A cross-linguistic empirical approach to emotion lexis and syntax

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Outline

1. **Introduction:**
   A complicated solution to a simple problem?
2. **Human emotion theory:**
   Finding referents in the underlying domain
3. **A new approach:**
   Feelings and how to make people talk about them
4. **Proof of Concept: The psych alternation**
5. **First results**
6. **Outlook**

1. Introduction

- A simple issue:
  Observing the patterns of a linguistic category across languages (cf. Haspelmath 2010)
- Choice of exponents vs. comparability
  (Heider 1991:52-58)
- How to ensure that any two lexical items from a set of languages L_1, L_2, L_3, …, L_n is meaningfully contrastable for the purpose at hand?
- Common approach:
  Appoint an arbitrary L_1 (English) to pivot
  (cf. Russell 1983, Hupka et al. 1999, Nichols et al. 2004, Malchukov et al. 2015, Haspelmath 2015)

1. Introduction

- Shared semantics as *tertium comparationis*
- Accessibility and economy
- However, what is translation equivalence?

> The SL and TL items rarely have 'the same meaning' in the linguistic sense; but they can function in the same situation. […] Presumably, the greater the number of situational features common to the contextual meanings both SL and TL text, the 'better' the translation. The aim […] must therefore be to select TL equivalents not with 'the same meaning' as the SL items, but with the greatest possible overlap of situational range.
>
> (Catford 1965:49)

- Situational range is difficult to operationalize
- Certain lexical domains may be more culture-specific than others

1. Introduction

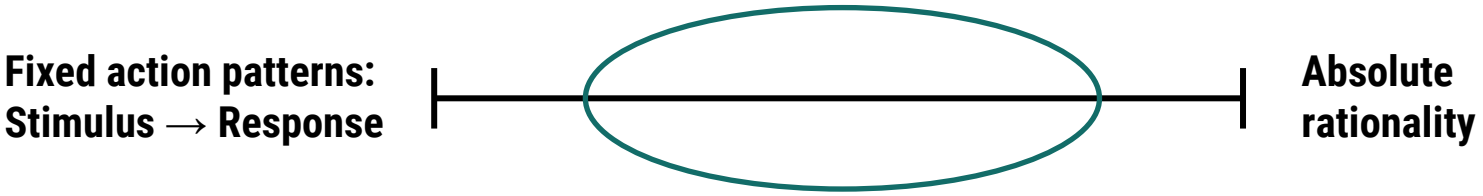
- Highly subjective: Emotion and perception
  → Experiencer predicates
  (Scherer et al.:1988:26-30, Boster 2005)
- Reification of English terms has come under criticism in this particular domain
  (Lutz & White 1985, Wierzbicka 2009, Fontaine et al. 2013)

> 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)

- An alternative route:
  Targeting the domain directly

2. Human emotion theory

– Humans as intermediate systems on a cognitive cline (Simon 1967):



– Emotions as adaptive advantage in dealing with fundamental life tasks (Ekman 1999, Plutchik 2001)

– Two main approaches w.r.t. origin of emotions (e.g. Ortony & Turner 1990, Reisenzein 2000)

1. Evolutionary, biological (phylogenetic)
2. Social constructionist, psychological (ontogenetic)

2. Human emotion theory

- Some basic, broadly defined emotion categories are assumed to hold across cultures
  (Ekman 1973, Wallbott & Scherer 1986, Turner 1999, Prinz 2004, Fontaine & Scherer 2013)
- Towards a consensus:
  HAPPINESS, SADNESS, ANGER, FEAR (DISGUST, SURPRISE, ...)
- Hybrid approach
  (Oatley & Johnson-Laird 1987, 1990; Johnson-Laird & Oatley 1989)

> 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)

2. Human emotion theory

- Somatic correlates may precede learning (cf. Hupka et al. 1999)
  - Facial expressions and recognition thereof (Ekman et al.1969, Ekman 1973, Rozin & Fallon 1987, Rosenstein & Oster 2005)
  - Reactions of the Autonomous Nervous System distinguishes valency and some modes (Ekman et al. 1983)
- Reducibility and internal structure of the domain:

