Compositionality
Concepts & Cognition
2004
An Interdisciplinary Conference
in Cognitive Science

Programme & Abstracts

February 28 – March 3, 2004
Heinrich-Heine-University
Düsseldorf

Organization:
Markus Werning
Department of Philosophy
Center for Language, Logic, and Information
Heinrich-Heine-University Düsseldorf

Edouard Machery
Department of Philosophy, Paris-Sorbonne
Max-Planck-Institute for Human Development, Berlin

Gerhard Schurz
Department of Philosophy
Heinrich-Heine-University Düsseldorf

Sponsors & Support:

Fritz Thyssen Stiftung
Institut | Nicod
CNRS-EHESS-ENS
Compositionality, Concepts & Cognition
An Interdisciplinary Conference in Cognitive Science
Heinrich-Heine University Düsseldorf, February 28 to March 3, 2004

brought together by

Markus Werning
Edouard Machery

and

Gerhard Schurz

Programme & Abstracts
Preface

When we first had the idea of putting together a conference on compositionality, we began with the observation that the debate on compositionality was largely fragmented and was taking place in relatively disjoint communities. Our principal aim arose from this observation and thus was to bring together scientists and scholars from a wider spectrum of the cognitive sciences, including philosophers, psychologists, linguists, computer scientists and neuroscientists. The speakers should address the issue of compositionality from very different perspectives. So the conference, we expected, would best further the exchange of views on compositionality across the disciplines and explore the implications and conditions of compositionality as a property of representational systems in the three domains: language, mind and brain.

When one now studies the final programme of the conference, one can justly say that our wishes have come true. The participants come from all the relevant disciplines and almost no important issue in the current debate on compositionality has been left out. That which is left over may well be supplemented at the follow-up workshop that will take place in Paris from June 18 to 20, 2004.

Officially, the conference is the second in the series Düsseldorf Summer Workshop Philosophy and Cognitive Science. That’s obviously quite ironic since this year’s event neither takes place in summer, nor any longer has the size of an ordinary workshop. It’s, however, once more a step towards the establishment of cognitive science in Düsseldorf.

Putting together a conference of this size necessarily is a largely co-operative act. We would like to thank the members of our scientific board: Daniel Andler, Peter Carruthers, James Hampton, Douglas Medin, Jesse Prinz, François Recanati, Philippe Schlenker, and Dag Westerstahl for their support. Thanks go also to our local advisers Daniel Cohnitz, Sebastian Löbner and Martina Penke. The project has gratefully been supported by three institutions in Paris: the Institut Jean-Nicod, the Ecole Normale Superieure and the University Paris-Sorbonne, who will also host the follow-up workshop. For making the conference financially possible we owe many thanks to the Fritz-Thyssen Foundation. Much of the administrative work was gratefully done by our secretary Tanja Platz and our TA’s Myung-Hee Theuer, Marc Breuer and Markus Stalf. Finally, the organizers owe the greatest thanks to the speakers and participants of the conference, who, by their participation will once more show that cognitive science is becoming an ever more unified enterprise.

Düsseldorf, February 2004

Markus Werning
Edouard Machery
Gerhard Schurz
Contents

Preface ........................................................................................................................................... 3
Contents .......................................................................................................................................... 4
Programme .................................................................................................................................. 5
Abstracts ........................................................................................................................................ 17
  Invited Talks .............................................................................................................................. 18
  Contributed Talks ..................................................................................................................... 34
  Poster Presentations .................................................................................................................. 49
Index ................................................................................................................................................ 54
Programme
Saturday, February 28, Schloß Mickeln

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:00</td>
<td>Registration opens</td>
</tr>
<tr>
<td>19:00</td>
<td>Evening reception</td>
</tr>
</tbody>
</table>
Sunday, February 29, Roy-Lichtenstein-Center

08:45
Registration opens

09:00
Welcome

09:10
Plenary symposium: Compositionality in Natural Language (Hall 2D)
Chair: Dag Westerstahl (University of Gotenborg)

09:15
Compositionality and Constraints on Meaning Entities
Gabriel Sandu (University of Helsinki)

10:15
Compositionality and Sub-Compositionality
Sebastian Löbner (Heinrich-Heine University Düsseldorf)

11:15
Coffee break

11:45
Compositionality and Linguistic Evolution
Henry Brighton (University of Edinburgh)

12:45
Lunch

14:15
Plenary symposium: Lexical Decomposition (Hall 2D)
Chair: Peter Pagin (University of Stockholm)

