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Against iconicity and markedness

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1. Goals

Some tasks of theoretical linguistics:

	cf. biology:
• phenomenological description of a language	• phenotypical description of a species
• cognitive description of a language	• description of the genome of a species
• description of the cognitive code for language (= Universal Grammar)	• description of the genetic code
• (evolutionary) explanation of (phenomenological) universals	• (evolutionary) explanation of phenotypical universals

disagreement about the fourth task:
Should universals be explained on the basis of the cognitive code, or should they be explained by a (diachronic/adaptive) evolutionary theory?
(for the former: Chomsky 1995: 6, Baker 2001, etc.; for the latter: Bybee 1988, Newmeyer 1998, Haspelmath 1999a, Hale & Reiss 2000, Blevins 2003+, etc.)

How do the notions of **iconicity** and **markedness** fit into this picture?

	iconicity	**markedness**
a phenomenological notion?	NO	NO
a cognitively represented notion?	NO	e.g. Jakobson 1932
part of the cognitive code (= UG)?	e.g. Aissen 2003+	e.g. Chomsky & Halle 1968, McCarthy 2002
part of an explanatory theory?	e.g. Haiman 1985, Croft 1990	e.g. Wurzel 1994

Three related claims of this talk:

- The fundamental explanatory factors in grammatical research are (I) **processing preferences** (minimization of coding effort: **economy**, and minimization of decoding effort: **distinctiveness**, **parsability**), and (II) speakers' **conceptual-pragmatic preferences** for certain referents in language use (e.g. talking more about present situations than about future situations).
- The terms "iconicity" and "markedness" are **multiply polysemous**, and for practical purposes, it is impossible to establish a common core meaning.
- Some of the most widely discussed senses of "iconicity", and most of the senses of "markedness", are superfluous. **The term "markedness" should be abandoned, and the term "iconicity" should be used with restraint**.

2. Seven kinds of iconicity

"The intuition behind iconicity is that the structure of language reflects in some way the structure of experience." (Croft 2003:102)

A. **Iconicity of sound** (onomatopoeia; speech sound is similar to denoted sound, e.g. *hiss, boom, meow, twitter*)
B. **Iconicity of sequence** (sequence in speech is identical to sequence of actions, e.g. *I came, I saw, I conquered*)
C. **Iconicity of adjacency** (connected concepts are expressed by adjacent constituents)
D. **Iconicity of scope** (earlier elements take wider scope, Newmeyer 1992:763)
E. **Iconicity as syntagmatic isomorphism** ("one-meaning-one-form", i.e. no unexpressed meanings, no meaningless forms)
F. **Iconicity as correspondence of markedness/complexity** (marked / complex meanings receive marked / complex coding)
G. **Iconicity of cohesion** (i.e. distance and independence: linguistic cohesion mirrors conceptual cohesion)

How can iconicity be part of an explanatory theory?

Lee 2001 is typical in limiting himself to providing a mere quantitative observation, with no claim of explanatory value:

> "The traditional view of language is that most relationships between linguistic units and the corresponding meanings are arbitrary... But the cognitive claim is that the degree of iconicity in language is much higher than has traditionally been thought to be the case."

But cf. Croft 1990:164:

> "The structure of language is therefore motivated or explained by the structure of experience to the extent that the two match."

But why should linguistic form and linguistic content match? Are iconic signs/sign complexes better for the sign users?

Dressler et al. 1987:17: "Icons are the most natural signs." (because they are easier to process)
Givón 1985:189: "All other things being equal, a coded experience is easier to store, retrieve, and communicate if the code is maximally isomorphic to the experience".
Hawkins 1997, 2002: **adjacency** and **scope** universals are explained with reference to parsability
syntagmatic isomorphism is straightforwardly (and uncontroversially) motivated by economy and distinctiveness

Thus, "iconicity" can be reduced to economy, distinctiveness and parsability; **there is no need for an independent notion of iconicity** (especially not a notion of iconicity that is somehow in competition with economy).

3. Iconicity as correspondence of markedness/complexity

3.1. Quotations

markedness

Mayerthaler 1987:48-9: If a semantically more marked category is encoded as formally more marked than a less marked category, the encoding is said to be iconic.

Givón 1995:58: "[The meta-iconic markedness principle:] Categories that are *cognitively* marked tend also to be *structurally* marked."

Aissen 2003+:§3: "Iconicity favors the morphological marking of syntactically marked configurations."

complexity

Newmeyer 1992:763: "[Iconicity of complexity:] Marked forms and structures are typically both structurally more complex (or at least longer) and semantically more complex than unmarked ones.

