

The Sedimentation and Motivation (SEaM) model in an Ecological Theory of Metaphor

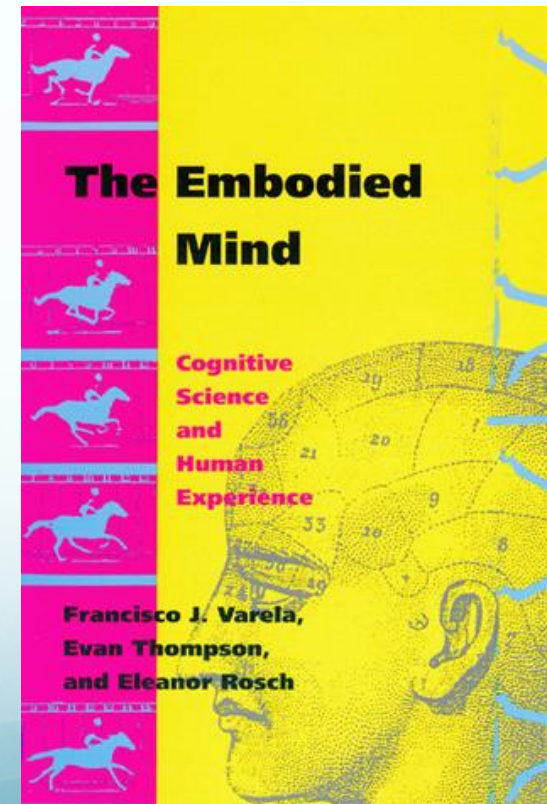
Jordan Zlatev
Lund University

CCS Seminar 1/9 2017

Summer School of Linguistics 2017
Litomyšl

Preamble

- I was invited to give a talk on metaphor (from a cognitive semiotic perspective) at the 6th Specialized RaAM Seminar “Ecological Cognition and Metaphor”, May 18-19, 2017
- The theme of the conference was “4E-cognition”:
 - Embodied
 - Enacted
 - Embedded
 - Extended



Theme

“The basic claim in new approaches to cognition (sometimes labelled 4E-cognition) is that **cognition cannot be reserved to individual processes in the head** (and body); rather cognition is seen as “a doing”; it is not an underlying process making action possible, it is **part of the action itself**.

Likewise metaphor is not just to be seen as a ‘window into the mind’ but as **enacting a special mode of cognition constrained by the environment**. In short, an ecological perspective to cognition seeks to explore thought, feeling and action as inter-related dimensions of an agent-environment system.”

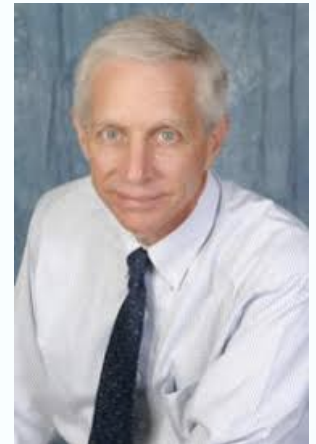
Outline

1. Three (re)current debates in (cognitive) metaphor theory
2. The three levels of the Sedimentation and Motivation (SEAM) model – applied to metaphorical meaning
3. A study of motion–emotion metaphors (e.g. *I feel into a depression*) across six different languages
4. Does SEAM meet the “4Es” of an ecological theory of metaphor?

1. Three debates in metaphor theory

(1) On what level?

- **Conceptual:** “a cross-domain mapping of structure from a source domain to a target domain, where the two domains are regarded as different in kind” (Johnson 2010: 407).
- **(Conventionalized) discourse:** e.g. *our European home, the bastion of democracy* - intermediary in their conventionality between novel metaphors relying on analogical reasoning and literalized expressions, “dead metaphors” (Zinken 2007).
- **Contextual:** “new metaphoric expressions dynamically emerge, are elaborated, and are selectively activated over the course of a conversation” (Kolter et al. 2012: 221).



(2) How universal?



- **Essentially:** especially, primary metaphors (Grady 1997) such as AFFECTION IS WARMTH “acquired unconsciously through our bodily engagement with our environment” (Johnson 2010: 410)
- **Minimally:** extensive variation across cultures and languages (Maalej 2004; Kimmel 2004; Littlemore et al, this conference)
- **Intermediately:** “Can the cognitive linguistic view of metaphor simultaneously explain both universality and diversity in metaphorical thought?” (Kövecses 2005), **Indeed, can it?**

(3) How stable?

- **Essentially:** “a neural learning mechanism produces a ***stable, conventional system of primary metaphors that tend to remain in place indefinitely*** within the conceptual system and that are independent of language” (Lakoff & Johnson 2003: 255-256).
- **Minimally:** “***rather than conceiving of metaphors as discrete units they should be regarded as a process of meaning construal***” (Kolter et al., 2012: 221; cf. Gibbs and Cameron 2008; Müller 2008)

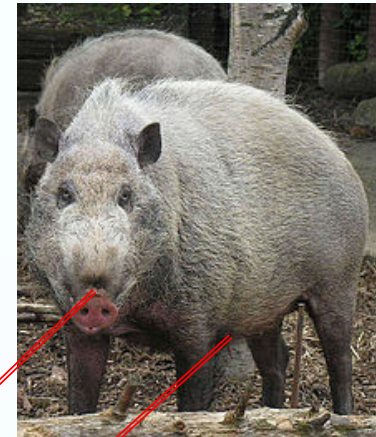
Proposal

- The **SEdimentation and Motivation (SEaM)** model of language and sense-making can inform, if not resolve, these debates.

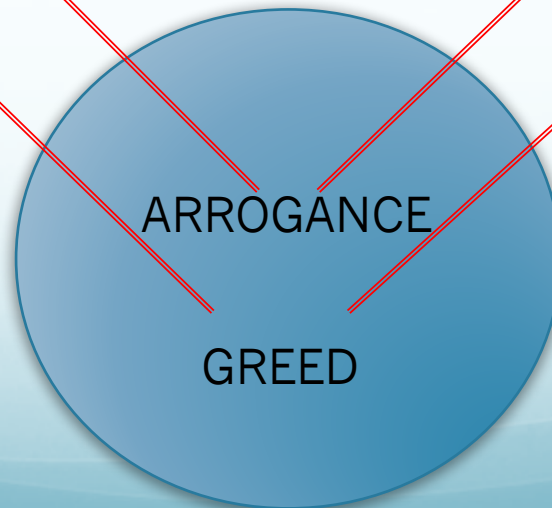
The SEAM model

- Distinguishes clearly between **signs and other meanings** (e.g. affordances, perceptual categories) (Sonesson 2007; Zlatev 2009; Faur 2013)
- Agrees with (experiential) semantics on the importance of **prelinguistic and pre-conceptual experience**, but distinguishes this from the **sedimented conventions** (Blomberg and Zlatev 2014; Devylder 2017)
- Agree with structural semiotics that **metaphors are primarily signs** – but not arbitrary ones, and with Peircian semiotics that they are **based on iconicity** (Sonesson 2015)

“He is (such) a pig!”



Gestalt iconicity



A possible definition

- Metaphor involves
 - a) The application of a **sign /a/ with primary denotation A**
 - b) To **construe B** not typically denoted by /a/
 - c) Based on **Gestalt iconicity** between A and B
 - d) That is highly **dependent on context**
 - e) Serving **expressive and communicative functions.**
- With time, the $A \approx B$ iconic ground may become attenuated, and B becomes progressively a second conventional denotation of A (*relative de-metaphorization*)

Claims

1. Metaphors can be more or less stable.
2. Metaphors can be more or less universal.
3. Metaphors can occur in different semiotic modes: language, gesture, pictures, dance ... (possibly also music).
4. Metaphors are essentially (second-order) **SIGNS**, with **a material form that is differentiated by users from what these signs EXPRESS**, and not “cross-domain mappings”, “neural circuits”, “embodied simulation” etc.

2.Sedimentation and Motivation

“Motivation”



- The *Fundierung* relation in phenomenology (Husserl 1900; Merleau-Ponty 1962: 458)

“...this **two-way relationship** that phenomenology has called *Fundierung*: the **founding term, or originator**—time, the unreflective,... perception—is primary in the sense that **the originated** is presented as a determinate or explicit form of the originator, ..., and yet the originator is not primary in the empiricist sense and **the originated is not simply derived from it**, since it is through the originated that the originator is made manifest.”