14:20
Lexical Decomposition
Dieter Wunderlich (Heinrich-Heine University Düsseldorf)

15:20
Play It Again, Sam (But Differently)
Wolfram Hinzen (University of Amsterdam)

16:20
Coffee break

16:40
Concurrent sessions

Hall 2A: Compositionality – Foundational Issues (Part I)
16:40 David Byrd (Davis): Recognitional Concepts
17:10 Malte Dahlgrön (Bonn): Concepts and Uniformity
17:40 Reinaldo Elugardo (Oklahoma): Fodor on Compositionality and the Inexplicitness Argument
18:10 Finn Spicer (Bristol): Compositionality, Metarepresentation and Self-Knowledge

Hall 2B: Complex, Primitive and Hidden Meanings (Part I)

16:40 Friedrich Dudda (Bochum): Deciphering Hidden Meanings
17:10 Jaume Mateu (Barcelona): Impossible Primitives
17:40 Jürgen Reischer (Regensburg): The Compositionality of Blending – More than Compounding?

Hall 2C: Compositionality From a Formal Point of View

16:40 Oleg Prosorov (St. Petersburg): Compositionality and Contextuality as Adjoint Principles
17:10 Ahti Pietarinen (Helsinki): Compositionality, Relevance, and Peirce's Logic of Existential Graphs
17:40 Kenneth Presting (Chapel Hill): Composition and Substitution: Formal Languages from an Algebraic Point of View

Hall 2D: Compositionality in Natural Language (Part I)

16:40 Olaf Mueller-Reichau (Leipzig): Semantic Composition Prior To and After Instantiation
17:10 Arndt Riester (Stuttgart): Compositionality Issues in Focus Semantics
17:40 Alda Mari (Paris) The Compositional and Intensional Nature of Groups
18:10 François Lévy et al. (Paris): Challenging the Principle of Compositionality in Interpreting Natural Language Texts

18:40 Break

19:10

Evening Lecture (Hall 2D)
Compositionality and Holism
Jeff Pelletier (Simon Fraser University Vancouver)
Monday, March 1, Roy-Lichtenstein-Center

08:45
Registration opens

09:10
Plenary symposium: Categories, Content and Sequential Representation (Hall 2D)
Chair: Martina Penke (Heinrich-Heine University Düsseldorf)

09:15
Generalizable Sequential Representations: How Plans and Predictions are Composed in the Brain
Ricarda Schubotz (Max Planck Institute for Human Cognitive and Brain Sciences)

10:15
To Cognize is to Categorize: Cognition is Categorization
Stevan Harnad (University of Quebec at Montreal)

11:15
Coffee break

11:45
Compositionality and Non-Conceptual Content
Johannes Brandl (University of Salzburg)

12:45
Lunch

14:15
Plenary symposium: Compositionality and Prototypes (Hall 2D)
Chair: Gerhard Schurz (Heinrich-Heine University Düsseldorf)

14:20
How Concepts Combine
Edward Wisniewski (University of North Carolina at Greensboro)

15:20
Simple Heuristics for Concepts Composition
Edouard Machery (Max Planck Institute for Human Development)

16:20
Coffee break

16:40
Bigger First: Prototype Compositionality and Beyond
Jesse Prinz (University of North Carolina at Chapel Hill)

17:40 Break
18:10

Evening Lecture (Hall 2D)

Aspects of Conceptual Representation and Combination

Lila Gleitman & Andrew Connolly (University of Pennsylvania)
Tuesday, March 2, Roy-Lichtenstein-Center

08:45
Registration opens

09:10
**Plenary symposium: Classicism vs. Connectionism (Hall 2D)**
Chair: Markus Werning (Heinrich-Heine University Düsseldorf)

09:15
*The Dual-Mechanism Debate*
Martina Penke (Heinrich-Heine University Düsseldorf)
Gert Westerman (Oxford Brookes University)

10:15
*Constituency in Smolensky’s ICS Architecture*
Brian McLaughlin (Rutgers University)

11:15
Coffee break

11:45
*Connectionism, Dynamical Cognition and Non-Classical Compositional Representation*
Terry Horgan (University of Arizona)

12:45
Lunch

14:15
**Plenary symposium: Neuronal Models of Compositional Representation (Hall 2D)**
Chair: Daniel Andler (University Paris-Sorbonne & Ecole Normale Superieure)

14:20
*Neuronal Assemblies, the Binding Problem and Neural Synchrony*
Andreas K. Engel (University Hospital Hamburg-Eppendorf)

