

On the typology of the psych-alternation: Does morphological directionality influence syntax?

Observations & methodological considerations

Julian A. Rott & Elisabeth Verhoeven
Institut für deutsche Sprache und Linguistik
Humboldt-Universität zu Berlin

Linguistics Beyond and Within 2016

October 20th 2016

Katolicki Uniwersytet Lubelski Jana Pawła II

Outline

1. The psych alternation
2. The internal structure of the psych domain
3. Morphology in the psych domain
4. Syntax of EO-verbs
5. Methodology
6. Aims and future prospects
7. References

1. Psych alternation

- The psych domain is characterized by the existence of alternating stimulus- and experiencer-directed structures, cf.:
 - (1)
 - a. *Global warming preoccupies George.*
 - b. *George is preoccupied with global warming.*

((a) from Landau 2010:54)
 - (2)
 - a. *Global warming worries George.*
 - b. *George worries about global warming.*
- Languages differ with respect to the morphological structure of their verbal inventory in the psych domain.

1. Psych alternation

- Stems differ across languages:
(see Nichols et al. 2004)

1. Intransitivizing languages

- a. Greek mediopassive

x enđiaféri y 'x interests y'
y enđiaférete ja x 'y is interested in x'

- b. German reflexive, stative passive

x ärgert y 'x annoys y'
y ärgert sich über x 'y is annoyed by x'

2. Transitivity languages

- a. Turkish causativization

y x sevin-di 'y is happy about x'
x y sevin-dir-di 'x makes y happy'

- b. Yucatec causativization

chi'chnak ti' x y 'y is annoyed about x'
chi'chnak-kuns- y x 'x annoys y'

3. Underspecified

- a. Hungarian double derivation

megrém-ít x y 'x frightens y'
megrém-ül y x-tól 'y gets frightened by x'

- b. English conversion

x worries y
y worries about x

1. Psych alternation

Research questions I

Considering a larger sample of the world's languages:

1. Do the languages show global preferences for the morphological realization of psych events?
2. Can we predict such preferences by their structural profile and/or their areal/genetic properties?

2. The internal structure of the psych domain

- Cultures and, by extension, languages conceptualize emotions differently
- Translational equivalence cannot be assumed a priori (see e.g. Heider 1991:52-58, Boster 2005; see also Ogarkova, Panasenko, and Lewandowska-Tomaszczyk 2013)
- The lexicalization of the experiential concepts involves several aspects of variation that are crucial for our hypotheses:
 - Translational equivalents (i.e. items with substantial semantic overlap) may belong to different verb classes in the investigated languages, e.g.:

(3) *hate* (English, tr.) = *nefret et-* (Turkish, intr.)

2. The internal structure of the psych domain

- Translational equivalents only share certain aspects of meaning while diverging in others:

(4) *ha's óol* (Yucatec Maya) \approx *frighten*
 \approx *startle*
 \approx *surprise*

(5) *sık-* (Turkish) \approx *bore*
 \approx *annoy*

- If the conceptual boundaries of the emotion space are fluid, why assume comparability (i.e. general human tendencies) at all?

Every language imposes its own classification upon human emotional experience, and English words such as anger or sadness are cultural artifacts of the English language, not culture-free analytical tools

(Wierzbicka 1992:546)

2. The internal structure of the psych domain

Anthropology, Sociology, Psychology

- Emotions in humans are necessitated by their intermediate position as systems between simplistic fixed action stimulus—response patterns and absolute rationality
(Oatley and Johnson-Laird 1987, Johnson-Laird and Oatley 1992:205; Plutchik 2001, Simon 1967)
- Some innate response patterns may be evolutionarily advantageous
- Emotions arise from human social plans
(Oatley and Johnson-Laird 1987)
- Complexity as a function of ontogeny
- Emotions past the infant stage thus involve additional layers of cognitive evaluation and references to a model of self