A key “originator”: embodied intersubjectivity

(Zlatev & Blomberg 2016)

Without ever denying the eminently intersubjective character of language, phenomenologists have often **endeavoured to unearth pre- or extra-linguistic forms of intersubjectivity**, be it in simple perception, tool-use, emotions, drives, or bodily awareness.” (Zahavi 2001: 227)



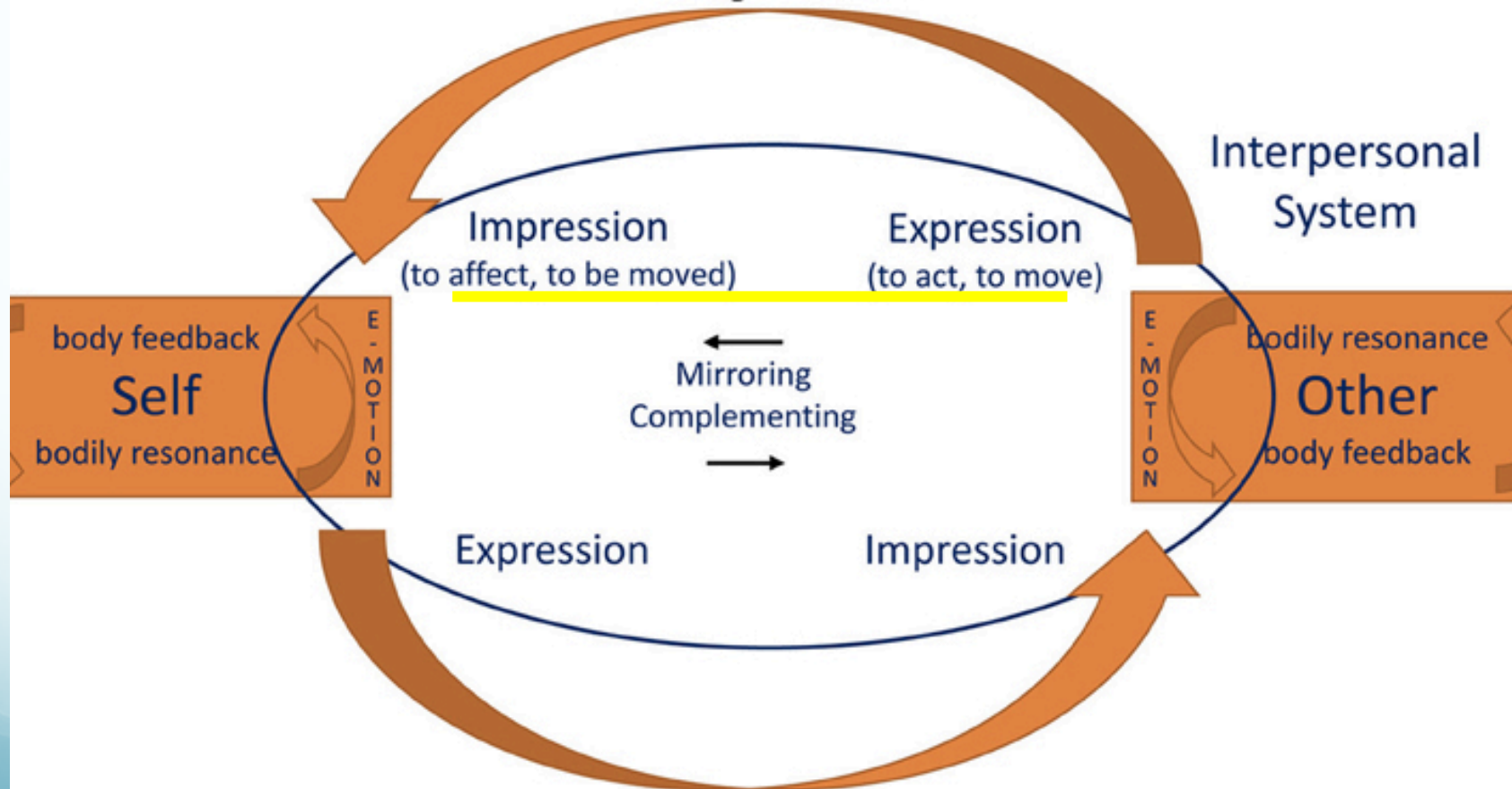
The Lived body: *Leib-Körper*

“I am experiencing myself in a manner that anticipates both the way in which an Other would experience me and the way in which I would experience an Other... **The possibility of sociality presupposes a certain intersubjectivity of the body.**” (Zahavi 2003: 104)



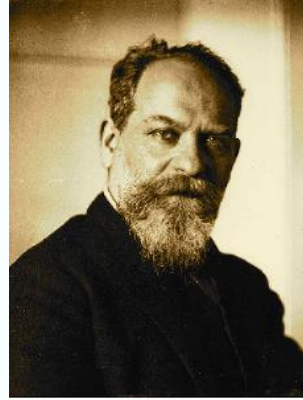
Emotions: blends of an internal “affective” component, and an outward-directed “emotive” component: The felt affect of the *Leib* is displayed in its *Körper*’s emotive expression.

Interbodily resonance



(Fuchs & Kochs 2014)

“Sedimentation”



The classical application of this notion is Husserl’s influential analysis in *The Origins of Geometry* (Husserl, [1936] 1970), according to which **propositional intentions are sedimented upon practical actions and perceptual intentions.**

“Given that X and Y are two semiotic (meaning-bearing) structures, **X is sedimented upon Y**, if and only if

- a) X is more stable and abstract than Y,
- b) Y is more experientially rich than X,
- c) X emerges from a number of temporally preceding acts of Y,
- d) Y is latent, and can be reactivated in specific contexts.”

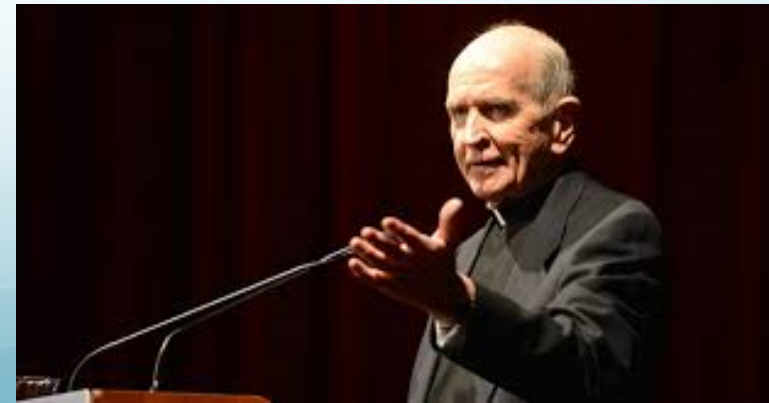
(Zlatev & Blomberg 2016: 78)

“Experience and Judgement”

“We can isolate the form that comes about in this transaction; we can isolate **S is p** from this situation. ...

The syntactic form is **the molted skin or carapace shed and left over, abstracted, from any number of such intelligent and public performances”**

(Sokolowski 2008: 61)



Not two, but (at least) **three levels**

(Coseriu 1985; Zlatev 2011; Faur 2013; Blomberg & Zlatev 2015)



Perspectives				
Levels	Activity	Competence	Product	
3	Universal	Speaking in general	Encyclopedic and logical	Totality of utterances
2	Historical	Speaking a particular language	Linguistic	“Lexicon and grammar”
1	Situated	<i>Discourse</i>	Communicative	Text

Three-level knowledge

- 1) **Situated:** “norms of discourse which do not directly concern the construction of the linguistic expression as such, but rather ... features of certain types of texts or with respect to certain persons” (Coseriu 1985: xxx)
- 2) **Historical:** never one single *langue* but a dia-system: “an ensemble of “linguistic systems” between which there is at every stage co-existence and interference” (Coseriu 1967: 33)
- 3) **Universal:** “...a number of principles of thought and the general knowledge of the world” (Coseriu 1985: xxix)

Sedimentation and Motivation (Generalized beyond language)

Level of semiosis	<i>Sign use</i> ←	→ <i>Sign systems and experiential structures</i>
Situated	Creative use	Emerging conventions
Historical	Conventional use	Sedimented conventions
Universal	Typical (cross-cultural) use	World knowledge, Embodied (inter)subjectivity

The diagram illustrates the relationship between sign use and sign systems/experiential structures across three levels of semiosis. Red arrows indicate that sign systems and experiential structures influence sign use, while blue arrows indicate that sign use influences sign systems and experiential structures.