(1)
a. HAPPINESS
b. SADNESS
c. ANGER
d. FEAR
e. DISGUST

2. Human emotion theory

- More complex emotions arise from (1) via additional components of appraisal, cognition and intermixture (Oatley & Johnson-Laird 1987)
- Each basic emotion mode is predicated on prototypical triggers or *Universal Antecedent Events* (Ekman 1994)
- Some have been shown to be rather similar across cultures (Ekman 1994, 1999; Wallbott & Scherer 1986)
- A number of definitions has been put forward (see e.g. Ekman 1994, 1999; Boucher & Brandt 1981, Hupka et al.1999)

2. Human emotion theory

Table 1. Exemplary definitions of Universal Antecedent Events for (1)

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 threat-ened	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

2. Human emotion theory

- Nonetheless, culture-specificity is pervasive (Frijda & Mesquita 1998)
- How can this be accommodated?
- Complexity → Culture as a function of ontogeny (Oatley & Johnson-Laird 1987)
  - Infant-caregiver relations quite similar to UAEs
  - Complexity arises as individual matures
- Additional components of cognition modulate basic emotions (Turner 1999, Prinz 2004)
  - Social commitments
  - A model of self
  - Onset times

2. Human emotion theory

> […] 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)

- Linguistic expressions of emotion cannot capture the basic abstract underlying modes
- Ineffable primes
  (Wierzbicka 1992, 2009; Levinson et al. 2007)
- How to access the emotion lexicon?
  - Explicate and operationalize a subset of these additional layers
  - Target Universal Antecedent Events

3. A new approach

- Previous studies:
  1. Intuition-based lists of English lexical items
     → Native speaker inquiry, dictionaries
  2. MPI Nijmegen approach:
     Short story vignettes
     (Levinson et al. 2007, Sauter 2009)
- Our aim: Target Universal Antecedent events in a more controlled manner
- Creation of scenarios:
  - Short scenarios based on literature-based definitions (see e.g. Table 1)
  - Stimulus animacy
    (cf. Langacker 1991:305-309)

3. A new approach

- 10 Short scenarios with generic human referents
- Little to no emotionally loaded wording
  (cf. Wierzbicka 1986, 1992, 2009)

- **HAPPINESS, [+anim] Stim : sub-goals being achieved →**
  A woman returns to her childhood home where many of her friends still live. She has not seen them in a long time as she has been away. One of her best friends from her childhood comes to her.
  e.g. *delight, like, enjoy, please, charm, enthuse, amuse, interest, …*

- **SADNESS, [-anim] Stim : failure of major plan or loss of active goal →**
  A girl loses her favorite toy and is unable to find it again.
  e.g. *sadden, mourn, afflict, depress, grieve, disappoint, bore,…*

- **FEAR, [-anim] Stim : self-preservation goal threatened →**
  A man is lost in the woods at night. He hears a loud noise coming from behind some nearby trees.
  e.g. *fear, frighten, worry, terrify, startle, shock, scare, dread …*

3. A new approach

- Meaning components captured as three levelled conceptual prompts:

1. **Temporal structure**
   External onset: **NOW, PAST, FUTURE**
   Internal onset: **SHORT, LONG**
   (Johnson-Laird & Oatley 1989, Turner 2009)

2. **Degree:**
   WEAK, STRONG
   (Wierzbicka 1986, Johnson-Laird & Oatley 1989, Ekman 1999, Plutchik 2001)

3. **Relational evaluation:**
   SELF, OTHER
   (Johnson-Laird & Oatley 1992, Turner 2009)

4. **ELSE**

3. A new approach

- Three versions:
  1. Long form (all 10 subcomponents)
  2. Medium form (NOW, SHORT, STRONG, ELSE)
  3. Short form (NOW only)
- Scenarios presented orally in pseudo-randomized order across multiple sessions with one speaker
- Participants describe situations by referring to their own emotional ontologies
- Data collected:
  - Citation form
  - Naturalistic usage in simple declaratives
  - Approximate post-hoc English translations
  - Distributive restrictions
  - Transparent interlexical relations

3. A new approach

Target domain: FEAR

Stimulus: animate

A woman encounters a robber.