Haspelmath 1993:87: "The formally derived (or marked) words are generally also semantically derived in that they have some additional meaning element that is lacking in the formally basic (or unmarked) word. This correlation... has been identified as an instance of diagrammatic iconicity."

3.2. Examples:

	less marked/complex	**more marked/complex**
number	singular (*tree-Ø*)	plural (*tree-s*)
case	nominative (*homo-Ø*)	accusative (*homin-em*)
tense	present (*play-Ø*)	past (*play-ed*)
person	third (*canta-Ø*)	second (*canta-s*)
causation	non-causative (Turkish *düs-Ø-mek* 'fall')	causative (*düs-ür-mek* 'fell, drop')
object	inanimate (Spanish *Veo la casa* 'I see the house'	animate *Veo a la niña.* 'I see the girl.')

3.3. My explanation

All of these instances are in fact **economically motivated**, because the "less marked / less complex" member of the opposition is **more frequent**. If two (or more) meanings are in opposition, it is economical to omit marking from the most frequent member, cf. also

e-mail addresses:	bartolli@latrobe.edu.au khadija@stanford.edu.Ø	
phone numbers:	my home number:	-49-341-9801616
	(within Germany:)	Ø-341-9801616
	(within Leipzig:)	Ø-Ø-9801616

3.4. The causative-inchoative alternation: Economy instead of iconicity

(Haspelmath 1993)

puzzle: the apparent counter-iconicity of **anticausatives**:

Russian	*otkryvat'* 'cause to open'	*otkryvat'-**sja*** 'open (intr.)'

Observation in Haspelmath 1993 (cf. also Croft 1990b):
different verb meanings behave differently across languages:
preferably coded as **causatives**: 'freeze', 'dry', 'sink', 'go out', 'melt', etc.
(*spontaneous*, "internally caused", Levin & Rappaport Hovav 1995)
preferably coded as **anticausatives**: 'split', 'break', close', 'open', 'gather', etc.
(*agent-caused*, "externally caused", Levin & Rappaport Hovav 1995)

Saving the iconicity hypothesis:

> "Iconicity in language is based [not on objective meaning but] on conceptual meaning... Events that are more likely to occur spontaneously will be associated with a conceptual stereotype (or prototype) of a spontaneous event, and this will be expressed in a structurally unmarked way." (Haspelmath 1993:106-7)

Simpler explanation:
Internally caused verb meanings occur **more frequently** as inchoatives; externally caused verb meanings occur **more frequently** as causatives. Due to economic motivation, the rarer elements tend to be overtly coded.

3.5. Differential object marking: Economy instead of iconicity
(Aissen 2003+)

Observation (Blansitt 1973, Comrie 1981, Bossong 1985, 1998, etc.):
The higher a direct-object is on the animacy scale, the more likely it is to be overtly coded (i.e. accusative-marked).

> Comrie 1989:128: "...the most natural kind of transitive construction is one where the A[gent] is high in animacy and definiteness and the P[atient] is lower in animacy and definiteness; and any deviation from this pattern leads to a more marked construction."

Aissen 2003+:§3 proposes a constraint subhierarchy involving local conjunction of a "markedness hierarchy" of relation / animacy constraints with a constraint against non-coding (*$Ø_{CASE}$):

"markedness subhierarchy":
*OBJ / HUM >> * OBJ / ANIM >> *OBJ / INAN

local conjunction with *$Ø_{CASE}$:

*OBJ / HUM & *$Ø_{CASE}$ >> * OBJ / ANIM & *$Ø_{CASE}$ >> *OBJ / INAN & *$Ø_{CASE}$

> "The effect of local conjunction here is to link markedness of content (expressed by the markedness subhierarchy) to markedness of expression (expressed by *Ø). That content and expression are linked in this way is a fundamental idea of markedness theory (Jakobson 1939; Greenberg 1966). In the domain of Differential Object Marking, this is expressed formally through the constraints [shown immediately above]. Thus they are ICONICITY CONSTRAINTS: they favor morphological marks for marked configurations." (Aissen 2003+)

Simpler explanation:
Inanimate NPs occur **more frequently** as objects; animate NPs occur **more frequently** as subjects. Due to economic motivation, the rarer elements tend to be overtly coded.

3.6. The general lesson: complementary coding preferences ("markedness reversal") are best explained by economy

cf. even singular / plural, counter-iconic marking
German *Eltern* 'parents', *Eltern-teil* 'parent' (Wurzel 1994:2592)
parents is more frequent than *parent*! (BNC [Leech et al. 2001]: 163 vs. 37)

Haiman 1994:1632: "The phenomenon of markedness reversal indicates that markedness is context sensitive. What is **marked by more complex form** is therefore never **a more complex concept** but **a more surprising one**, given the context."