Applications of the SEAM model

- Analysis of **non-actual motion (NAM) expressions** like *The road runs through the forest* across different languages (Blomberg 2014; Blomberg 2015; Blomberg & Zlatev 2015)
- Analysis of **non-actual separation (NAS)** expressions like *My life was shattered into a million pieces* (Devylder, Zlatev, Blomberg 2017)
- Analysis of **motion-emotion metaphors** (Zlatev, Blomberg & Magnusson 2012), combining the above in a **broad notion of motion** (Zlatev, Blomberg & David 2010).

Three levels of metaphoricity

- 1) Situated:** “metaphors ... should be regarded as **a process of meaning construal** in which new metaphoric expressions dynamically emerge, are elaborated, and are selectively activated over the course of a conversation” (Kolter et al. 2012: 221)
- 2) Historical/Conventional:** “**metaphoremes** combine specific lexical and grammatical form with specific conceptual content and with specific affective value and pragmatics.” (Cameron & Deignan 2006: 674)
- 3) Universal:** Pan-human structures of embodied (inter)subjectivity, founding/grounding meaning-making in interaction with others and the world – **which motivate the emergence of the above, without being metaphors per se.**

Situated level, example



A metaphor for metaphor...



Situated level, example



Situated-to-Historical level

T: go back to your memory
of the tree that you're trying to draw
because that's tended to
to look like a lollipop
hasn't it

The teacher makes an explicit comparison between the drawing and *a lollipop*. A couple of seconds later, she changes the grammar and reduces the form:

T: when I was a very young teacher
and I kept on saying to a little girl
will you please stop doing *lollipop trees*

The change in form produces a metaphorical phrase *lollipop trees*, which not only refers to the drawings, but does so with a particular evaluative force and critical overtone. The emergence of metaphorical phrases is constrained by the grammatical affordances of the language and driven by the contingencies

Universal level, examples

- **Affordances** (Gibson 1979) – potentialities for action, not just for me but for anyone (like me). Cultural artefacts contain “references to others” (Möttönen 2016)
- **Imaginations**: “What makes the experience re-presentational is precisely that its object is *mentally evoked or brought forth while also phenomenally absent*: it is not that the object is mentally brought forth *again*. The latter characteristic belongs to memory but not to every type of re-presentational experience (such as fantasy). (Thompson 2007: 288)

3. Motion-emotion metaphor(eme)s

What is (actual) motion?

From the perspective of the analysis of (the invariants of) experience – *phenomenology* (cf. Husserl 1909), motion as such can be defined as the experience of continuous change in the relative position of an object (the figure) against a background, in contrast to stasis – where there is no such change – and in contrast to a *dis-continuous* change, as when a light suddenly lights up in position A, ‘disappears’ and then appears in position

Three independent parameters

- I. Translocative vs. Non-translocative motion
- II. Bounded vs. Unbounded motion
- III. Un-caused vs. Caused motion

(Zlatev, Blomberg & David 2010)

Types of motion situations

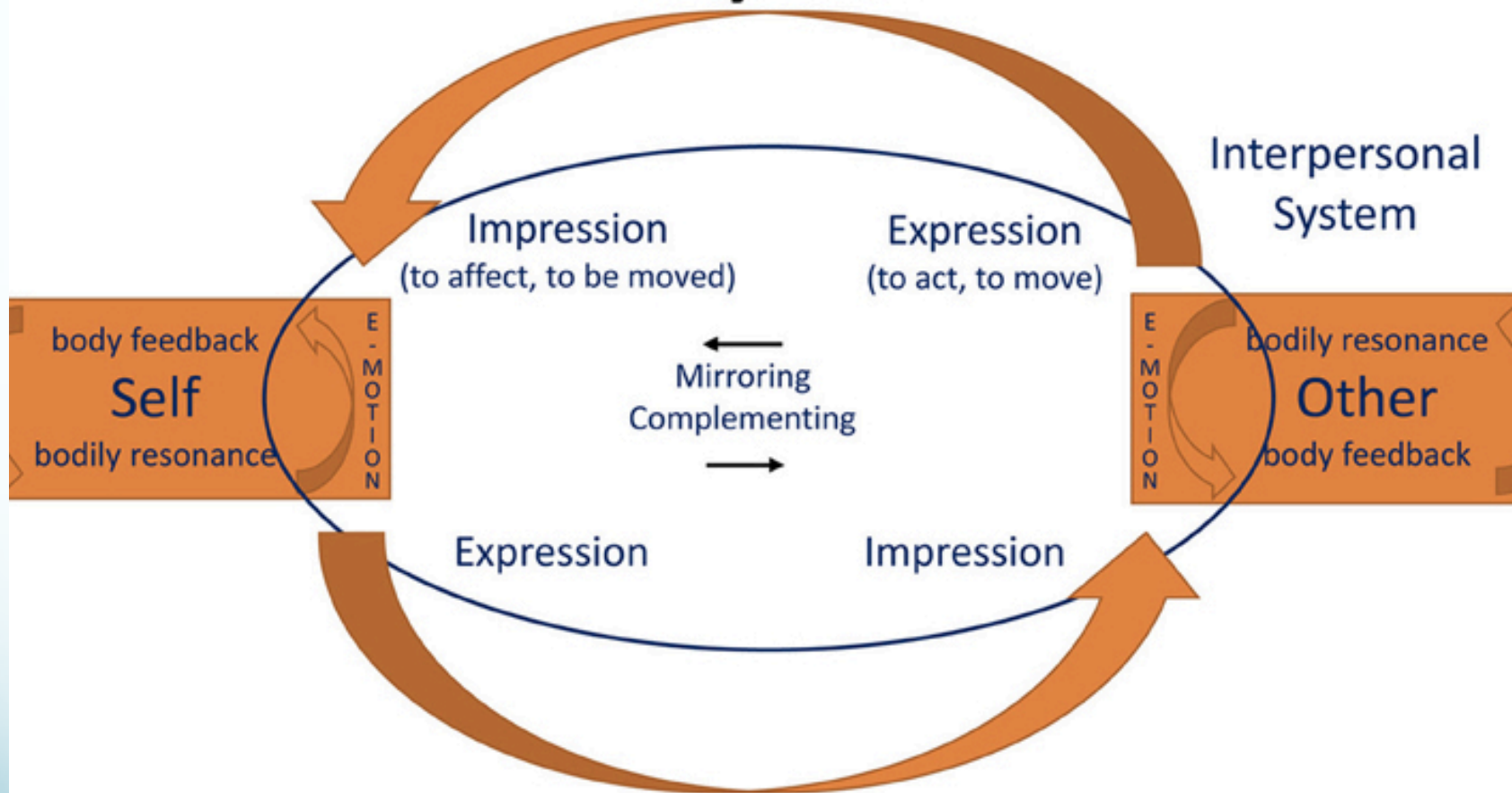
Table 1. Illustration of the expression of 8 motion situation types in English; F = Figure, LM = Landmark, A = Agent, View-C = Viewpoint centred, Geo-C = Geocentric, Obj-C = Object centred Frame of Reference

	-CAUSED	+CAUSED
+TRANSLOCATIVE +BOUNDED	F goes to LM	A throws F into LM
+TRANSLOCATIVE -BOUNDED	F goes away (View-C) F goes up (Geo-C) F rolls forward (Obj-C)	A takes F away (View-C) A pushes F upward (Geo-C) A pushes F forward (Obj-C)
-TRANSLOCATIVE +BOUNDED	F breaks (up/down)	A breaks F (up/down)
-TRANSLOCATIVE -BOUNDED	F waves	A waves F

What is emotion?

- **Bodily theories** (e.g. James 1884): feelings of bodily changes where the bodily experience is primary; we do not tremble *because* we are scared of the lion, but we tremble, and this is what we feel as our fear.
- **Appraisal theories** (e.g. Solomon 1976; Lyons 1980): Emotion as an act of evaluation or appraisal of a situation.
- **Synthetic approach**: “affective responses to certain kinds of events of concern to a subject, implying conspicuous bodily changes and motivating a specific behavior” (Fuchs & Koch 2014: 2).

