

Idioms and Transformations

Gereon Müller, IDS Mannheim, July 2000

gereon.mueller@ids-mannheim.de

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1. Background

There is a standard objection:

Since optimality theory relies on free constraint reranking, it is not sufficiently restrictive. For instance, it cannot account for implicational generalizations.

However:

There are general means to derive implicational generalizations in optimality theory. One of them is harmonic alignment of markedness scales, which results in an invariant order among constraints.

Aim of this talk:

Harmonic alignment is applied to a domain where implicational generalizations hold: idioms.

(1) *Scale of idioms:*

$XP_{opaque} > XP_{semi-opaque} > XP_{semi-transparent} > XP_{transparent}$

Implicational generalizations derivable from harmonic alignment:

If a given item α on a scale Σ has property δ , then any item β that is lower on Σ than α also has δ .

2. Harmonic Alignment

2.1. Harmony of the Nucleus in Prince & Smolensky (1993)

Harmonic alignment is a meta-principle that, based on independently motivated universal scales, systematically creates constraints with strict relative order.

(2) *Harmonic Alignment* (Prince & Smolensky (1993, 136)):

Suppose given a binary dimension D_1 with a scale $X > Y$ on its elements $\{X, Y\}$, and another dimension D_2 with a scale $a > b > \dots > z$ on its elements $\{a, b, \dots, z\}$. The *harmonic alignment* of D_1 and D_2 is the pair of Harmony scales H_X, H_Y :

a. $H_X: X/a \succ X/b \succ \dots \succ X/z$

b. $H_Y: Y/z \succ \dots \succ Y/b \succ Y/a$

The *constraint alignment* is the pair of constraint hierarchies C_X, C_Y :

a. $C_X: *X/z \gg \dots \gg *X/b \gg *X/a$

b. $C_Y: *Y/a \gg *Y/b \gg \dots \gg *Y/z$

Application in Prince & Smolensky (1993):

H-NUC (“Harmony of the nucleus”) is not a binary constraint. In order to find

out how a candidate fulfills H-NUC, it does not suffice to only consider the candidate itself. Rather, the candidate must be compared with other candidates so as to find out which candidate has the most harmonic nucleus. This is theoretically unattractive because it implies an additional (albeit trivial) optimization procedure (much like transderivational constraints in early versions of the minimalist program). Prince & Smolensky's solution: Two hierarchies.

- (3) a. *Syllable Position Prominence:*
 $P > M$ (Peak > Margin)
 b. *Sonority Hierarchy:*
 $a > i > \dots > t$
- (4) *Harmonic Alignment:*
 a. $H_P: P/a \succ P/i \succ \dots \succ P/t$
 b. $H_M: M/t \succ \dots \succ M/i \succ M/a$
- (5) *Constraint Alignment:*
 a. $C_P: *P/t \gg \dots \gg *P/i \gg *P/a$
 b. $C_M: *M/a \gg *M/i \gg \dots \gg *M/t$

Result:

The syllable peak constraint hierarchy C_P can do everything that has been done by H-NUC (and more). The revised system makes it possible to dispense with non-binary constraints.

Syntactic applications of harmonic alignment:

Aissen (1999), Artstein (1998) on GF-mapping and pro-drop, conditioned by (i.a.) a person scale (1./2. Pers. > 3. Pers.)

Further applications:

- (i) the transformational deficiency of idioms
 (ii) the transformational deficiency of pronouns

3. Idioms in English and German

*Observation*¹ :

Idioms resist transformations to various degrees.

Implicational generalization:

If an idiom α dominates an idiom β on the opacity hierarchy, and transformation δ can affect α , then δ can also affect β .

- (6) a. *Opacity hierarchy:*
 $XP_{opaque} > XP_{semi-opaque} > XP_{semi-transparent} > XP_{transparent}$

¹Frazer (1970), Nunberg, Sag & Wasow (1994), Jackendoff (1997), O'Grady (1998); Burger (1973), Fleischer (1982; 1997) on German.

- b. *Integrity Hierarchy:*
Intact > affected

(7) A transformation *affects* an XP iff it applies to a proper subpart of XP.
(Movement out of XP makes XP incomplete and thereby always affects it.)

Note:

The Opacity hierarchy encodes a taxonomy of idioms arrived at in the Soviet school of phraseology (Vinogradov (1946; 1947), Šanskij (1972), Černiševa (1970)).