2. The internal structure of the psych domain

- However, some basic emotional modes have been assumed to be stable across cultures:
(Oatley and Johnson-Laird 1987, Johnson-Laird and Oatley 1992, Turner 2007; see also Ekman 1973, 1999)
- (6) a. HAPPINESS
- b. SADNESS
- c. ANGER
- d. FEAR
- e. DISGUST

Physiology

- Facial expressions and recognition thereof
(Ekman, Sorensen and Friesen 1969, Ekman 1973, Rozin and Fallon 1987, Rosenstein and Oster 2005)
- Reactions of the Autonomous Nervous System
(Ekman, Levenson and Friesen 1983)

3. Morphology in the psych domain

- Investigating preferences of morphological structure in the psych domain
- Inventory of basic lexicalizations:
20 concepts from the 5 basic psych domains
(4 per domain)

(7) HAPPINESS e.g. *delight, please, charm, enthuse, amuse, interest, fascinate, ...*

SADNESS e.g. *sadden, afflict, depress, grieve, disappoint, ...*

ANGER e.g. *annoy, anger, bother, enrage, frustrate, bore, ...*

FEAR e.g. *frighten, worry, terrify, startle, ...*

DISGUST e.g. *disgust, nauseate, gross out, repel, appall, horrify, ...*

- An exploratory pretest

3. Morphology in the psych domain

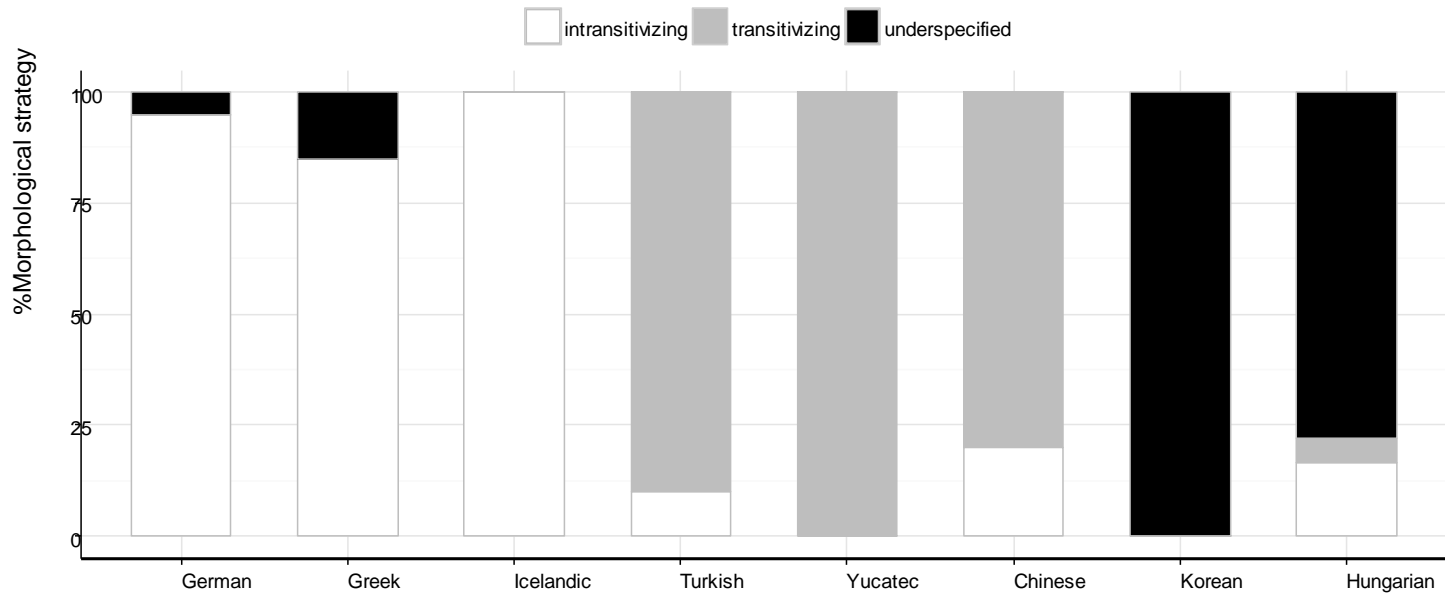
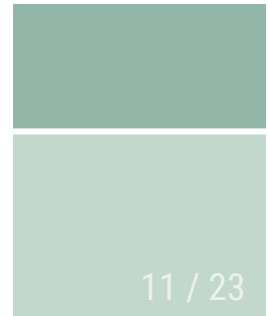