15:20
*Dynamical Perceptual Representations in Oscillatory Networks*
Alexander Maye (Zuse Institute Berlin)

16:20
Coffee Break

16:40
*Synchrony and Composition: On the Neuronal Foundation of Semantics*
Markus Werning (Heinrich-Heine University Düsseldorf)

17:40
Break
18:00

**Concurrent sessions**

**Hall 2A: Compositionality – Foundational Issues (Part II)**

18:00 Albert Newen (Bonn & Tübingen): *Concepts Without Compositionality: Why Perception-Based Concepts Do Not Include Compositionality?*
18:30 Verena Gottschling (Mainz): *Levels of Perceptual Content and Visual Images. Conceptual, Compositional, or Not?*

**Hall 2B: Complex, Primitive and Hidden Meanings (Part II)**

18:00 Nick Braisby (Open University): *Blue Lemons, Stone Lions and Telephone Men: a Perspective on the Compositionality of Complex Nominals*
18:30 Fintan Costello et al. (Dublin): *Compositionality as a Constraint in Conceptual Combination*

**Hall 2C: Modelling Compositionality (Part I)**

18:00 Pierre Poirier & Benoît Hardy-Vallée (Montréal/Paris): *Structured Thoughts: the Spatial-Motor View*
18:30 Matjaz Potrc et al. (Ljubljana): *Particularist Compositionality*

**Hall 2D: Compositionality in Natural Language (Part II)**

18:00 Jun Miyoshi (Tokyo): *Actions, Dreams, and Compositionality*
18:30 Filip Buekens (Tilburg): *Compositionality and Truth-Conditional Pragmatics*

19:00 Break

19:10

**Poster session (Roy-Lichtenstein-Hall)**
Marc Breuer (Düsseldorf): Compositionality and Implicit Knowledge
Marius Dumitru (Bucharest): Compositionality, Mentalese, and the Dynamic Map of Thought
Neiloufar Family (Paris): Semantic Forms and Verbal Compositionality in Persian: The Case of Gereftæn
Sandra Gracci (Pisa): Acquisition of Italian by Tamil Speakers: Psycholinguistic Considerations Read
Lilia Gurova (Sofia): Compositionality a As a Feature Differentiating Mental Natural Kinds and Conceptual Artifacts
Hsieh, Shelley Ching-yu & Chinfa, Lien (Taiwan): The Compositionality of Botanical Concepts in Languages: A Study of Mandarin Chinese and German Plant Fixed Expressions
Laura Massacra (Paris): What depends on what? A critique to the Asymmetrical Dependence Condition in Jerry Fodor’s Theory
Jaume Mateu (Barcelona): Lexical Decomposition and Syntactic Argument Structure
Mukminov Ramil Raissovitch (Ulyanovsk): The Morphothemic Analyses of the Verbs of Communication
Larysa Zasyekina (Volyn State University): Psychosemantic Investigation of Motivation

21:00
Conference dinner

at Tante Anna’s in the Old City (Andreasstraße 2)
Wednesday, March 3, Roy-Lichtenstein-Center

08:45
Registration opens

09:10
Plenary symposium: General Issues on Compositionality (Hall 2D)
Chair: Edouard Machery (Max Planck Institute for Human Development Berlin)

09:15
Is Compositionality an Apriori Principle?
Daniel Cohnitz (Heinrich-Heine University Düsseldorf)

10:15
How Similarities Compose
Hannes Leitgeb (University of Salzburg)

11:15
Coffee break

11:45
Compositionality, Its Historic and Scientific Context
Theo Janssen (ILLC, University of Amsterdam)

12:45
Lunch

14:15
Concurrent sessions

Hall 2A: Compositionality – Foundational Issues (Part III)

14:15 Jaroslav Peregrin (Prague): Is Compositionality of Meaning and Empirical Matter?
14:45 Menno Lievers (Utrecht): The Structure of Thoughts and the Structure of Sentences

Hall 2B: Complex, Primitive and Hidden Meanings (Part III)

14:15 Daniel Weiskopf (South Florida): Saving Compositionality: The Case of Complex Nominals

Hall 2C: Modelling Compositionality (Part II)

14:15 Frank van der Velde (Leiden): Neural Architectures of Compositionality
14:45 Ralf Garionis (Dortmund): How Generative Models Compose the World