1. [NOW] Which words could be used to describe how the robber makes the woman feel?
2. [SHORT LATENCY] Which words could be used to describe the way the robber made the woman feel by suddenly appearing in front of her?
3. [HIGH DEGREE] 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?
4. [ELSE] Which other words could be used to describe how the robber makes the woman feel?

4. Proof of Concept: The psych alternation

- The psych domain is characterized by the existence of alternating stimulus- and experiencer-directed structures in which both arguments are governed by the verb:

(2) a. *Global warming preoccupies George.*
b. *George is preoccupied with global warming.*
(Landau 2010:54)

(3) a. *Global warming worries George.*
b. *George worries about global warming.*

- These alternations seem to be widespread
- Languages differ with respect to the morphological structure of the verbal inventory in the psych domain.

4. Proof of Concept: The psych alternation

– Alternation morphology differs across languages:

(4) *Main alternation types*

a.	**Icelandic:**		
	Transitive EO	→	Intransitive ES
	gleðja ‘please‘		*gleðja-st* ‘please-MID‘
b.	**Korean:**		
	Intransitive ES	→	Transitive EO
	pwukkulepta ‘be.ashamed’		*pwukkulep-key hata* ‘be.ashamed-ADVR do’
c.	**Finnish:**		
	Intransitive ES	↔	Transitive EO
	huolest-ua ‘worry-INCH’		*huole-ttaa* ‘worry-CAUS’
c'.	Intransitive ES	→	Transitive EO
	huolest-ua ‘worry-INCH’		*huolest-u-ttaa* ‘worry-INCH-CAUS’

4. Proof of Concept: The psych alternation

– In fact, this is likely to be a typological parameter (Nichols et al. 2004)

1. Intransitivizing languages

a. Greek mediopassive

x *enđiaféri* y ‘x interests y’

y *enđiafér**ete 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. Transitivizing 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 (Double derivation, auxiliary change, conversion, mixed)

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

4. Proof of Concept: The psych alternation

- Out of the two alternants created, EO verbs may show exceptional syntactic properties (Belletti & Rizzi 1988, Pesetsky 1995, Haspelmath 2001, Verhoeven 2014, Temme & Verhoeven 2016)
  - Linearization
  - Passivization
  - Extraction
  - Binding
  - ...
- This is a contrast in the verbal lexicon
- Crucially, *it does not appear in all languages*

4. Proof of Concept: The psych alternation

(5) **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)

(6) **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.)

Further typological difference in the lexicon

Ls with a subclass of EO verbs
with exceptional syntactic properties

yes	*no* (at least for ACC EOs)
German	Chinese
Greek	Turkish
Icelandic	Yucatec Maya
Hungarian	Korean
intransitivizing Ls	**transitivizing Ls**

(see Verhoeven 2010, 2014, Temme & Verhoeven 2016)

4. Proof of Concept: The psych alternation

– Main research questions:

1. Do all languages show alternations in their psych domain?

2. Do the typological differences with respect to the morphology influence the semantics and syntax of psych verbs?

3. Is the special syntactic behavior of EO predicates restricted to languages with intransitivizing morphology?

4. Proof of Concept: The psych alternation

- Initial phase: sample of languages with well-known features and good documentation
- Detransitivizing, Ψ-effects: **Icelandic, Spanish**
  (Zaenen et al. 1985, Franco 1990, Landau 2010)
- Transitivizing, no Ψ-effects: **Korean, Chinese, Turkish**
  (Özsoy 2009, Kutscher 2009, Verhoeven 2010, Verhoeven 2014, Temme & Verhoeven 2015)
- Mixed type, status of Ψ-effects disputed: **Finnish**
  (Nelson 1999, Pylkkänen 2000, Landau 2010, Sakuma 2013)
- No prior classification: **Bété**
- Eliciation of pairs of alternating psych verbs with inverted structures
- Morphological and syntactic coding

5. First results

- Extensive inventories of alternating psych verbs
- Current database contains around ~1200 items

Table 1. Distribution of base orientation in sample (n = 465 pairs)