Fig. 1 Morphological process in the formation of EO/ES verbs

- The distribution of morphological strategies in our sample does not form a continuum of frequencies but rather shows a clear preferences for a dominant strategy
- This holds across emotional modes



4. Syntax of EO verbs

- EO verbs may show exceptional syntactic properties

(Belletti & Rizzi 1988, Pesetsky 1995, Haspelmath 2001, Reinhart 2002, Bayer 2004, Landau 2010, Verhoeven 2014, Temme & Verhoeven 2016, etc.)

- Linearization
 - Passivization
 - Extraction
 - Binding
 - ...
- This is a contrast in the verbal lexicon
 - Crucially, *it does not appear in all languages.*

4. Syntax of EO verbs

(8) **Passive**

a. Turkish:

Yaya (polis tarafından) üz-dür-ül-dü.

Pedestrian policeman by sadden-CAUS-PASS-PFV

b. Icelandic:

**Vegfarand-inn var gladd-ur (af lögreglumann-inum).*

Pedestrian-NOM.DEF was gladdened-NOM by policeman-DAT.DEF

((a) taken from Verhoeven 2008:88)

(9) **Forward binding**

a. Chinese:

Lǎoshī hé xuéshēng (wúyìjiān) xiānghù jīnù-le.

Teacher and student unconsciously each.other enrage-PFV

b. German:

**Peter und Paul wundern/interessieren sich gegenseitig.*

Peter and Paul astonish/concern REFL each.other

(Verhoeven 2010:112f.)

4. Syntax of EO verbs

Typological difference in the lexicon

Ls having a subclass of EO verbs
with exceptional syntactic properties

yes

German
Greek
Icelandic
Hungarian

intransitivizing languages

no (at least for ACC EOs)

Chinese
Turkish
Yucatec Maya
Korean

transitivizing languages

Fig. 2 *Typology of non-canonicity in ACC EO predicates*
(see Verhoeven 2010, 2014, Temme & Verhoeven 2016)

4. Syntax of EO verbs

Research questions II

Considering the relation between morphological properties and syntactic/semantic properties of psych verbs:

1. Do the typological differences with respect to the morphology influence the semantics and syntax of psych verbs?
2. In particular, is the special syntactic behaviour of EO psych verbs restricted to the intransitivizing languages?

5. Methodology

- How to investigate emotion lexis across languages and cultures, given the large number of influential factors?

The theme is composed of the characteristics unique to that family, the variations on that theme are the product of individual differences, and differences in the specific occasion in which an emotion occurs. The themes are the product of evolution, while the variations reflect learning.

(Ekman 1999:55)

- The more an emotion is characterized by components of active cognition, the stronger it is bound to be culturally informed
(Scherer et al. 1988:26-30, Wallbott and Scherer 1986)

5. Methodology

[...] the members of a culture have a prototype for the sorts of events that cause an emotion such as sadness, and for the sorts of events that ensue; but they do not have a prototype for the subjective feeling itself. It is an unanalysable primitive experience.

(Johnson-Laird and Oatley 1989:93)

- The existence of basic emotion modes underlying all emotional experience suggests the existence of some universal triggers or *Universal Antecedent Events* (UAE) (Ekman 1999; Boucher and Brandt 1981; Hupka, Lenton, and Hutchison 1999)
- If we can explicate the additional layers at which the emotion lexicon incurs culture-specificity, it should, in principle, be possible to guide informants through their own emotional ontologies regardless of culture, using UAEs
- First step: A toolkit for elicitations