Hall 2D: Compositionality in Natural Language (Part III)
14:15 Kevin Wiliarty (Wesleyan): *PHLI: Compositionality versus Idiomaticity in Second Language Acquisition*
14:45 Linde Roels (Antwerp): *Compositionality of würde-Constructions in German*

15:15
Coffee Break

15:30
**Plenary symposium: The Principle of Compositionality in the Philosophy of Science (Hall 2D)**
Chair: Daniel Cohnitz (Heinrich-Heine University Düsseldorf)

15:35
*Compositionality and Holism in Scientific Theories*
Gerhard Schurz (Heinrich-Heine University Düsseldorf)

16:35
Break

16:45
*Content Parts: On the Part-Whole Relation in Axiomatized Theories*
Kenneth Gemes (Birkbeck College, London)

17:45
End of the conference
Abstracts
Invited Talks

Brandl, Johannes
(University of Salzburg)
Johannes.Brandl@sbg.ac.at

Compositionality and Non-Conceptual Content
Hall 2D, Monday, 11:45-12:45

In current discussions about intentionality a distinction is often drawn between two types of representational content: a so-called ‘conceptual’ and a ‘non-conceptual’ type of content. Propositional attitudes are said to have a conceptual content, whereas (perceptual) experiences have a content that is – at least partially – taken to be non-conceptual. This distinction may gain further support from the assumption that the conceptual content of propositional attitudes has a compositional structure, whereas the non-conceptual content of experience is (in that sense) non-compositional.

In this talk I want to explore a different way of accounting for the intuitions underlying this distinction. First, I argue that all representational content is already conceptual in a wide sense of the term ‘conceptual’. Secondly, I suggest that perceptual experiences exhibit a non-representational kind of intentionality. Taking these two claims as background, I will then consider two ways of analysing the content of a perceptual belief. One way follows Brentano’s non-propositional theory of judgement, the other one follows the paradigm of propositional attitudes. In the light of these two ways of analysing perceptual beliefs, I will then reconsider the question whether the content of our experiences is in fact non-compositional or not.

Brighton, Henry
(University of Edinburgh)
henryb@ling.ed.ac.uk

Compositionality and Linguistic Evolution
Hall 2D, Sunday, 11:45-12:45

Cohnitz, Daniel
(Heinrich-Heine University Düsseldorf)
cohnitz@phil-fak.uni-duesseldorf.de

Is Compositionality an Apriori Principle?
Hall 2D, Wednesday, 09:15-10:15

Is the principle of compositionality a priori? There are at least three interpretations of the principle that would support such a view:
the principle of compositionality is vacuous, since for every language we can give a compositional semantics
the principle of compositionality is not vacuous, but there are quasi-a priori reasons that support compositionality (transcendental arguments are given in support, the principle is treated as a synthetic quasi-apriori truth)
the principle is of a methodological character; rather than a claim about (natural) languages, it tells us what a proper semantics should look like

I shall consider each of the positions in turn, arguing that the principle of compositionality is best interpreted as a substantial a posteriori claim that cannot be supported by any of the standard quasi-apriori arguments.

Engel, Andreas K.
(University Hospital Hamburg-Eppendorf)
ak.engel@uke.uni-hamburg.de
Neuronal Assemblies, the Binding Problem and Neural Synchrony
Hall 2D, Tuesday, 14:20-15:20

Gemes, Kenneth
(Birkbeck College, London)
k.gemes@bbk.ac.uk
Content Parts: On the Part-whole Relation in Axiomatized Theories
Hall 2D, Wednesday, 16:45-17:45
Part I of this paper questions the fundamental idea of compositionality, by questioning in what sense the parts of a language/theory have any existence separate from the whole. It is argued that considered as semantic units parts, such as words, and sentences, do not have existence separate from the whole of language/theory. On the other hand it is argued that words and sentences taken as mere inscriptions or acoustic blasts do have some degree of existence separate from language/theory as a whole. Part II of this paper considers means of breaking wholes, in particular theories, into parts. Again the point being that what counts as a genuine part of a theory depends on its relationship to the whole. The relation between theories and language is that having a language involves having theories.
Gleitman, Lila & Connolly, Andrew
(University of Pennsylvania)
gleitman@psych.upenn.edu & andrew73@psych.upenn.edu

Aspects of Conceptual Representation and Combination
Hall 2D, Monday, 18:10-19:40