A concept is "**surprising**" if it **occurs rarely**.

4. Iconicity of cohesion

4.1. Quotation: Haiman 1983:782-3:
"– The linguistic distance between expressions corresponds to the conceptual distance between them.
– The linguistic separateness of an expression corresponds to the conceptual independence of the object or event which it represents."

claim: if two structures occupy different positions on the *cohesion scale*
"X *w* Y – X Y – X-Y – Z"
(function-word expression, juxtaposition, boundness, portmanteau expression)
and differ in conceptual distance and / or conceptual independence, then the more cohesive structure shows less conceptual distance and / or independence

4.2. Examples

	less cohesive	**more cohesive**	
causative	*cause **to** die*	*kill*	(Haiman 1983)
coordination	*mother **and** her uncle*	*mother-father*	(Wälchli 2003)
possession	Nakanai *luma taku*	*lima-gu*	(Haiman 1983)
	'house my'	'hand.my'	
	Kpelle *kâloN NO pErEi*	*kâloN pôlu*	
	'chief 's house'	'chief back, i.e. 'chief's back'	
reflexive	Russian *On utomil sebja.*	*On utomil-sja.*	(Haiman 1983)
	'He exhausted himself.'	'He became exhausted.'	
complement clause	*I want you **to** go.*	*I wanna go.*	(Givón 1990:560)

4.3. Economy instead of iconicity

• In all these cases, **the more cohesive expression type is more frequent** (cf. terms like "natural coordination", "naturally reciprocal / reflexive")

some very preliminary frequency figures:

	possessed	unpossessed	
inalienable noun	52%	48%	
alienable noun	3%	97%	cf. Haspelmath 2003

complement clause	different-subject 'want'	same-subject 'want'	
	13%	87%	cf. Haspelmath 1999b
causative	*cause to die*	*kill*	
	(*cause* = 220 vs.	157)	cf. Leech et al. 2001

• **Frequency differences often give rise to cohesion scales** of the type
"X *w* Y – X Y – X-Y – Z",
for well-understood reasons:
high frequency leads to phonological fusion, and suppletive stems are more easily remembered if they occur with high frequency
e.g.

comparatives	*more arid*	*dri-er*	*worse*
past tense		*play-ed*	*went*
negation	*doesn't see*	*has-n't*	
gender	*lady doctor*	*actr-ess*	*nun*

In all these cases, iconicity does not seem to be relevant.

• The rarer structures commonly do not show **greater distance**, but just **greater length**. Here **economy makes the right prediction**, iconicity of distance makes the wrong prediction.

possession:
-- sometimes the marker of alienable possession does not occur between the possessor and the possessum:

e.g. Maricopa	*m-**ny**-hat*	*m-iishaaly*
	2-POSSD-dog	2-hand
	'your dog'	'your hand'
vs. 'O'odham	*ñ-mi:stol-**ga***	*ñ-je'e*
	1SG-cat-POSSD	1SG-mother
	'my cat'	'my mother'

-- sometimes there is a special marker on inalienable nouns, but only when they are unpossessed:

e.g. Koyukon	***k'e**-tlee'*	*se-tlee'-Ø*
	UNPOSS-head	1SG-head-POSS
	'head'	'my head'

same-subject vs. different subject complement clauses of 'want':
-- sometimes the verb 'want' is shorter in SS constructions:
(10) Samoan (Oceanic) (Mosel & Hovdhaugen 1992:710, 714)

(SS)	*e*	*fia*	*si'i*	*e*	*Leona*	*Iosefa*	'Leona wants to carry Iosefa.'				
	GEN	want	carry	ERG	Leona	Iosefa					
(DS)	*e*	*le@*	*mana'o*	*le*	*teine*	*e*	*fasi*	*ia*	*le*	*tama*	
	GEN	NEG	want	ART	girl	[GEN	hit	she	ART	boy	
	'The girl doesn't want the boy to hit her.'										

-- sometimes the complementizer is shorter or missing in SS constructions
-- sometimes only the SS construction is possible in the language

5. Seven kinds of markedness

widespread assumption, often made with little reflection: there is a common core meaning of markedness, some kind of underlying intuition

A. **Markedness as overt coding**

e.g. "In English present-tense verbs, the 3rd person singular is marked (by *-s*, e.g. *sing-s*), whereas other person-number forms are unmarked."

unproblematic, but perhaps better: ***overtly coded*** vs. ***uncoded***

B. **Markedness as specification for a feature ("featuredness")**

Trubetzkoy 1931, 1939: in the opposition [t]:[d], [t] lacks specification for voice, so it appears in neutralization contexts and is unmarked.