5. Methodology



	HAPPINESS	SADNESS	ANGER	FEAR	DISGUST
Oatley and Johnson-Laird (1987)					
	Sub-goals being achieved	Failure of major plan or loss of active goal	Active plan frustrated	Self-preservation goal threatened	Gustatory goal violated
Ekman (1994)					
	1.Sensory pleasure 2.Excitement 3.Praise 4.Relief when something unpleasant has ceased	The loss of an object to which one was attached	1. Frustration resulting from interference with one's activity 2. A physical threat 3. An insult [...]	An actual or threat of harm	Something that is repulsive, to the senses or to one's beliefs
Sauter (2009)					
	Enjoyment of an event or experience	Experiencing the irrevocable loss of a loved one	Being offended by someone and intending to defend oneself	You are faced with physical danger	Coming in contact with something physically noxious and/or contaminating

Tab. 1. Excerpts from the literature on the nature of UAEs

5. Methodology

- Three leveled conceptual subcomponents are applied to each basic emotion domain B to delineate situations in which an emotion $E \in B$ emerges:

(10) **a. Temporal structure**

- i. NOW
 - External onset (occurrence of STIM in mental time model)
- i. PAST
- ii. FUTURE
 - Internal onset (Latency)
- i. SHORT
- ii. LONG

b. Degree

- i. WEAK
- ii. STRONG

c. Relational evaluation

- i. SELF
- ii. OTHER

5. Methodology

Elicitation stimuli and presentation

- Creation of basic scenarios targeting UAEs
- Questions targeting the conceptual subcomponents to guide informants
- Simple lexicalizations avoiding emotional terminology
- Oral elicitation going through questions
(see Cozby and Bates 2011, pp. 128-152)
- 2 scenarios per basic emotion mode, manipulating STIM animacy
- Scenarios are chosen intuitively and in order to cover a broad range of complex emotions and cognition patterns

5. Methodology

- Causal direction is randomized and balanced across items, operationalized as linear order in questions
- 50% of Experiencers is female
- For every basic emotion category, both feminine and masculine Experiencers are used

Cd.	Scenario 1			Scenario 2		
	Emotion	EXP	STIM	Emotion	EXP	STIM
1	HAPPINESS	m	-an	DISGUST	m	-an
2	SADNESS	f	-an	FEAR	f	+an
3	ANGER	m	+an	SADNESS	m	+an
4	FEAR	m	-an	HAPPINESS	f	+an
5	DISGUST	f	+an	ANGER	f	-an

Tab. 2. Questionnaire versions

5. Methodology

- One session per questionnaire
- Each basic emotion category is captured during two sessions
- Elicitation toolkit is available in multiple languages

Material elicited

- Participants give verbal infinitives and adjectives/participles
- Each item is to be used in a simple sentence including all scenario participants

Languages under investigation

- Initial set covers Icelandic, Finnish, Hungarian, Chinese, Korean, Spanish
- Eventually: A typological sample of 30 languages from all five macro areas

6. Aims and future prospects

1. Gather natural and comparable data for a diverse set of languages
2. Build a large database of psych verb inventories to be used for further hypothesis testing
3. Develop a typology of morphological directionality and non-canonical psych verb effects
4. Provide the scientific community with our dataset