Language	Bases total	%ES	%EO	%Double
Icelandic	**30**	6.67	90	3.34
Spanish	**119**	0	100	0
Korean	**116**	91.38	0	8.62
Chinese	**75**	92	2.67	5.34
Turkish	**64**	68.75	12.5	18.75
Finnish	**61**	47.54	32.79	19.67

base = morphologically less complex alternant (Nichols et al. 2004)

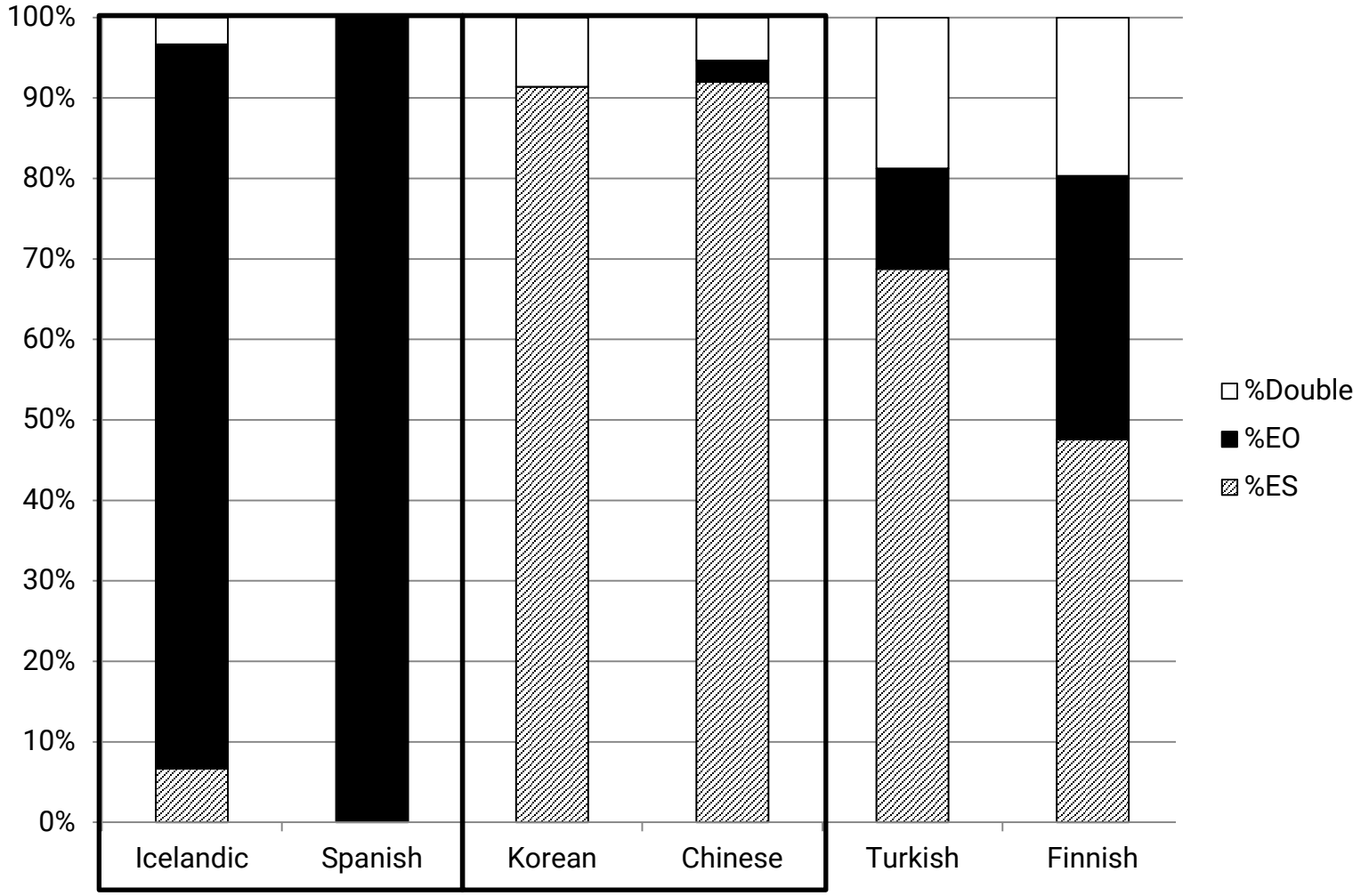
- For each language, our inventories contain predicates commonly seen in the literature

