks	biology (Chomsky: physics)	biochemistry	nuclear physics

Table 1. Basic goals of linguistics, biology and chemistry

(cf. Baker 2001 for the linguistics/ chemistry analogy)

—Linguistics is more like biology than like chemistry in that language structures undergo replication and selection (cf. Croft 2000), so **only the "fittest" languages survive.**

—Explanation of language properties is parallel to the explanation of properties of biological organisms: **evolutionary/diachronic adaptation** (Haspelmath 1999b, Nettle 1999, Ritt 2004, Blevins 2004).

—Description of the underlying system ("**mental/cognitive grammar**") is premature in linguistics; cf. genetics: the Human Genome Project would not have been possible without molecular methods.

—Description of the cognitive code ("Universal Grammar") is even more premature (imagine geneticists inferring the structure of DNA from inheritance patterns!)

—Phenomenological description is not easy, but possible. **It is sufficient for evolutionary explanation** (Darwin knew nothing about genetics and little about inheritance). Explanation in linguistics does not presuppose cognitive description (Haspelmath 2004).

—Both in biology and in linguistics, the attested structures fill only a tiny part of the space of options allowed by the basic building blocks. A vast number of **genetically possible organisms** do not exist because they would not survive (e.g. birds with a single wing, trees that shed their leaves in the spring). A vast number of **cognitively possible languages** do not exist because they would not serve their users' needs.

3. Types of explanation

(explanation = relief from puzzlement, = answering a *why*-question)

(A) Teleological explanation:

= identifying the motivation/goal of an action (Greek *télos* 'goal')

(3) "Why did you get a new TV?"

Answer: "So that I can watch the 2006 Soccer World Cup on a wide screen."

(B) Generalizing explanation

= showing that a phenomenon X is an instance of a more general phenomenon Y

(4) "Why is that police car blue and white?"

Answer: "All police cars in Boston are blue and white."

(5) "Why is *pluribus* in the ablative case in *E PLURIBUS UNUM*?"

Answer: "Because the preposition *e(x)* generally takes an ablative complement."

Latin:

e plur-ibus un-um

from many-ABL.PL one-NOM.SG.N

'Out of Many, One'

(6) "Why doesn't English allow **the my book* 'il mio libro'?"

Answer: "Because *my* and *the* are both determiners in English, and there can only be one determiner."

(C) Historical explanation

= identifying the previous event Y that led to a situation X

(7) "Why are there currently no living dinosaurs?"

Answer: "Because a large asteroid hit the earth in the late Cretaceous and altered the living conditions, so that they became extinct."

(explanation works only with the presupposition that new dinosaurs couldn't have arisen by other means)

(8) "Why does English have so many words that are similar to French words?"

Answer: "Because it adopted them from French after 1066."

(D) Generalizing-historical explanation

= showing that a phenomenon is a consequence of general constraints on historical change

(9) "Why are there no animals with wheels?"

Answer: Because "half a wheel" is not useful, and biological adaptation is an incremental process of which each stage must be adaptive.

—Generative explanation of English cooccurrence restriction:

(12) "Why doesn't English allow **the my book?*"

Answer: Because both *the* and *my* are determiners, and the determiner slot cannot be filled twice.

problems:

— Greater elegance / simplicity of the rule comes at the cost of introducing new categories. One could argue that Ockham's razor applies equally to categories.

— Elegance is the only criterion we can apply; standard linguistic techniques (speaker judgments, study of corpora) do not provide evidence either way.

— Position class description is not exhaustive, additional statements are needed anyway (cf. *both the children/both children*).

— We do not know whether speakers tend to adopt the most elegant systems in their mental grammars; much evidence shows that often they don't.

conclusion:

Linguists should spend less time worrying which description is *the true (cognitive) description*. It's hard enough to arrive at a *complete and correct* (phenomenological) description. (Cf. Croft 1998)

4.2. Explaining universal phenomena = "Constrained Description as Explanation"

(or: "Metalanguage as Theory", cf. Dryer 2005+a)

The quest for "explanatory adequacy" typically takes the form of new **constraints on the descriptive framework** (cf. standard objections to theories as "too powerful", "too unconstrained").