Interbodily resonance



(Fuchs & Kochs 2014)

(E)motion

- Intimate connection between emotional life and bodily experience (Williams & Bargh 2008; Zhong & Leonardelli 2008; Fuchs 2012; Meier et al. 2012; Fuch & Koch 2014)
- A salient **dimension of bodily experience is that of motion**, either performed or observed.
- As motion and **emotion do not constitute “two domains ... regarded as different in kind”** (Johnson 2010: 407), the relation between them cannot be characterized as “cross-domain mapping”.

Motion-emotion metaphoremes (MEMs)

- **Expression-types** blending motion and emotion, on the Historical level, instantiated in particular expressions

(1) *My spirit soared.* (Eng)

(2) *Mitt humör steg.* (Swed)

my mood rise.PST

‘My mood got better.’

(3) *Wo de qingxu gaozhang.* (Mand. Chinese)

I GEN spirits rise

‘I am getting excited.’

An earlier comparative study

(Zlatev, Blomberg, Magnusson 2012)

- Analyse MEMs on four differentially related languages/cultures:

English > Bulgarian >> Thai
Swedish

- **Predictions from the SEAM model**
 1. Some metaphorememes strongly motivated by the Universal level will be present in all languages
 2. There will be extensive variation, and the more distant the languages – the more variation

Procedure

Step 1. Identify as many verb-based expressions of emotion as possible (using native speaker intuitions, dictionaries, corpora)

Step 2. Select based on the following criteria

- a) The Figure-expression refers to the self (or part of it), and there is no actual motion. ~~*She trembled with fear.*~~
- b) If the Figure-expression is not presented as moving, but only as affected. ~~*He was gripped by fear.*~~
- c) Motion is expressed by the verb-root (also), and not only in a verb-satellite (prefix or particle). ~~*Mary was worked up.*~~
- d) Both the motion and emotion interpretations (depending on the nature of the figure-expression) are accessible to naïve speakers. ~~*Ivan e do volen*~~ ‘Ivan was pleased.’

Procedure (cont.)

- **Step 3.** Group individual motion-emotion expressions into **types** (= **metaphoremes**) based on differences in (a) the lexical semantics of the verb, (b) verb-satellite (particles or affixes), (c) adpositions, (d) the grammatical construction (e.g. intransitive vs. transitive)
- **Step 4.** Classify according to the taxonomy of motion situations (Zlatev et al. 2010), using only one situation type per metaphoreme, based on what appears to be the basic (most unmarked) form.
- **Step 5.** Note whether a given MEM has a “near-equivalent” in one or more of the other languages, based on *overlap of the literal (motion), rather than the metaphorical (emotion) senses.*

English: 38 MEMs

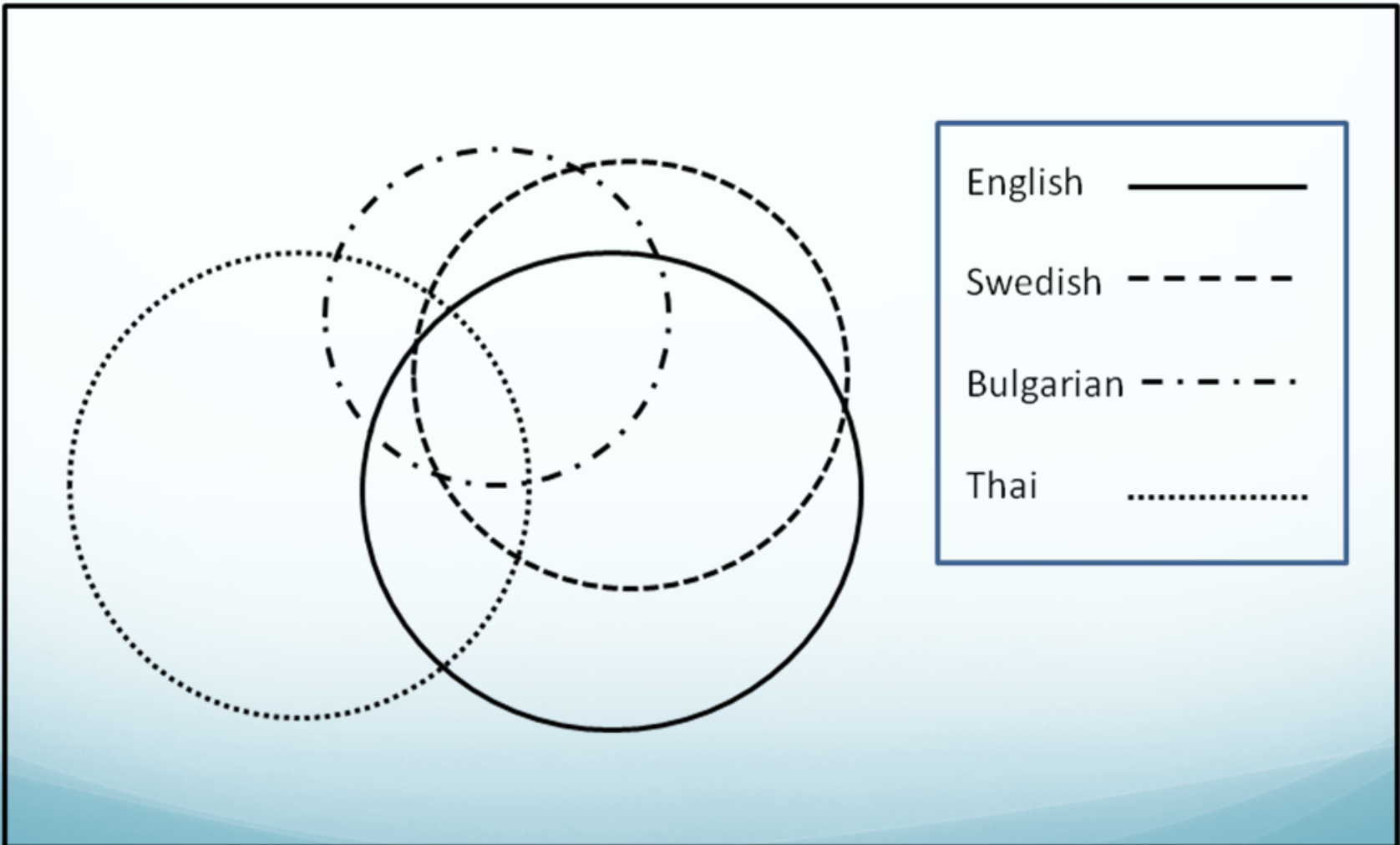
	Self motion	Caused motion
+Transloc/+Bound	F falls into LM * F plunges into LM *	C moves F to LM (S) C drives F to LM (S, B) C brings F to LM (B)
+Transloc/-Bound	F soars * F rises (S, B, T) F sinks (S) F creeps (S) F drops (S, B, T)	F is downcast * C pulls F (S, B) C attracts F (S, B) C repels F (S, B) F is uplifted (S, B)
-Transloc/+Bound	F breaks down * F breaks (S) F collapses (S) F explodes (S)	C puts F off * C throws F off F's feet * C upsets F * C shatters F (S, B, T) C knocks F off F's feet (S) C knocks F out (S) C floors F (S) C tears F apart (B)
-Transloc/-Bound	F flutters * F swells (S)	C presses F * F is unperturbed * C makes F shrink * C moves F (S) C shakes F (S, B, T) C stirs F (S, B, T) C agitates F (S) C calms F (S, B) C relaxes F (B, T)

MEM overlap

Language-to-language overlap	<i>English</i>	<i>Swedish</i>	<i>Bulgarian</i>	<i>Thai</i>
English	38 (12*)	23	14	6
Swedish	21	27 (5*)	11	6
Bulgarian	13	11	19 (5*)	7
Thai	6	6	7	31 (24*)

- (4) **Pre-mina** mi
 PRF-pass.PAST 1p.SING.DAT
 ‘Passed over for me.’ ≈ I feel better (-Caused, +Trans, +Bound)
- (5) **Natroenie-to idva-še**
 mood-DEF come-PAST.PROG
 ‘The mood was coming.’ (-Caused, +Trans, -Bound)
- (6) **Toj me po-bärvka**
 He 1p.SING.ACC IMP-stir.PRES
 ‘He stirs me on.’ ≈ He drives me crazy. (+Caused, -Trans, -Bound)
- (7) **Pesen-ta me raz-välnuva**
 Song-DEF 1p.SING.ACC PRF-ripple.PAST
 ‘The song wavered me.’ ≈ moved me (+Caused, +Trans, -Bound)
- (8) **Samota-ta go po(d)-tisna**
 Loneliness-DEF 3p.MASC.ACC under-press.PAST
 ‘Loneliness depressed him.’ (-Caused, -Trans, -Bound)