References



- Bayer, Josef (2004). "Non-nominative subjects in comparison". In: *Non-nominative Subjects*. Ed. by Peri Bhaskararao and Karumuri Venkata Subbarao. 2 volumes. Amsterdam/Philadelphia: Benjamins, pp. 49-76.
- Belletti, Adriana & Luigi Rizzi (1988). "Psych-verbs and θ -Theory". In: *Natural Language and Linguistic Theory* 6, pp. 291-352.
- Boster, James S. (2005). "Emotion categories across languages". In: *Handbook of categorization in cognitive science*. Ed. by Henri Cohen and Claire Lefebvre. London: Elsevier, pp. 188-223.
- Boucher, Jerry D. and Mary E. Brandt (1981). "Judgment of Emotion. American and Malay Antecedents". In: *Journal of Cross-Cultural Psychology* 12 (3), pp. 272-283.
- Cozby, Paul C. and Scott C. Bates (2011). *Methods in behavioral research*. 11th ed. New York: McGraw-Hill.
- Ekman, Paul (1973). "Cross-Cultural Studies of Facial Expression". In: *Darwin and Facial Expression. A century of research in review*. Ed. by Paul Ekman. New York: Academic Press, pp. 221-238.
- Ekman, Paul (1994). "Antecedent Events and Emotion Metaphors". In: *The Nature of Emotion. Fundamental questions*. Ed. by Paul Ekman and Richard J. Davidson. Oxford: Oxford University Press, pp. 146-149.
- Ekman, Paul (1999). "Basic Emotions". In: *Handbook of Cognition and Emotion*. Ed. by Tim Dalgleish and Mick Power. New York: John Wiley & Sons, pp. 45-60.
- Ekman, Paul, Robert W. Levenson, and Wallace V. Friesen (1983). "Autonomic Nervous System Activity Distinguishes among Emotions". In: *Science* 221, pp. 1208-1210.

References



- Ekman, Paul, E. Richard Sorensen, and Wallace V. Friesen (1969). "Pan-Cultural Elements in Facial Displays of Emotion". In: *Science* 164, pp. 86-88.
- Heider, Karl G. (1991). *Landscapes of emotion: Mapping three cultures of emotion in Indonesia*. Cambridge: Cambridge University Press.
- Haspelmath, Martin (2001): "Non-canonical marking of core arguments in European languages". In: *Non-canonical marking of subjects and objects*. Ed by Alexandra Y. Aikhenvald, Robert M.W. Dixon and Masayuki Onishi. Amsterdam/Philadelphia: John Benjamins, pp. 53-83.
- Hupka, Ralph B., Alison P. Lenton, and Keith A. Hutchison (1999). "Universal Development of Emotion Categories in Natural Language". In: *Journal of Personality and Social Psychology* 77 (2), pp. 247-278.
- Johnson-Laird, Philip and Keith Oatley (1989). "The language of emotions: An analysis of a semantic field". In: *Cognition & Emotion* 3 (2), pp. 81-123.
- Johnson-Laird, Philip and Keith Oatley (1992). "Basic emotions, rationality, and folk theory". In: *Cognition & Emotion* 6 (3-4), pp. 201-223.
- Landau, Idan (2010). *The Locative Syntax of Experiencers*. Cambridge, Massachusetts/London: The MIT Press.
- Nichols, Johanna, David A. Peterson and Jonathan Barnes (2004). "Transitivizing and detransitivizing languages". In: *Linguistic Typology* 8, pp. 149-211.
- Oatley, Keith and Philip Johnson-Laird (1987). "Towards a Cognitive Theory of Emotions". In: *Cognition & Emotion* 1 (1), pp. 29-50.

References



- Ogarkova, Anna, Nataliya Panasenko, and Barbara Lewandowska-Tomaszczyk (2013). "Language family similarity effect: Emotion term semantics in Russian, Ukrainian, Czech, Slovak, and Polish". In: *Components of Emotional Meaning. A Sourcebook*. Ed. by Johnny J. R. Fontaine, Klaus R. Scherer, and Cristina Soriano. Oxford: Oxford University Press, pp. 502-506.
- Pesetsky, David (1995). *Zero Syntax: Experiencers and Cascades* (= Current Studies in Linguistics 27). Cambridge, Massachusetts: The MIT Press.
- Plutchik, Robert (2001). "The Nature of Emotions". In: *American Scientist* 89 (4), pp. 344-350.
- Reinhart, Tanya (2002). "The Theta System - an overview". In: *Theoretical Linguistics* 28, pp. 229-290.
- Rosenstein, Diana and Harriet Oster (2005). "Differential Facial Responses to Four Basic Tastes in Newborns". In: *What the Face Reveals. Basic and Applied Studies of Spontaneous Expression Using the Facial Action Coding System (FACS)*. Ed. by Paul Ekman and Erika L. Rosenberg. 2nd ed. Oxford: Oxford University Press, pp. 302-319.
- Rozin, Paul and April E. Fallon (1987). "A Perspective on Disgust". In: *Psychological Review* 94 (1), pp. 23-41.
- Sauter, Disa (2009). "Emotion concepts". In: *Field Manual*. Ed. by Asifa Majid. Vol. 12. Nijmegen: Max Planck Institute for Psycholinguistics, pp. 20-30.
- Scherer, Klaus R., Harald G. Wallbott, David Matsumoto, and Tsutomu Kudoh (1988). "Emotional experience in cultural context: A comparison between Europe, Japan, and the United States". In: *Facets of Emotion*. Ed. by Klaus R. Scherer. Hillsdale: Lawrence Erlbaum, pp. 5-30.
- Simon, Herbert A. (1967). "Motivational and Emotional Controls of Cognition". In: *Psychological Review* 74 (1), pp. 29-39.