(8) *Soviet taxonomy of idioms:*

- a. Frazеологічєskije sraščєnija (“Phraseologische Fügungen”)
- b. Frazеологічєskije edinstva (“Phraseologische Ganzheiten”)
- c. Frazеологічєskije čočetanija (“Phraseologische Verbindungen”)
- d. Frazеологічєskije vyražєnija (“Phraseologische Ausdrücke”)

Note:

Nunberg, Sag & Wasow (1994) assume that there are only two idiom classes with respect to semantic opacity. Idioms in one class are completely opaque; idioms in the other class are completely transparent, given a metaphorical interpretation of the idiom parts that is contextually restricted (e.g., *beans* can mean “information” in the context of *spill*, and *spill* can mean “divulge” in the context of *beans*). We will see that this two-way system is not fine-grained enough. (That said, the Opacity hierarchy can also be viewed as reflecting different degrees of contextually restricted metaphorization, even in the most opaque cases; cf. Everaert (1991).)

(9) *Harmonic alignment:*

- a. $H_{in.}: XP_{op}/in. \succ XP_{s-op}/in. \succ XP_{s-tr}/in. \succ XP_{tr}/in.$
- b. $H_{aff.}: XP_{tr}/aff. \succ XP_{s-tr}/aff. \succ XP_{s-op}/aff. \succ XP_{op}/aff.$

(10) *Constraint alignment:*

- a. $C_{in.}: *XP_{tr}/in. \gg *XP_{s-tr}/in. \gg *XP_{s-op}/in. \gg *XP_{op}/in.$
- b. $C_{aff.}: *XP_{op}/aff. \gg *XP_{s-op}/aff. \gg *XP_{s-tr}/aff. \gg *XP_{tr}/aff.$

Proposal:

The generalization concerning transformational deficiency follows from the fact that constraints that trigger transformations are interspersed with the subconstraints of the $C_{aff.}$ hierarchy.

(11) *Idiom classes in English:*

- a. *Opaque VPs:*
kick the bucket, chew the fat, face the music
- b. *Semi-opaque VPs:*
break the ice, bring down the house, keep up one’s guard, the cat have x’s tongue
- c. *Semi-transparent VPs:*
spill the beans, pass the buck, lay down the law, pull strings, let the cat out of the bag
- d. *Transparent VPs:*

- (i) light verb constructions: put the blame on (blame), give a kick (kick), take a walk (walk)
 - (ii) reanalysis constructions: read (vs. destroy) book
- (12) *Gerundive nominalization:*
- a. Bill's kicking the bucket
 - b. Sue's breaking the ice
 - c. John's spilling the beans
 - d. Mary's reading the book
- (13) *Passive:*
- a. *The bucket₁ was kicked t₁ by Bill
 - b. The ice₁ was broken t₁ by Sue
 - c. The beans₁ were spilled t₁ by John
 - d. The book₁ was read t₁ by Mary
- (14) *Action nominalization:*
- a. *Bill's kicking of the bucket
 - b. *Sue's breaking of the ice
 - c. John's spilling of the beans
- (15) *Wh-Movement:*
- a. *Which bucket₁ did Bill kick t₁ ?
 - b. *Which ice₁ did Sue break t₁ ?
 - c. *Which beans₁ did John spill t₁ ?
 - d. Which book₁ did Mary read t₁ ?
- (16) *Clefting:*
- a. *It's the bucket that Bill kicked
 - b. *It's the ice that Sue broke
 - c. *It's the beans that John spilled
 - d. It's the book that Mary read
- (17) *Internal modification:*
- a. *Bill kicked a second bucket
 - b. *Sue broke the thin ice
 - c. *John spilled the new beans (but cf. They left no legal stone unturned)
 - d. Mary read a new book

Variation:

“Our intuitions in this domain are ... robust and ... consistent across speakers” (Nunberg, Sag & Wasow (1994, 507)). “Idioms, more than most aspects of language, vary enormously from speaker to speaker. [...] What is important is that the general claims about idioms ... hold true for each speaker” (Frazer (1970, 23)).

(18) *Idiom classes in German:*

- a. *Opaque VPs:*
Fersengeld geben, Fraktur reden, Bauklötze staunen
- b. *Semi-opaque VPs:*

den Stier bei den Hörnern packen, die Flinte ins Korn werfen, Feuer fangen, den Vogel abschießen, ins Gras beißen, den Löffel abgeben

c. *Semi-transparent VPs:*

einen Korb geben, goldene Brücken bauen, die Suppe versalzen, ins Handwerk pfuschen

d. *Transparent VPs:*

(i) light verb constructions: zur Aufführung bringen, in Verbindung stehen, Prüfung unterziehen

(ii) reanalysis constructions: Buch lesen (vs. zerstören), Film sehen (vs. widmen)