MEM overlap



Issues

- “Convenience sample”
- No distinction between Figure = Self (e.g. *I am falling for her*) and Figure = Part of self (e.g. *My heart is soaring*)
- Not a truly systematic way to compare “near equivalence” across languages
- Predominant reliance on (near) native speaker intuition, rather than on attested usage (in corpora)

Current study

- 8 differentially related languages:
 - **English/Swedish**
 - **Spanish/Bulgarian**
 - **Finnish/Estonian**
 - Mandarin Chinese/Thai
- Maintain distinction between Figure = Self (e.g. *I am falling for her*) and Figure = Part of self (e.g. *My heart is soaring*)
- All examples derived from (near) native speaker intuition also checked against attested usage in corpora.
- Introduce a system of **Meta-Language Types (MLTs)**, for a systematic way to compare “near equivalence” across languages (Jacobsson 2015; Paju 2016)

Meta-language Type (MLT) scheme

MLT label

1 MEM per MLT

2 MEMs per MLT

	ESTONIAN	FINNISH	ENGLISH	SWEDISH	BULGARIAN	SPANISH
LIFT SELF UP	0	0	F is uplifted (16)	F upplyfts (43)	C vüz-diga F (13); C vüz-visjava F nad (14)	0
LIFT SELF-PART UP	tõstab FP (43)	kohotti FP (29); mieltäkohottava (30)	0		C po-vdiga FP (15); C vüz-diga FP (16); C vüz-visjava FP (17)	levantata FP (29)
PUSH AWAY SELF	tõukab eelmale F (38); eemaletõukab F (37)	0	repels F (15)	stöter bort F (5) fränstöter F (42)	C ot-bläskva F (18)	repele F (28)
PUSH AWAY SELF-PART	0	0	0	0	0	0

No MEMs per MLT

3 MEMs per MLT

Total number of MLTs: 202 (142 instantiated)

	-CAUSED	+CAUSED	
+TRANSLOCATIVE +BOUNDED	22 (F falls into LM)	28 (C throws F into LM)	80
+TRANSLOCATIVE -BOUNDED	12 (F rises)	18 (C lifts LM)	
-TRANSLOCATIVE +BOUNDED	16 (F breaks)	38 (C breaks F)	124
-TRANSLOCATIVE -BOUNDED	32 (F swells)	36 (C waves F)	