We will discuss some apparent limitations of prototype representations for a theory of concepts. We begin with Darwin’s classical discussion of the inadequacy of similarity metrics for defining species (1859, ch. XIII). Next, we’ll review some equivocal findings in the experimental literature having to do with the bases for featural descriptions of concepts (Rosch, 1978; Armstrong, Gleitman, and Gleitman, 1983) including the Contrast Model of similarity (Tversky, 1977; Tversky & Gati, 1982; Gleitman, Gleitman, Miller & Ostrin, 1996). Finally, we will discuss productive conceptual combination (how “brown cow” comes to mean “brown + cow”, mutatis mutandis) adducing some recent experimental findings (Connolly, Fodor, Gleitman, and Gleitman, in review): Specifically, these studies ask whether prototypes plausibly are the representations recruited for conceptual combination; that is, whether in the absence of relevant prior information there is a perceived tendency for “brown cow” to express “a prototypical cow that is prototypically brown.”

Harnad, Stevan
(University of Quebec at Montreal)
harnard@ecs.soton.ac.uk

To Cognize is to Categorize: Cognition is Categorization
Hall 2D, Monday, 10:15-11:15

Categories are kinds of objects, events, actions, properties, states in the world. We are sensorimotor systems, receiving inputs to our senses from these objects, etc. First we learn to categorize them correctly, by trial and error, by finding the sensorimotor invariants (features, rules) that will ground the correct categorization. Then we combine the names of our grounded categories into propositions that describe new categories, via natural language. All of our categories consist in ways we behave differently toward different kinds of things, whether it be the things we do or don't eat, mate with, or flee from, or the things that we describe, through our language, as prime numbers, affordances, or absolute discriminables. And isn't that all that cognition is for -- and about?
Hinzen, Wolfram  
(University of Amsterdam)  
W.Hinzen@uva.nl  
Play It Again, Sam (But Differently)  
Hall 2D, Sunday, 15:20-16:20  
This talk is a response to Fodor and Lepore's (FL) (1999) "atomist" critique of Hale and Keyser's (HK) theory of lexical decomposition, i.e., the idea that concepts typically have an internal structure and are derived from an underlying semantic representation. According to FL, the HK theory is a bad revival of generative semantics. But FL miss the fact that HK propose lexical decomposition of a purely syntactic sort (even though they, along with Baker (2003), tend to be uncareful in stating and motivating it in semantic terms). More precisely, no forms are derived from certain meanings, but certain structures arise on independent (syntactic) grounds, and then certain meanings can be assigned to them. From this point of view, syntactic lexical decompositions found in the "exo-skeletal" tradition of Borer (2000, forthcoming) are congenial to the lexical atomism proposed by FL themselves: argument structure is a purely syntactic matter, having nothing to do with information contained in the lexicon, which in this sense is "empty" in the sense of FL (1998). This rebuttal of FL's attack on KH does nothing against their plausible criticism of various semantic versions of lexical decomposition that are prominent in philosophy and linguistics today.

Horgan, Terry  
(University of Arizona)  
thorgan@email.arizona.edu  
Connectionism, Dynamical Cognition, and Non-Classical Compositional Representation  
Hall 2D, Tuesday, 11:45-12:45  
I will address the issue of compositionality of mental representations from the perspective of a foundational framework for cognitive science that was described and defended in my book (with John Tienson) Connectionism and the Philosophy of Psychology (MIT Press, 1996). The dynamical cognition framework (or DC framework), as we call it, is inspired partially by connectionism and partially by the persistence of the problem of relevance within classical computational cognitive science. The DC framework treats cognition in terms of the mathematics of dynamical systems: total occurrent cognitive states are mathematically/structurally realized as points in a high-dimensional dynamical system, and these mathematical points are physically realized by total-activation states of a neural network with specific connection weights. The framework repudiates the classicist assumption that cognitive-state transitions conform to a tractably computable transition function over cognitive states. I will explain how the DC framework makes conceptual space for the possibility of systematically content-sensitive cognitive-state transitions that (i) automatically accommodate lots of relevant information without explicitly representing it during cognitive processing, and (ii) are too subtle to conform to any tractably computable cognitive transition function. I will then describe the kind of compositionality exhibited.
by mental representations (according to the framework), which is non-classical in at least three ways: (1) formal/syntactic compositionality and semantic compositionality are too intimately intertwined to be separable; (2) compositional structure in the system of representations need not be tractably computable; and (3) compositional structure does not require separately tokenable constituent-representations.