5. First results

- We also found many verbs which lack straightforward English equivalents or which differ from their translation equivalents in crucial respects:
- Lexically, e.g.:
  - Icelandic: ***trylla*** ‘make lose control’
  - Chinese: 后怕 ***hòupà*** ‘be afraid after the fact’
  - Turkish: ***umutlanmak*** ‘become hopeful about/from’
- Semantically, e.g.:
  - Spanish: ***asustar*** ‘frighten’ (covert CAUS factor)
  - Korean: 무섭다 ***mwusepta*** ‘fear’ (pure state)
  - Finnish: ***pelottaa*** ‘frighten’ (overt CAUS factor)
- Argument structure alternations are borne out in our sample as well

5. First results

Figure 1: Visual representation of base distribution across sample languages (n = 465 pairs)



5. First results

- Clear reflection of the typological parameter: Intransitivization in IE languages vs. Transitivization in Asia (Nichols 2004, cf. also Cysouw 2011)
- However, patterns are not always clear-cut
- Finnish bases are distributed across patterns
- ES bases around 1.5 times as frequent as EO bases
- Base orientation as a predictor for psych phenomena?

(7) a. *Ystävä-n näkeminen innosta-a nais-ta.*
friend-GEN seeing:NOM excite-3.SG woman-PTV

`Seeing the friend excites the woman.‘

b. *Nais-ta innosta-a ystävä-n näkeminen.*
woman-PTV excite-3.SG friend-GEN seeing:NOM

`The woman is excited seeing the friend.‘

5. First results

- Bété is absent from Table 1
- Stimulus argument is not governed by the verb across alternants → No psych alternation

(8) a. *Jʊ́rʊ́ jɛ́ cǐ́cɛ́jī sɪ̄bā (dàgʊ́ kā́dɔ́ ɔ́ jɛ́).*
anger PRF little.one sting (brother big POSS reason)

`The little brother is enraged because of the big brother.‘

b. *Dàgú kā́dɔ jɛ́ cǐ́cɛ́jī jʊ́rʊ́ sɪ̄b-à.*
brother big PRF little.one anger sting-CAUS

`The big brother has enraged the little brother.‘

(9) a. *Ɲɛ́ɲɛ́lù súrú gʊ́ mʊ́ńá wʊ́.*
toy pour child joy onto.

`The toy pleases the child.‘

b. *Mʊ́ńá jɛ́ gʊ́ wʊ́ súr-ó.*
joy PRF child onto pour-MID

`The child was pleased.‘

5. First results

- Experiencer constructions in Bété tend to show a certain structure:
  - The experiencer tends to be an object or the possessor of a bodypart (cf. Chinese)
  - The emotion is usually specified in nominal form
  - Its effect is expressed via semantically bleached general action predicates.
  - Verbs may convey emotion meaning via metaphor, e.g. ‘sting’ or ‘seethe’ for anger.
- Dyadic structure → No slot for a governed expression of the stimulus in transitive form?
- **Both Finnish and Bété merit further research w.r.t. the psych alternation and its interaction with morphology**

6. Conclusion & Outlook

- Patterns in the literature are replicated
- A more holistic picture is needed
- We don‘t need translation equivalents in cross-linguistic research
- Other applications

- Possible addition of a fourth language type:
  No psych alternation due to complex structures in psych expressions, awaiting further empirical substantiation
- What constitutes a psych predicate?
- Influence of the internal structure of psych predicates

6. Conclusion & Outlook

- Next step: Less well-documented languages
- In particular, all intransitivizing languages in our sample have close ties to Standard Average European
- More languages coming: Cabécar, Hungarian, Tagalog, Georgian, Tamil, Greek, Romanian, Yucatec Maya, Khoekoegowab
- Goal: Large typological database of alternating psych predicates (30 languages from 5 macro-areas)

- Construction of parallelized rating studies based on database material
- Incorporation into a typologically adequate and empirically founded theory of psych expressions

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Thank you!

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