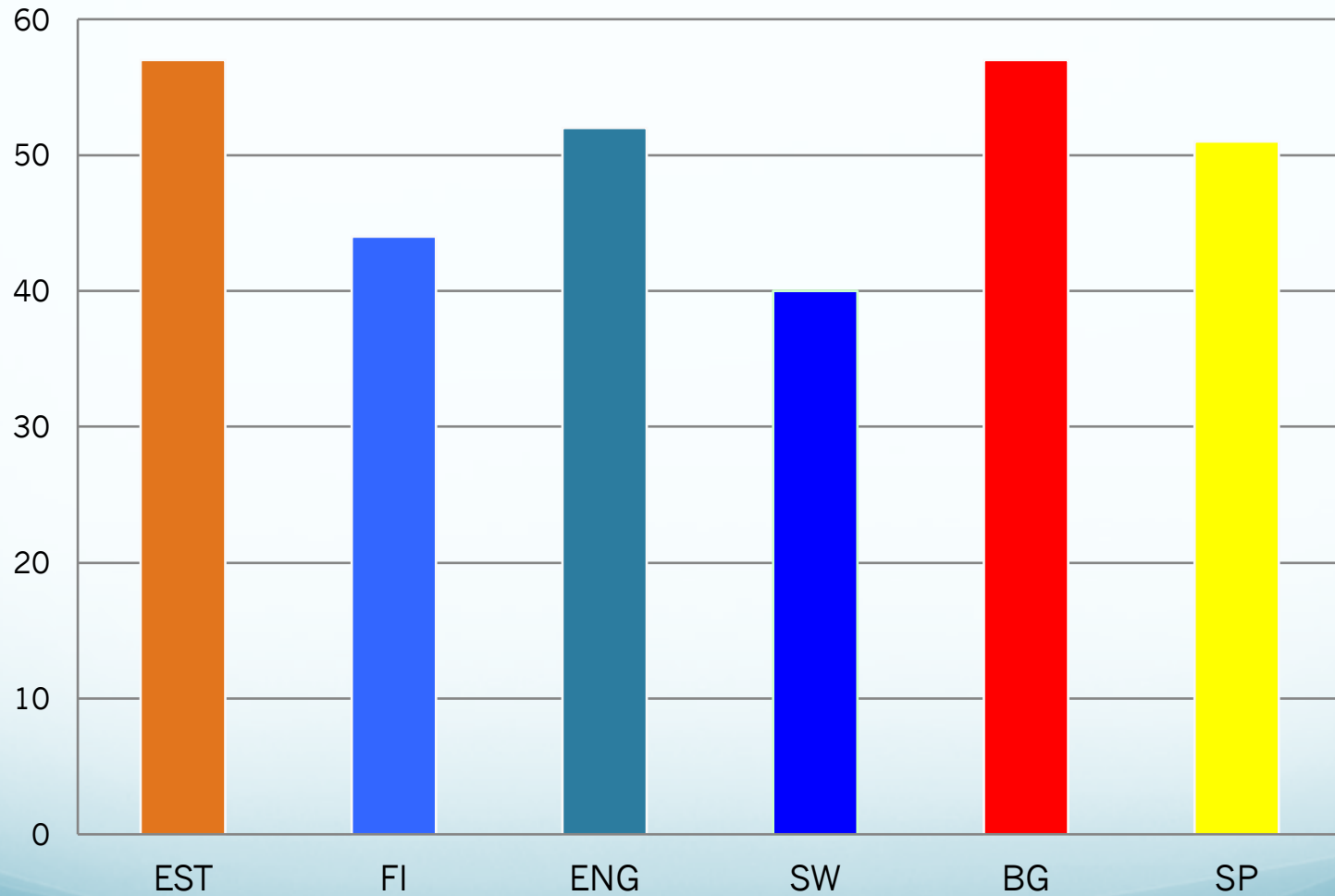
82

<

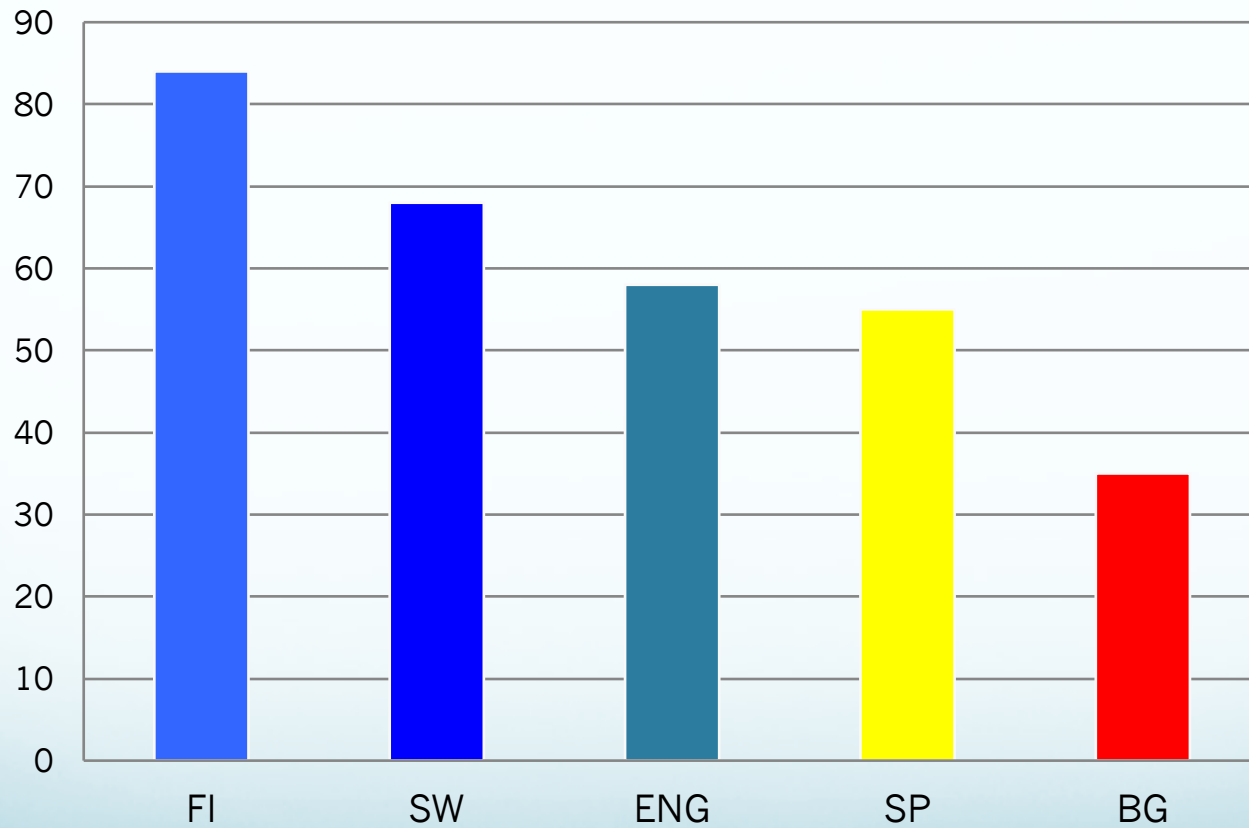
122

F = Figure, LM = Landmark, C = Cause

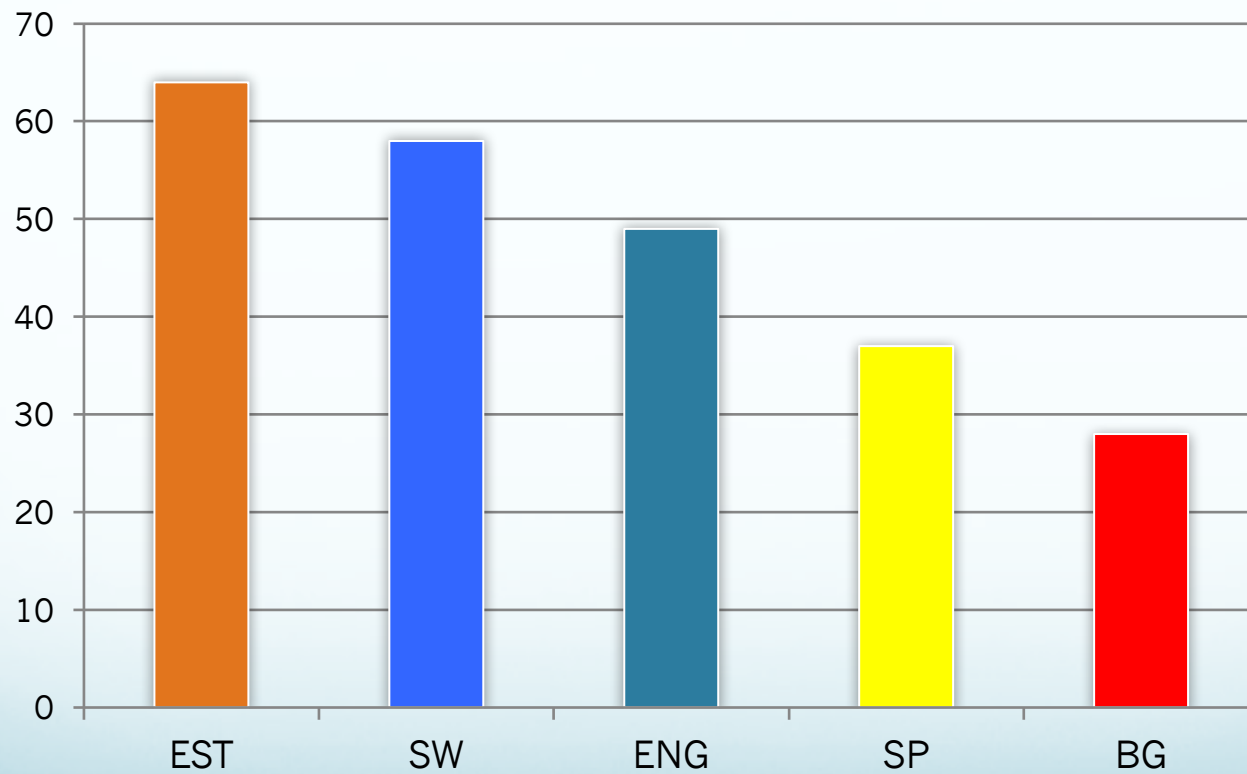
Total number of MLTs per language



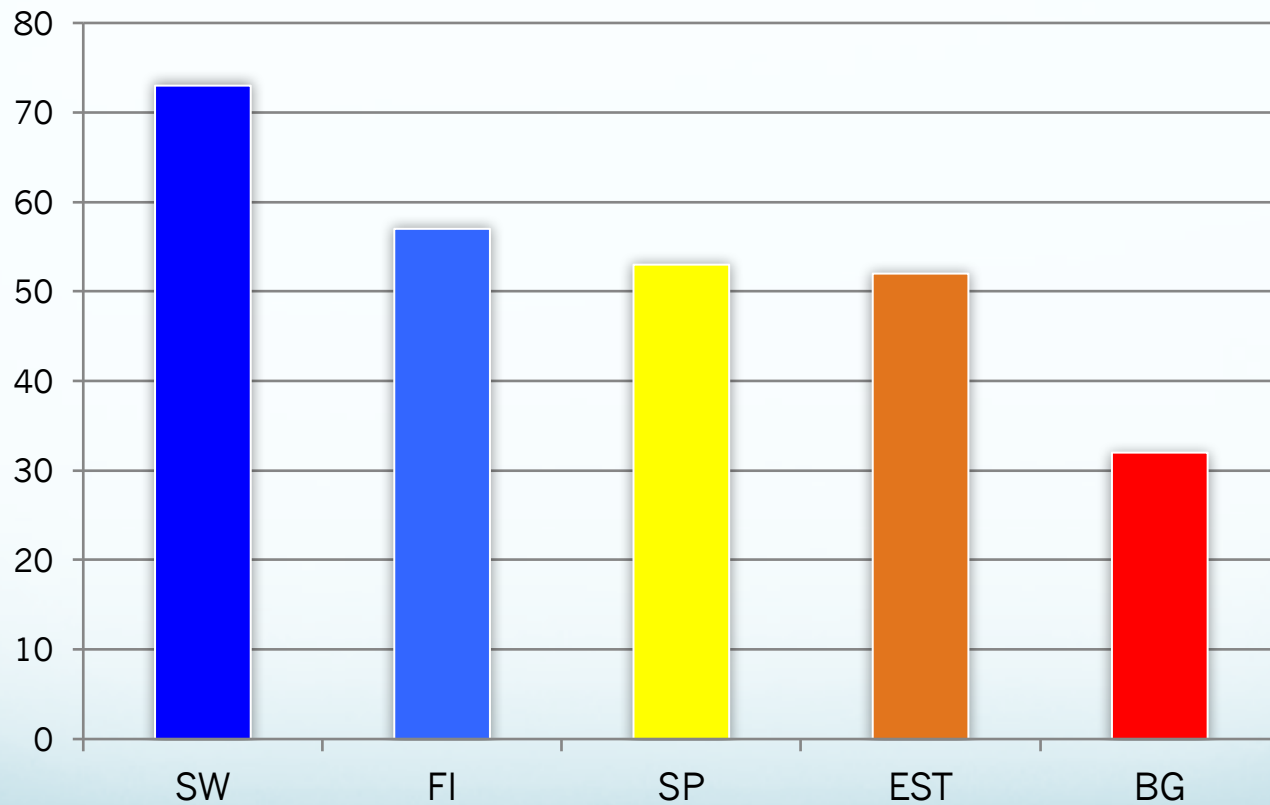
% overlap with Estonian



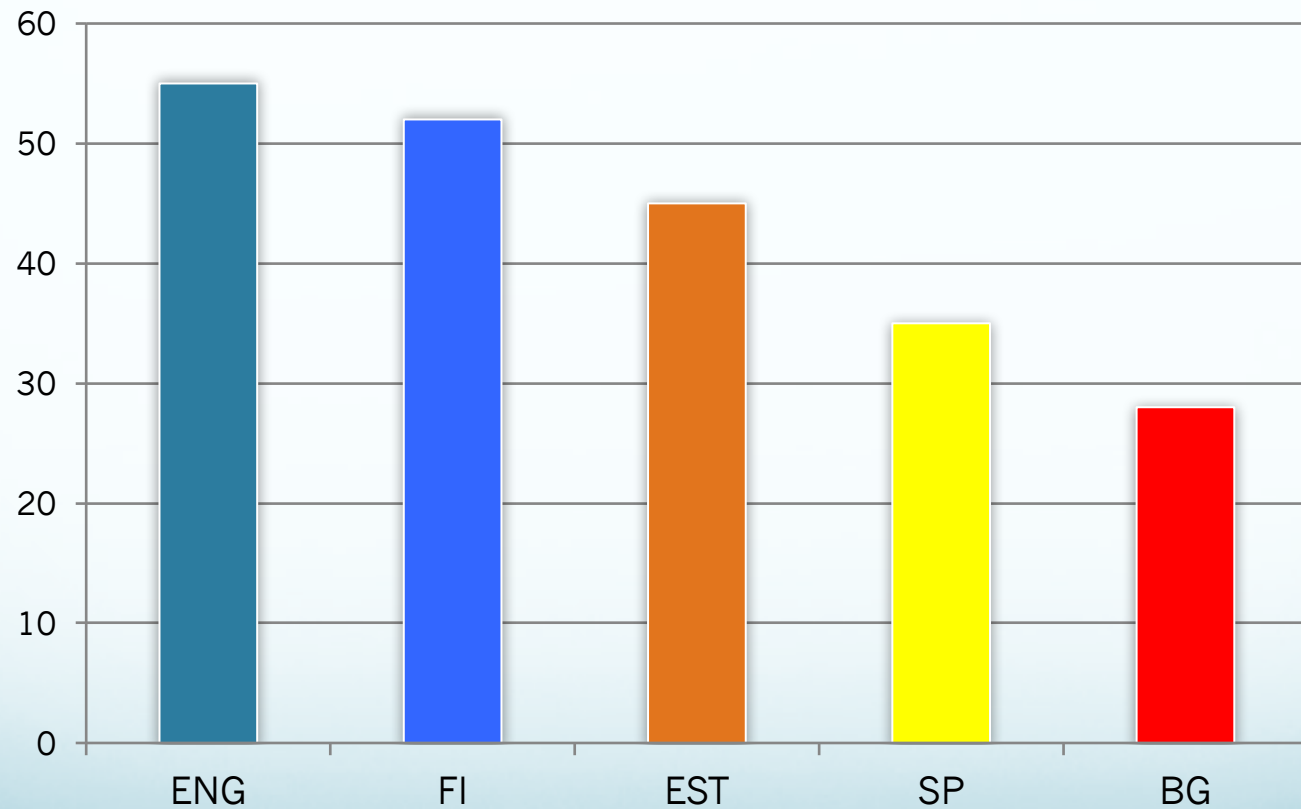
% overlap with Finnish



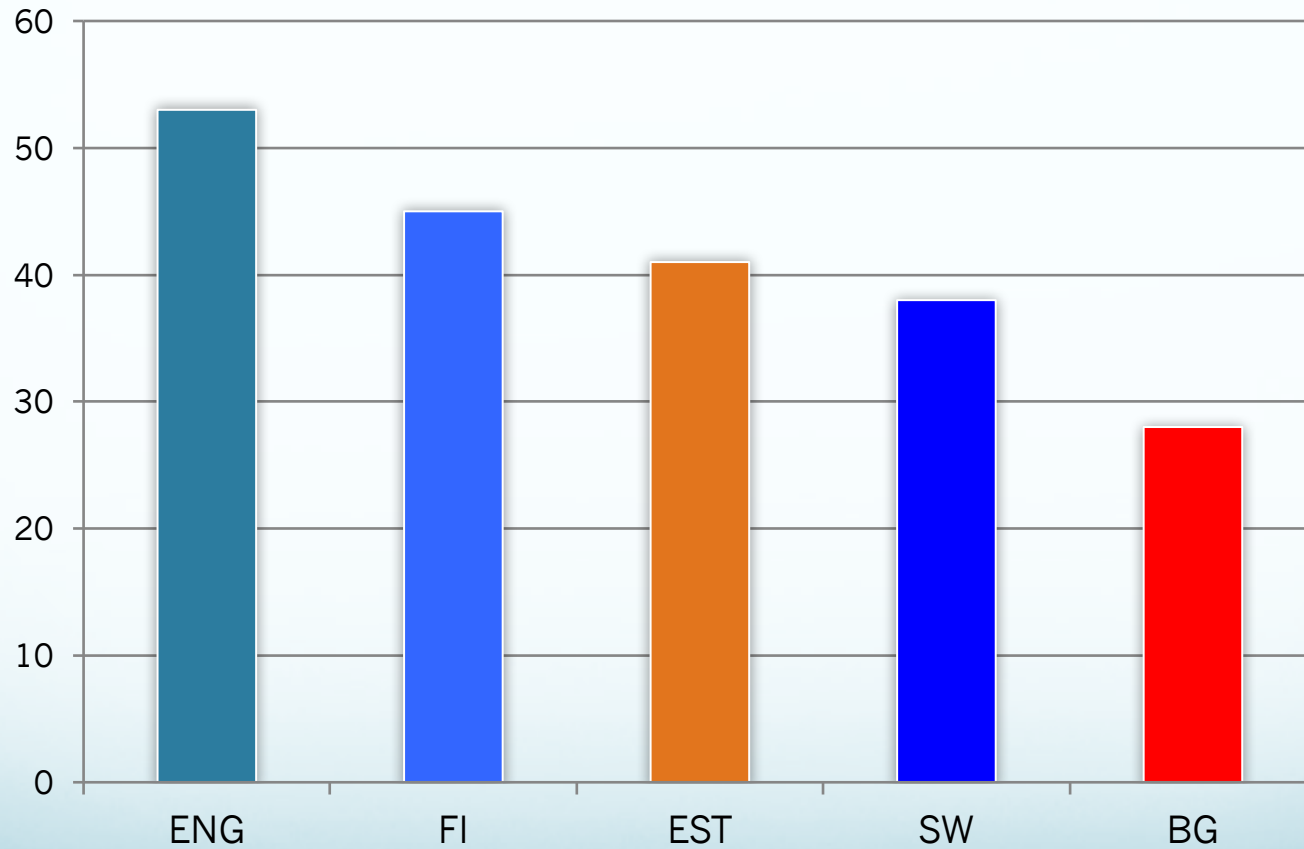
% overlap with English



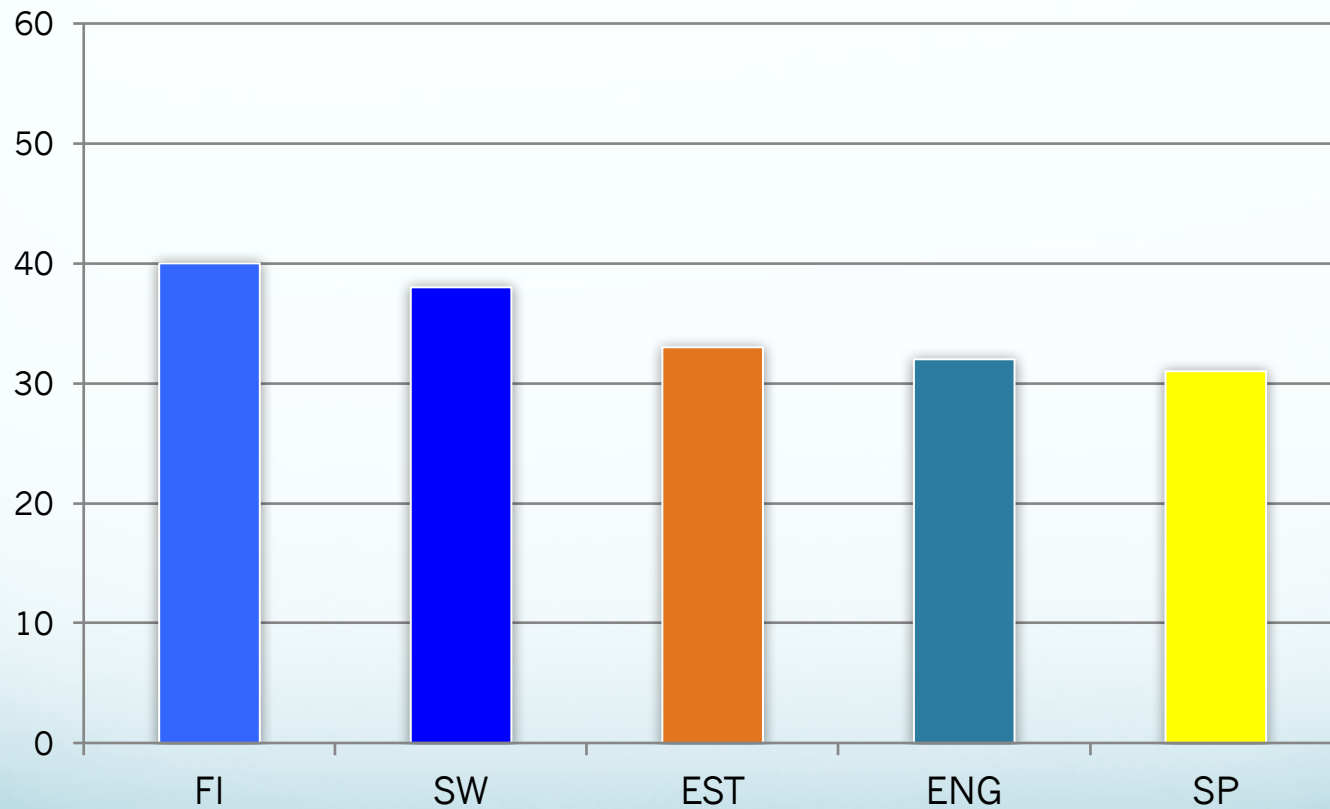
% overlap with Swedish



% overlap with Spanish



% overlap with Bulgarian



Europe

> 50% overlap



North Atlantic Ocean



7 MLTs shared by all

	EST	FIN	ENG	SW	BG	ESP
LIFT X UP	tõstab FP (43)	kohotti FP (29); mieltäkohottava (30)	F is uplifted (16)	F upplyfts (43)	C vüz-diga F, C vüz-visjava F nad	levantá FP (29)
OPEN X	avab FP (50)	avaa FP (37)	open FP (49)	öppnar FP (31)	C ot-varja FP	abre FP a LM (45)
PULL X	tõmbab ligi F (35); ligitõmbab F (36)	viehättää F (28)	pulls F (13), attracts F (14)	attraherar F (19) tilldrager F (41)	C pri-vličha F, C pri-teglja F	arrastra F (26), atrae F (27)
CALM X	rahustab F (63); lõdvestab F (62)	rauhoittaa F (51); rentouttaa F (50)	calms F (39); relaxes F (40)	lugnar (ner) F (14)	C u-spokpyava F	calma F (38); relaja F (60)
STIR X	segab F (61)	sekoittaa F (48)	stirs F (37)	upprör F (15)	C po-bärkva F, C o-bärkva F	conmueve FP (36)
SHAKE X	raputab F (60)	järkytyin F (47)	shakes F (36), agitates F (38)	(om)skakar F (16)	C raz-tärsva F, C raz-klašta F,	sacude FP (40)
PUSH AWAY X	tõukab eemale F (38), eemaletõukab F (37)		repels F (15)	stöter bort F (5) frånstöter F (42)	C ot-bläskva F	repele F (28)
CRUSH X	purustab F (44)	musertaa F (34)	shatters F (25)	krossar FP (10)	C smackva F	aplasta F (62)
BREAK X	murrab FP (53)	särkeä FP (40)	breaks FP (30)	knäcker FP (11)	C pre-chupva FP ; C raz- čupva FP	rompe FP (34)

4. SEAM and 4E cognition

Level of experience	<i>Sign use</i>	<i>Sign systems and experiential structures</i>	<i>METAPHORICITY</i>
Situated	Creative use	Emerging conventions	Creative extension of signs beyond their basic meanings, based on Gestalt iconicity
Historical	Conventional use	Sedimented conventions	
Universal (potential)	Typical (cross-cultural) use	World knowledge, Embodied (inter)subjectivity	