Ultimately, the descriptive framework should be able to describe **only the possible languages**. The descriptive framework must be innate (= Universal Grammar, otherwise there is no explanation).

"The next task [after constructing an explicit mental grammar, M.H.] is to explain why the facts are the way they are, facts of the sort we have reviewed, for example [e.g. binding phenomena, M.H.]. This task of explanation leads to inquiry into the language faculty. A theory of the language faculty is sometimes called universal grammar... Universal grammar provides a genuine explanation of observed phenomena. From its principles we can deduce that the phenomena must be of a certain character, given the initial data that the language faculty used to achieve its current state." (Chomsky 1988: 61-62)

"The problem that the principles and parameters framework seeks to solve is: How can a grammatical system be flexible enough to account for language variation while at the same time be, to a large extent, restricted in order to account for the relative ease of language acquisition and the impossibility of certain language types?" (Travis 1989:263)

That is, the universals should "fall out" from the framework (=the model of UG).

Unattested languages are cognitively impossible languages (cf. Newmeyer 2005:§3.3)

(A) First example: possessives and definite articles across languages

three out of four logically possible language types are attested:

Figure 2.

		<i>in possessed NP</i>	
		no article	article
<i>in non-possessed NP</i>	article	English Ø <i>my book</i> <u>the</u> <i>book</i>	Italian <u>il</u> <i>mio libro</i> <u>il</u> <i>libro</i>
	no article	Russian Ø <i>moja kniga</i> Ø <i>kniga</i>	—

(*Anti-English:
the *my book*
Ø *book*)

Universal 2:

(UA#1294)

If in a language a definite possessed NP has the definite article, then a definite non-possessed NP also has the definite article.

(Haspelmath 1999a:234)

—Generative explanation of the universal:

- (13) "Why aren't there languages (say, "Anti-English") that use the definite article only when a possessive is present?"
Answer: Because UG allows possessives to be determiners or adjectives, and allows only one item in the determiner slot. Anti-English would not be acquirable by children (Lyons 1986, Giorgi & Longobardi 1991).

(B) Second example: X-bar Theory

Observation: gaps in attested patterns -- some describable structures don't exist.

- (14) NP --> D [_N N PP] *the* [*horse on the meadow*]
 VP --> Adv [_V V NP] *often* [*eats a flower*]
 PP --> Adv [_P P NP] *right* [*under the tree*]

(but not e.g. *NP --> VP [Adv P])

Redundancy needs to be "expressed" in the descriptive framework:
 only phrase structures of the following type are allowed:

- (15) XP --> Y [_X X ZP] (**X-bar schema**, Jackendoff 1977 etc.)

Claim: The non-existence of the unattested structures has been "explained" by the new, "more restrictive" framework.

- (16) "Why don't some languages have rules like "NP --> VP P"?"
 *Answer: Because such structures are not describable by the framework.
Answer: Because the X-bar schema is part of Universal Grammar, i.e. such rules would not be acquirable.

(Without the innateness claim, there is no explanation here.)

(C) Third example: Inflection outside derivation

Observation: gaps in attested patterns -- some describable structures don't exist.

- | | | | | |
|------|-----------------|------------------|-------------|--|
| (17) | ROOT-deriv-infl | *ROOT-infl-deriv | e.g. German | <i>Handl-ung-en</i> |
| | infl-deriv-ROOT | *deriv-infl-ROOT | e.g. Arabic | <i>ya-ta-kallamu</i>
3sg-REFL-speak |

Redundancy needs to be "expressed" in the descriptive framework: only morphological structures with inflection outside derivation are allowed, because **derivation is lexical, and inflection is in a post-lexical syntactic component** (Anderson 1992).

(Again, this architecture must be innate, because otherwise no explanation has been achieved.)

(D) Fourth example: Pro-drop of topical arguments

Observation: gaps in attested patterns -- some describable structures don't exist.