Jakobson 1932 etc.: in the opposition *lion:lioness*, *lion* lacks specification for gender, so it appears in neutralization contexts and is unmarked.

C. **Markedness as restricted cross-linguistic distribution**

Kean 1992: 390 "perhaps the most common view of markedness encountered in the literature is the one based on cross-linguistic distributional analysis... [e.g.] if a language has a voiced stop, then it has a voiceless one as well."

Archangeli 1997:2: "The term markedness is used to refer to [the continuum between language-universal and language-particular properties], with completely unmarked properties being those found in virtually all languages and extremely marked properties found quite rarely."

D. **Markedness as a cluster of correlating properties of meaningful categories** ("**typological markedness**", Greenberg 1966, Croft 1990, 2003)

	unmarked	**marked**
structural coding	zero	overt
inflectional potential	more distinctions	fewer distinctions
distribution	in more environments	in fewer environments
text frequency	higher	lower
cross-ling. frequency	higher	lower
examples:	*singular*	*plural*
	present	*past*
	third person	*second person*
	active	*passive*

E. **Markedness as dispreference for difficult structures ("unnaturalness")**

Anderson & Lightfoot 2002:101: "MARKEDNESS: the tendency for phonetic forms to be pronounced in a simple, natural way (as determined in part by the nature of speech articulation, acoustics, and audition, and in part perhaps by more abstract cognitive factors...)"

Natural Phonology (Donegan & Stampe 1979), **Natural Morphology** (Dressler et al. 1987, Wurzel 1984 / 1989, Mayerthaler 1981 / 1988):

Wurzel 1994: 2591: "Certain structural characteristics which are permitted by Universal Grammar are clearly preferred by languages, others avoided if at all possible... [Markedness principles] establish which structural characteristics are preferred (or unmarked), [and] which are marked."

examples:	**unmarked**	**marked**
	[k]	[k^{w}]
	[i]	[y]
	[u]	[¨]
	suffix	infix
	SVO order	VSO order
(iconicity:)	*boy/boys*	Welsh *pluen* 'feather', *plu* 'feathers'
(uniformity:)	*boy/boys*	*wife/wives*
(transparency:)	*boy/boys*	*sheep/sheep*

Difficulty of dispreferred ("marked") structures is revealed by:
low cross-linguistic and textual frequency, late acquisition, slower processing, tendency to disappear in language change, etc. (Mayerthaler 1981:4-5)

F. **Markedness as rarity or unexpectedness**

Archangeli 1992:391 "the typical pattern or property is called unmarked, the atypical one marked"
Radford 1988:39: "To some extent, we can equate the term 'unmarked' with 'regular', 'normal', 'usual'; and 'marked' with 'irregular', 'abnormal', 'exceptional', or 'unusual'."
Tallerman 1998:19: "Object-fronting is quite rare in English. It's known as a MARKED construction, whilst the usual basic word order...is termed UNMARKED."
Levinson 2000:136: "What is said in an abnormal way indicates an abnormal situation, or marked messages indicate marked situations."
Comrie 1986:89-90: "Marked structures are used for marked situations", e.g.
"unmarked": *Tom intends to return before nightfall.*
"marked": *Tom intends **that** Sally should return before nightfall.*

G. **Markedness as deviation from default parameter setting**

Chomsky 1981:8: "In the absence of evidence to the contrary, unmarked options are selected."
van Riemsdijk & Williams 1986:136: "One way to construe the notions "marked" and "unmarked" is in terms of language learning: The marked case must be learned as a language-particular fact, whereas the unmarked case is what the language learner will assume to be the case (because it is determined by the innate language faculty), in the absence of facts to the contrary."

6. Instead of markedness: (I) Frequency of use, (II) ease of processing

(i) **replacing Markedness as "unnaturalness"**
by: (a) **ease of production**: – [k] preferred over [k^{w}] (additional gesture)
– *boy/boys* preferred over *wife/wives*
(rule application is easier than retrieval of a rare form)
(b) **distinctiveness**: – [u] is preferred over [¨]
– *boy/boys* is preferred over *sheep/sheep*
(c) **parsability**: – SVO preferred over VSO (Hawkins 1997, 2002)

(ii) **replacing Markedness as "typological markedness"**
by: **frequency of use**: not just one correlating factor, but in fact the ultimate cause of the other correlating properties;
Croft 2003:112: "Greenberg (1966:65-69) argues that text frequency is the underlying motivation for the asymmetry in structural coding and behavioral potential."
Frequency of basic categories is cross-linguistically largely uniform, and must be rooted in **conceptual-pragmatic preferences** for certain referents in language use.