(19) *Topicalization:*

a(?) Fersengeld₁ hat der Fritz t₁ gegeben

heel money has ART Fritz given

b. Den Stier₁ hat sie t₁ bei den Hörnern gepackt

the bull has she at the horns seized

c. Einen Korb₁ hat sie ihm t₁ gegeben

a basket has she him given

d. Ein Buch₁ hat Maria t₁ gelesen

a book has Maria read

(20) *Passive:*

a. *daß Fersengeld₁ vom Fritz t₁ gegeben wurde

that heel money by ART Fritz given was

b. daß der Stier₁ von ihr t₁ bei den Hörnern gepackt wurde

that the bull by her at the horns seized was

c. daß ihm ein Korb₁ von ihr t₁ gegeben wurde

that him a basket by her given was

d. daß ein Buch₁ von Maria t₁ gelesen wurde

that a book by Maria read was

(21) *Internal modification:*

a. *daß Fritz geliehenes Fersengeld gegeben hat

that Fritz borrowed heel money given has

b. *daß sie den großen Stier bei den Hörnern gepackt hat

that she the big bull at the horns seized has

c. daß sie ihm einen ganz schönen Korb gegeben hat

that she him a quite nice basket given has

d. daß Maria ein neues Buch gelesen hat

that Maria a new book read has

(22) *Wh-Movement:*

a. *Was für ein Fersengeld₁ hat der Fritz t₁ gegeben ?

what for a heel money has ART Fritz given

b. *Was für einen Stier₁ hat sie t₁ bei den Hörnern gepackt ?

what for a bull has she at the horns seized

- c(?) Was für einen Korb₁ hat sie ihm t₁ gegeben ?
 what for a basket has she him given
- d. Was für ein Buch₁ hat Maria t₁ gelesen ?
 what for a book has Maria read

(23) *Left dislocation:*

- a. *Fersengeld₁ das wollte der Fritz t₁ geben
 heel money that wanted ART Fritz give
- b. *Den Stier₁ den hat sie t₁ bei den Hörnern gepackt
 the bull that has she at the horns seized
- c. *Einen Korb₁ den hat sie ihm t₁ gegeben
 a basket that has she him given
- d. Ein Buch₁ das hat Maria t₁ gelesen
 a book that has Maria read

Analysis:

The constraints that trigger the respective transformations are interspersed with the subconstraints of C_{aff} , that was created by harmonically aligning the Opacity hierarchy and the (binary) Integrity Hierarchy.

(24) *Ranking in German:*

- TOP \gg *XP_{op}/aff. \gg
- PASSIVE \gg *XP_{s-op}/aff. \gg
- WHMOVE, MOD \gg *XP_{s-tr}/aff. \gg
- LEFTDIS \gg *XP_{tr}/aff.

T_1 : *Passive and opaque VPs*

Input: VP _{op} , Pass., ...	*XP _{op} /aff.	PAS SIVE	*XP _{s-op} /aff.	WH MOVE	*XP _{s-tr} /aff.	*XP _{tr} /aff.
O ₁ : Fersengeld V _{passive}	*!					
☞O ₂ : Fersengeld V _{active}		*				

T_2 : *Passive and semi-opaque VPs*

Input: VP _{s-op} , Pass., ...	*XP _{op} /aff.	PAS SIVE	*XP _{s-op} /aff.	WH MOVE	*XP _{s-tr} /aff.	*XP _{tr} /aff.
☞O ₁ : Stier V _{passive}			*			
O ₂ : Stier V _{active}		*!				

T_3 : *Wh-Movement and semi-opaque VPs*

Input: VP _{s-op} , [+wh], ...	*XP _{op} /aff.	PAS SIVE	*XP _{s-op} /aff.	WH MOVE	*XP _{s-tr} /aff.	*XP _{tr} /aff.
O ₁ : was für einen Stier V			*!			
☞O ₂ : den Stier V				*		

T_4 : *Wh-Movement and semi-transparent VPs*

Input: VP_{s-tr} , [+wh], ...	* $XP_{op}/$ aff.	PAS SIVE	* $XP_{s-op}/$ aff.	WH MOVE	* $XP_{s-tr}/$ aff.	* $XP_{tr}/$ aff.
$\Rightarrow O_1$: was für einen Korb V					*	
O_2 : einen Korb V				*!		

4. Final Remarks

Harmonic alignment captures implications: If a given item α on a scale Σ has property δ , then any item β that is lower on Σ than α also has δ .

(25) *Dividing lines across idioms:*

- a. Topicalization: all
- b. Passive: opaque vs. semi-opaque, semi-transparent, transparent
- c. Wh-Movement: opaque, semi-opaque vs. semi-transparent, transparent
- d. Left dislocation: opaque, semi-opaque, semi-transparent vs. transparent