- | | | |
|-----------------------------------|---------|--|
| no pro-drop when pronoun = topic: | English | (<i>She comes./*</i> ∅ <i>comes.</i>) |
| pro-drop when pronoun = topic: | Italian | (∅ <i>viene./*</i> Lei <i>viene.</i>) |
| no pro-drop when pronoun = focus: | English | (<i>SHE comes./*</i> ∅ <i>comes.</i>), |
| | Italian | (<i>LEI viene./*</i> ∅ <i>viene.</i>) |
| pro-drop when pronoun = focus: | | (unattested) |

Redundancy needs to be "expressed" in the descriptive framework: only the constraint DROPTOPIC exists, no constraint DROPFOCUS exists (Grimshaw & Samek-Lodovici 1998). OT constraint tableaux:

(18) English

she _{TOPIC} comes	FAITHFUL	DROPTOPIC
☞ <i>she comes</i> ∅ <i>comes</i>	*!	*

(19) Italian

she _{TOPIC} comes	DROPTOPIC	FAITHFUL
☞ <i>lei viene</i> ☞ ∅ <i>viene</i>	*!	*

4.3. Evaluation

good: the generative mode of explaining universals often makes clear testable predictions

less good: the generative mode of explaining language-particular phenomena usually does not lead to clear testable predictions

general problem for explanation of universals:

– Presupposes that categories like "determiner", "verb phrase", "inflection" can be applied cross-linguistically, while in practice that is often very difficult (see Croft 2001).

specific problems:

– There are often competing functional explanations available whose predictions fit the cross-linguistic data better (for (A): Haspelmath 1999; for (C): Bybee 1985).

– The universals discussed in generative work are often empirically shaky.

(e.g. "Kayne's generalization", that clitic-doubled objects must be preceded by a preposition, holds for Spanish (*Lo vimos a Juan* 'We saw Juan'), but not e.g. for Greek.

5. Digression on the term "theory"

(see Dryer 2005+a, 2005+b)

(A) Explanatory theories = theories that answer *why*-questions
(example: functionalist theories; the theory of Universal Grammar)

(B) Descriptive theories = theories that consist of abstract models of the object of study
e.g. grammatical descriptions of individual languages that strive for cognitive reality; a cognitive grammar of Italian can be thought of as a "theory of the competence of Italian speakers"

(C) Meta-descriptive theories = theories that produce concepts for descriptive theories
e.g. grammatical frameworks such as LFG, HPSG, RRG, GB, FG, Cognitive Grammar, but also:
"Basic Linguistic Theory":

"The expression "basic linguistic theory" (following R. M. W. Dixon) refers to the theoretical framework that is most widely employed in language description, particularly grammatical descriptions of entire languages. It is also the framework assumed by most work in linguistic typology. ... Basic linguistic theory differs from many other theoretical frameworks in that it is not a formal theory but an informal theory. That is, many grammatical phenomena can generally be characterized with sufficient precision in English (or some other natural language), without the use of formalism." (From Matthew Dryer's website, <http://wings.buffalo.edu/soc-sci/linguistics/people/faculty/dryer/dryer/blt>)

—Note that in generative linguistics, "linguistic theory" is often used **both for (A) and for (C) at the same time**, i.e. for a theory of the innate cognitive prerequisites for grammar and the metalanguage for describing languages. It is assumed that the metalanguage that gives the best language-particular descriptions (theories in sense (B)) can be equated with the innate cognitive code for grammar.

—Since it is multiply ambiguous, I avoid the term "theory".

I replace	"explanatory theory"	by	"explanation"
	"descriptive theory"	by	"description"
	"meta-descriptive theory"	by	"descriptive framework"

—I retain "theoretical linguistics" when it contrasts with "applied linguistics", i.e. it includes "descriptive linguistics" (= the branch of theoretical linguistics that aims at phenomenological descriptions, not cognitive descriptions).

6. Explanations in the functional-typological approach

6.1. Explaining speaker behavior: phenomenological grammars & social function of language

cognitive grammars would be even better, but currently they are not a realistic goal (cf. Croft 1998); speakers try to adhere to subtle social norms

6.2. Explaining properties of languages

—**adaptive evolutionary explanation, generalizing-historical:**

Starting point: Grammars are **efficient** instruments for communication, **well-designed** for their purpose of speaking and understanding.