References



- Temme, Anne & Verhoeven, Elisabeth (2016). "Verb class, case, and order: A crosslinguistic experiment on non-nominative experiencers". *Linguistics* 54.4.
- Turner, Jonathan H. (2007). *Human Emotions. A sociological theory*. London / New York: Routledge.
- Verhoeven, E. 2008. (Non-)canonical marking of experiencer objects. In: *Language Typology and Universals* (STUF) 61, pp. 81-92.
- Verhoeven, Elisabeth (2010). "Transitivity in Chinese experiencer object verbs". In: Brandt, P. & García García, M. (ed.), *Transitivity: Form, Meaning, Acquisition, and Processing*. Amsterdam: Benjamins, 95-118.
- Verhoeven, Elisabeth (2014). "Thematic prominence and animacy asymmetries". In: *Lingua* 143, pp. 129-161.
- Wallbott, Harald G. and Klaus R. Scherer (1986). "How universal and specific is emotional experience? Evidence from 27 countries on five continents". In: *Social Science Information* 25 (4), pp. 763-795.
- Wierzbicka, Anna (1992). "Defining Emotion Concepts". In: *Cognitive Science* 16, pp. 539-581.

Thank you!
Dziękuję!
Vielen Dank!

Sample questionnaire: SADNESS / FEAR



A girl loses her favorite toy and is unable to find it again.

1. Which words would best describe the way the loss of his favorite toy makes the girl feel?
2. Which words might be used to describe how that memory makes her feel years after the toy was lost?
3. Which words would best describe how the thought of losing her toy made the girl feel while she still had it?
4. Which words could be used to describe the way the girl felt in the very moment when she noticed that she had lost the toy?
5. Which words might be used to describe how the girl felt during the days following the loss of her toy?
6. Which words might be used to best describe the feelings of the girl if the toy she lost had not been her favorite but a different one that she only played with occasionally?
7. Which words could be used to best describe the way the girl felt if the toy she lost was not only her favorite, but also the only one she owned?
8. Which words could be used to describe how not having her toy to play with now makes the girl feel?
9. Which words might be used to describe how not being able take her favorite toy to play with friends anymore makes the girl feel?
10. Which other words might be used to describe the way the girl feels when losing her toy?

Sample questionnaire: SADNESS / FEAR

A woman encounters a robber.

1. Which words could be used to describe how the robber makes the woman feel?
2. Which words might be used to describe the way the memory of meeting the robber makes the woman feel?
3. Which words could be used to describe the way the woman may have felt about a robber appearing before she had encountered him, but she knew that she was entering a dangerous area?
4. Which words could be used to describe the way the robber made the woman feel by suddenly appearing in front of her?
5. Which words could be used to describe how the woman feels about the robber in the time following the robbery?
6. Which words could be used to describe how the robber causes the woman to feel when he does not pose a real threat to her?
7. Which words could be used to best describe the way the woman feels about the robber when he pulls a gun on her and threatens to kill her?
8. Which words could be used to describe how the woman feels when the robber takes away her money which she needed badly?
9. Which words could be used to describe how the woman feels about the robber when she thinks about why he chose her as his victim?
10. Which other words could be used to describe how the robber makes the woman feel?