(iii) **replacing Markedness as restricted cross-linguistic distribution**
by: (a) **ease of processing**:
Structures may be cross-linguistically rare because they are difficult to process and hence dispreferred / "unnatural"; when they arise in language change; they are unstable and disappear quickly; or they are unlikely to arise in the first place.
(b) **frequency of use**:
Categories may be cross-linguistically rare because they have a **low frequency of use and hence do not get grammaticalized** in many languages; for instance, duals and trials are rarer than plurals because people talk about pairs (and triples) less often than they talk about larger groups.

(iv) **replacing Markedness as specification for a feature**
by: (a) **ease of processing:**
Phonology: an extra articulatory property often makes a sound more difficult to pronoun so that extra features are often associated with difficulty and "unnaturalness".
(b) **frequency of use**:
Semantics: higher frequency of use typically leads to greater **polysemy**, so that more frequent items tend to develop several senses (e.g. *lion*: 1. 'lion in general', 2. 'male lion')

(v) **replacing Markedness as rarity or unexpectedness**
by: **rarity** and **unexpectedness**

7. Markedness in Optimality Theory

"markedness" mostly appears in the compound "**markedness constraint**";
McCarthy 2002:14: "any constraint that assigns violation-marks to a candidate based solely on its output structure, without regard to its similarity to the input"

7.1. What is the connection of "markedness constraints" to other kinds of "markedness"?

- In McCarthy's definition, substantive issues (processing considerations) and "normalcy / expectedness" are completely irrelevant
- So why is there so often a correspondence between OT markedness constraints and what other (substantively oriented) approaches have called "(un-)marked"?
- My explanation: This is because OT attempts language-particular descriptions that are not just internally consistent and elegant, but relate language-particular facts to cross-linguistic tendencies:

> McCarthy 2002:1: "One of the most compelling features of OT , in my view, is the way that it unites description of individual languages with explanation in language typology... the grammar of one language inevitably incorporates claims about the grammars of all languages."

Cross-linguistic tendencies have two sources: **processing preferences** (minimization of coding / decoding effort) and **conceptual-pragmatic preferences** (see §1 above). Hence, successful OT constraints will reflect these two kinds of preferences. And as we saw, these two kinds of preferences also give rise to what others have called "markedness phenomena".

7.2. Two types of OT markedness constraints

A. **Markedness constraints reflecting processing preferences**

– all phonological markedness constraints, e.g. ONSET, NOCODA, AGRVOICE, *LAPSE, etc.
– some syntactic markedness constraints, e.g. STAY, *STRUCTURE, *Ø, TELEGRAPH, etc.

B. **Markedness constraints reflecting conceptual-pragmatic preferences**

[– none in phonology]
– some syntactic markedness constraints, especially fixed markedness hierarchies, e.g.

*DATIVE >> *ACCUSATIVE >> *NOMINATIVE	Woolford 2001:513
*1ST2ND >> *3RD	Grimshaw 2001:234
*SUBJ / 3RD >> *SUBJ / 1ST2ND	Aissen 1999:682
*OBJ / HUM >> * OBJ / ANIM >> *OBJ / INAN	Aissen 2003+

Aissen 1999: 682: "The ranking of constraints in a subhierarchy is universally fixed, and **expresses** the **universal markedness relations** in this domain."

This sounds as if there existed "markedness relations" as an entity independent of the proposed OT constraints, but in fact there are just frequency differences: Human objects are used less frequently than inanimate objects, nominative case is used more often than accusative, and so on.

7.3. Conclusion

• OT "markedness constraints" seem satisfying to many linguists because they match fairly closely with the functional motivations that invariably underly the universal aspects of language structure.

• But **OT has no independent** "**theory of markedness**" (despite Aissen's 1999:708 rhetoric).

• To the extent that OT markedness constraints work, they work because they reflect empirically established cross-linguistic tendencies (cf. McCarthy 2002:14: "Cross-linguistic tendencies are a good place to start theorizing about constraints".)

• The observations and generalizations associated with markedness can all be explained with reference to **universal processing preferences** and **universal conceptual-pragmatic preferences**. There is no need to assume markedness at the level of the **language-particular** (phenomenological or cognitive) **grammar**, and there is no need for markedness at the level of the **cognitive code** (= UG).

(cf. OT-inspired work like Jäger 2003+, which does not refer to "markedness" or, for that matter, "iconicity")

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