But how can we explain this good design? Language was not created purposefully by a benevolent creator.

Diachronic change is the necessary link between patterns of language use and grammatical structures (cf. Bybee (1988), Keller (1994), Kirby (1999), Nettle (1999) and related work (cf. also Haspelmath 1999b)).

Speakers do not intend to create well-designed grammars, but they behave purposefully and rationally in selecting from available variants and in creating new variants – they mostly opt for the most useful variants for their particular purposes. Through an invisible-hand process in **language change**, the cumulative effect of many individuals' behavior leads to useful language structures (cf. Keller 1994).

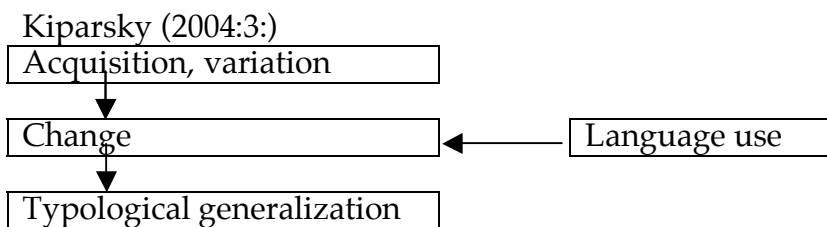
—The two basic motivating factors are the speaker's need to save production energy (**economy**) and the hearer's need to save comprehension energy (**distinctiveness**). Neither is absolute, but each need is limited by the other (*economy*: say as little as you can; *distinctiveness*: say as much as you must). (This is not unlike the Gricean maxims, cf. Levinson 2000.)

—Since functional explanations only appeal to universal factors, **only universal patterns can be explained** (language-particular patterns are historical accidents that can be described but not explained in a deeper sense)

—The language-particular descriptions that are the basis for universals must be sufficient to account for speaker behavior, i.e. all productive patterns must be captured (= **phenomenological descriptions**). Further generalizations are not necessary (Haspelmath 2004).

i.e. hyper-general concepts such as "determiner", "head / dependent", "inflection / derivation" are not required

—the **metalanguage of description does not matter**; special notational conventions do not seem to be of much help, basic linguistic theory seems sufficient (Dryer 2005+b)



6.3. A concrete example: alienability contrasts

Universal 3:

If a language uses an overt marker for possessive constructions with inalienable possessum nouns (kinship or body part terms), it also uses an overt marker with other (i.e. alienable) nouns.

	inalienable possessum	alienable possessum
(20) Abun	<i>Sepenyel gwes</i> Sepenyel leg 'Sepenyel's leg'	<i>Sepenyel bi nggwe</i> Sepenyel of garden 'Sepenyel's garden' (Berry & Berry 1999)
(21) Maltese	<i>id Sandro</i> hand Sandro 'Sandro's hand'	<i>il-ktieb ta' Sandro</i> the-book of Sandro 'Sandro's book' (Koptjevskaja-Tamm 1996)
(22) Maricopa	<i>'iipaa ime</i> man leg 'the man's leg'	<i>'iipaa ny-hat</i> man POSSD-dog 'the man's dog' (Gordon 1986:31-2)
(23) Tauya	<i>ya-neme</i> 1SG-head 'my head'	<i>ŋite ya-pi</i> garden I-GEN 'my garden' (MacDonald 1990:129-31)

Functional (usage/frequency/economy-based) explanation:

Inalienable nouns occur in a possessive construction more often than alienable nouns (NICHOLS 1988:579). (I.e. in inalienable nouns, a higher proportion of the occurrences is in possessive constructions than in alienable nouns.) For this reason, their possessive use is more expected (= predictable) by hearers, so speakers can afford to economize on inalienable constructions and not to use an overt coding element.

Figure 3.