Level of experience	<i>Sign use</i>	<i>Sign systems and experiential structures</i>	<i>METAPHORICITY</i>
Situated	Creative use	Emerging conventions	Creative extension of signs beyond their basic meanings, based on Gestalt iconicity
Historical	Conventional use	Sedimented conventions	Socially shared (in both form and content) metaphoremes
Universal (potential)	Typical (cross-cultural) use	World knowledge, Embodied (inter)subjectivity	

Level of experience	<i>Sign use</i>	<i>Sign systems and experiential structures</i>	METAPHORICITY
Situated	Creative use	Emerging conventions	Creative extension of signs beyond their basic meanings, based on Gestalt iconicity
Historical	Conventional use	Sedimented conventions	Socially shared (in both form and content) metaphoremes
Universal (potential)	Typical (cross-cultural) use	World knowledge, Embodied (inter)subjectivity	Emotions, Physical interactions, Body memory, Mimesis, Construal, Imagination ...

The diagram illustrates the relationship between different levels of experience and sign use. It features a 3x4 grid with the following content:

- Row 1 (Situating):** Level of experience: **Situated**; Sign use: Creative use; Sign systems and experiential structures: Emerging conventions; METAPHORICITY: Creative extension of signs beyond their basic meanings, based on **Gestalt iconicity**.
- Row 2 (Historical):** Level of experience: **Historical**; Sign use: Conventional use; Sign systems and experiential structures: Sedimented conventions; METAPHORICITY: Socially shared (in both form and content) metaphoremes.
- Row 3 (Universal):** Level of experience: **Universal (potential)**; Sign use: Typical (cross-cultural) use; Sign systems and experiential structures: World knowledge, Embodied (inter)subjectivity; METAPHORICITY: Emotions, Physical interactions, Body memory, Mimesis, Construal, Imagination ...

Visual indicators of relationships:

- Two red arrows point upwards from the Universal level to the Situated level.
- A blue arrow points downwards from the Situated level to the Historical level.

Desiderata for an ecological theory of metaphor(icity)

Does SEAM account for metaphorical meaning-making as:

- 1) **embodied**, in the sense of grounded in the phenomenology of perception, action and social interaction
- 2) **embedded** in sociocultural practices and discourse
- 3) **enactive** in accounting not only for established expressions and constructions but also for emerging novel metaphors, and
- 4) **extended** beyond the mind of individuals, and beyond a single semiotic mode such as language.



Acknowledgments

- Liina Paju
- Göran Jacobsson
- Anu Vestenius
- Ralitza Krumova
- Simon Devylder
- Johan Blomberg
- Georgios Stampoulidis

**- and other students and
colleagues at Lund University**



...and to you for your attention and questions



Key references

- Blomberg, J. & Zlatev, J. (2014). Actual and non-actual motion: why experientialist semantics needs phenomenology (and vice versa). *Phenomenology & the Cognitive Sciences*, 13(3), 395-418.
- Cameron, L., & Deignan, A. (2006). The emergence of metaphor in discourse. *Applied linguistics*, 27(4), 671-690.
- Coseriu, E. (1985). Linguistic competence: what is it really? *The Modern Language Review*, xxv-xxxv.
- Fuchs, T., & Koch, S. C. (2014). Embodied affectivity: on moving and being moved. *Front Psychol*, 5, 508.
- Johnson, M. 2010. Metaphor and cognition. In Shaun Gallagher & Daniel Schmicking (eds.) *Handbook of Phenomenology and Cognitive Sciences* (pp. 401-414). Berlin: Springer.
- Kolter, A, S Ladewig, M Summa, C Müller, S Koch & T Fuchs. (2012). Body memory and the emergence of metaphor in movement and speech. In S C. Koch, T Fuchs, M Summa, & C Müller (eds.) *Body memory, metaphor and movement* (pp. 201-226). Amsterdam: Benjamins.
- Merleau-Ponty, M. [1945] (1962). *Phenomenology of perception*. London: Routledge.
- Sokolowski, R (2008). *Phenomenology of the human person*. Cambridge: CUP.
- Zahavi, D. (2001). Beyond empathy. Phenomenological approaches to intersubjectivity. *Journal of Consciousness Studies*, 8(5-6), 151-167.
- Zinken, J. (2007). Discourse metaphors: The link between figurative and habitual analogies. *Cognitive Linguistics*, 18 (3), pp. 445-465.
- Zlatev, J. & Blomberg, J. (2016). Embodied intersubjectivity, sedimentation and non-actual motion expressions. *Nordic Journal of Linguistics*