		<i>with inalienable possessum:</i>		
		no marker	overt marker	
<i>with alienable possessum</i>	overt marker	Maltese <i>id Sandro</i> <i>il-ktieb ta' Sandro</i>	English <i>Sandro's hand</i> <i>Sandro's book</i>	
	no overt marker	Haitian Creole <i>bra Ø Sandro</i> <i>liv Ø Sandro</i>	—	(*Anti-Maltese: <i>hand of Sandro</i> <i>book Sandro</i>)

Two basic functional motivations:

speaker's point of view: **economy** ("say as little as possible")
 hearer's point of view: **explicitness** ("say as much as necessary")

Three basic coding types:

explicit coding: English
(explicit, not economical)

efficient coding: Maltese
(partly explicit, partly economical;
economical where high predictability)

zero coding: Haitian Creole
(economical, not explicit)

*anti-efficient coding: (*Anti-Maltese)
(partly explicit, partly economical;
economical where low predictability)

6.4. Frequency asymmetries

The usage-based explanation presupposes that there is a significant frequency asymmetry between alienable nouns and inalienable nouns.

Is this presupposition correct?

A very preliminary corpus search, looking at six possibly representative nouns (British National Corpus, 100,000,000 words):

	unpossessed	possessed
alienable: <i>chair, knife, newspaper</i>	11,869	2,908
inalienable: <i>sister, daughter, uncle</i>	8,373	11,303

Figure 4

$p < 0.001$

	POSSESSED	UNPOSSESSED
<i>chair</i>	2330	5029
<i>knife</i>	293	2296
<i>newspaper</i>	285	4544
<i>sister</i>	3902	3248
<i>daughter</i>	6080	3099
<i>uncle</i>	1324	2026

Further prediction based on the frequency asymmetry: The coding contrast need not be **overt-zero**, but can be **long-short**, **free-affixed**, or **separated-fused** (because more frequent elements have a higher chance of being reduced and fused, Bybee 2003)

(24)	inalienable construction	alienable construction
a. Nakanai (Johnston 1981:217)	<i>lima-gu</i> hand-1SG 'my hand'	<i>luma taku</i> house I 'my house'
b. Hua (Haiman 1983:793)	<i>d-zaʔ</i> 1SG-arm 'my arm'	<i>dgaiʔfu</i> I pig 'my pig'
c. Ndjébbana (McKay 1996:302-6)	<i>nga-ngardabbámba</i> 1SG-liver 'my liver'	<i>budmánda</i> <i>ngáyabba</i> suitcase I 'my suitcase'
d. Kpelle (Welmers 1973:279)	<i>m-pôlu</i> 1SG-back 'my back'	<i>ŋa pɛɾɛi</i> I house 'my house'
e. Lakhota (Buechel 1939:103)	<i>ina/nihu/huku</i> 1SG.MOM / 2SG.MOM / 3SG.MOM 'my mother / your m. / his m.'	

6.5. From teleological to evolutionary explanation

Strictly speaking, the explanation given above is teleological ("speakers can afford to economize on inalienable constructions and not to use an overt coding element").

But speakers aren't economizing – they are just following the rules of their language. Not all languages allow an economical coding type. So how do we get from speakers' purposeful actions to their grammars? How do we get from teleological to evolutionary explanation?

Answer: through language change, which happens because of speakers' actions in language use. The locus of language change is not language acquisition, but adult language use (Croft 2000). Speakers' preferences in language use determine the general direction of language change.

6.5.1. Conservative retention

from pre-Maltese to Maltese:

(25) *yadu Sandro* *kitaabu Sandro*
 hand Sandro book Sandro

→ **innovation:** introduction and spread of a new circumlocutory construction:

(26) *yadu Sandro* *al-kitaabu mataaflu Sandro*
 the-book possession Sandro
 'the book, Sandro's possession = Sandro's book'

(27) *id Sandro* *il-ktieb ta' Sandro*

This new circumlocutory construction has (basically) the same meaning as the old construction. As it becomes more frequent, it shows more and more formal signs of grammaticalization (cf. Haspelmath 1999c). In particular, the noun *mataaflu* loses all its nominal properties and is shortened to *ta'*.

This new construction finally comes to fully replace the old construction (**ktieb Sandro* is no longer possible), except in cases of inalienable possession. Why? Because with inalienable nouns, possession is highly predictable, so that a special overt marker of possession is not felt to be necessary by speakers. For this reason, language change is **inhibited** in this context (cf. Dahl & Koptjevskaja-Tamm 1998).

6.5.2. Innovative reduction and fusion

Nichols 1988:579:

"A single dichronic process appears to motivate all of the attested patterns involving 'alienability': tighter bonding of possessive affixes to nouns, and earlier lexicalization of possession, take place with those nouns which are most often possessed..."

(28) a. Old Italian

<i>mogli</i>	-	<i>ma</i>	<	<i>mulier</i>	<i>mea</i>	'my wife'
<i>fratel</i>	-	<i>to</i>	<	<i>fratellus</i>	<i>tuus</i>	'your brother'
* <i>terra</i>	-	<i>ma</i>		(cf. <i>terra</i>	<i>mea</i>)	'my land' (> <i>terra mia/mia terra</i>)

b. Nyulnyul (Nyulnyulan; northern Australia; McGregor 1996):

<i>jan</i>	<i>yil</i>	vs.	<i>nga-lirr</i>	(< <i>ngay lirr</i>)
I.OBL	dog		1SG-mouth	I mouth
'my dog'			'my mouth'	

Possession forms in inalienable possession get reduced more than possessive forms in alienable possession because they are more predictable and hence speakers can afford to reduce the articulatory effort. As more and more speakers do this, the language changes.

Both *conservative retention* and *innovative reduction/fusion* lead to patterns in which the inalienable forms are shorter than the alienable forms, i.e. efficient coding patterns.

7. Conclusion

- The generative and functional-typological approaches are **very** different.
- The difference is not that functionalists reject the autonomy of grammar (Newmeyer 1998) or the usage/grammar distinction (Newmeyer 2003).
- The difference is that
 - (i) generativists seek typological explanations in **restrictive frameworks that are assumed to be innate**, while
 - (ii) functionalists seek typological explanations in **regularities of language use that get grammaticalized**.
- Both could be right, for different empirical domains.

Kiparsky 2004:	"structure explains change"	"change explains structure"
e.g.	- split ergative case-marking	- simple/complex reflexives
	- other D-hierarchy effects	- nominative anaphors
	- coda neutralization	
	- sonority hierarchy	

- So let's compare the two approaches, in Kiparsky's spirit.

Appendix: alternative functional explanations for the alienability universal

(i) iconic explanation

A general iconicity principle says that meanings that belong together more closely semantically are expressed by forms that show less linguistic distance. Inalienable possession exhibits greater semantic closeness than alienable possession, and this is reflected in less linguistic distance (Haiman 1983, 1985), e.g. juxtaposition.

(ii) conceptual explanation

Inalienable concepts cannot be conceived of without a possessor, so that the possessive relation is **inherent** in their meaning. Therefore zero-coding is sufficient for inalienables.

problems

—with the iconic explanation: The coding element does not always come between the possessor and the possessee:

	alienable construction	inalienable construction
(29)		
a. Puluwat (Elbert 1974:55, 61)	<i>nay-iy hamwol</i> poss-1SG chief 'my chief'	<i>pay-iy</i> hand-1SG 'my hand'
b. 'O'odham (Zepeda 1983)	<i>ñ-mi:stol-ga</i> 1SG-cat-POSSD 'my cat'	<i>ñ-je'e</i> 1SG-mother 'my mother'
c. Koyukon (Thompson 1996: 654, 667)	<i>se-tel-e'</i> 1SG-socks-POSSD 'my socks'	<i>se-tlee'</i> 1SG-head 'my head'
d. Achagua (Wilson 1992)	<i>nu-caarru-ni</i> 1SG-car-POSSD 'my car'	<i>nu-wíta</i> 1SG-head 'my head'

—with the conceptual explanation: It's not actually clear that inalienable concepts cannot be conceived of without a possessor. In many languages, one can talk about the problems of "first-born sons" and "single fathers", and in most languages one can talk about cut-off limbs whose possessor is unknown. These situations are non-standard, they are unusual (i.e. they are not frequent), but they present no conceptual problem.

hence: **the usage-based explanation is the correct explanation**

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