Janssen, Theo

(ILLC/Univeristy of Amsterdam)
theo@science.uva.nl

Compositionality; Its Historic and Scientific Context

Hall 2D, Wednesday, 11:45-12:45

Occurrence. The principle of compositionality reads, in its best known formulation: ‘The meaning of a compound expression is a function of the meanings of its parts.’ The principle is well known as a principle in philosophy of language or linguistic semantics. But it also arises in many other fields: not only in related fields such as philosophy of science, computational linguistics and psychology, but also at the other end of the scientific spectrum: in mathematics and computer science.

Logic is the branch of mathematics that deals with the formal analysis of argumentations and reasoning. A logic is a language, a formal language with strict rules stating what well formed expressions are, and a precise semantics. The standard method to associate an expression with its meaning is in a compositional way.

Programming languages are languages to communicate with computers in order to tell them to perform certain tasks. So they are languages with an associated meaning, and this meaning usually is defined in a compositional way.

History. Many authors who mention ‘compositionality’ call it ‘Frege's Principle. But in certain philosophical communities by ‘Frege’s principle’ another principle is understood. It is the ‘principle of contextuality’: ‘One should ask for the meaning of a word only in the context of a sentence, and not in isolation’.

Occurrence. The principle of compositionality reads, in its best known formulation: ‘The meaning of a compound expression is a function of the meanings of its parts.’

Many authors who mention ‘compositionality’ call it ‘Frege's Principle. But in certain philosophical communities by ‘Frege’s principle’ another principle is understood. It is the ‘principle of contextuality’: ‘One should ask for the meaning of a word only in the context of a sentence, and not in isolation’.

There seems a conflict between the two principles. Compositionality requires that words in isolation have a meaning and that from these meanings the meaning of a compound can be built. Contextuality denies that before there is a sentence, there are meanings of words. Indeed, in the beginnings of his scientific career Frege did not associate meanings with words in isolation, but, pushed by the needs of research, he shifts towards compositionality. Later several philosophers gave reconciling interpretations of the two principles.

In the same century, the 19th century, there was a lot of discussion about these two approaches to the analysis of thinking. What are the basic units: do we start with concepts and combine them to thoughts, or are thoughts primarily given and do we distinguish concepts among them? A position between these extreme is hermeneutics, where to two principles co-operate in order to come to a understanding of a text. Also in the exact sciences this issue played a role. Analytic and synthetic chemistry were seen as fundamentally different approaches to the field, and the same for analytic and synthetic geometry. There arose a tendency to consider the smallest units as basic units, so towards compositionality.

Acceptance. In the field of logic the principle is the standard principle, with Hintikka as the main exception. In computer science, compositionality is a common principle, but
sometimes not obeyed for efficiency reasons. In philosophy of language the principle is under constant debate. Opponents come with examples that have to show that natural language is not compositional, whereas adherents come with several methods to obtain compositional solutions. It has been argued that compositionality is so unbounded, that it in fact vacuous. A widespread opinion is that the principle does not say something directly about natural language, but that it is a methodological principle on how to organise syntax and semantics.

**Conclusion.** Compositionality arises in many fields, and has a long history. In all those contexts there is a tension between compositionality and contextuality.

---

**Leitgeb, Hannes**

(University of Salzburg)
Hannes.Leitgeb@sbg.ac.at

*How Similarities Compose*

Hall 2D, Wednesday, 10:15-11:15

We consider interpreted systems of simple or complex general terms that express concepts. Is the compositionality of such systems in some sense excluded by the presumption that the corresponding concepts are constituted on the basis of a primitive relation of similarity?

In order to answer this question we turn to three further questions:

(i) Is the constitution of concepts on the basis of similarity necessarily hampered, as has been argued by several authors? E.g.: is Carnap's method of quasi-analysis in his Logical Structure of the World necessarily affected by what Goodman in The Structure of Appearance calls the difficulties of imperfect community and of companionship? We will show that this is not the case by pointing out necessary and sufficient conditions under which systems of concepts can be constituted from similarity in a sound and complete manner (where similarity is regarded in one case as a relation between individuals and in another case as a relation between individuals and sets of individuals). The concepts thus determined have to be considered as natural concepts (like the one expressed by 'red'), as opposed to concepts in general (including the one expressed by 'not red'). Instead of 'natural concept' we might also say 'natural kind', but not in the sense of Kripke and Putnam. Since natural concepts are supposed to play an important role for topics such as the confirmation of laws, and since similarity is assumed to play an analogous role for topics such as the categorization of entities by means of prototypes, a nice interplay between epistemology and cognitive science is the natural consequence.

(ii) It is easy to see that a system of natural concepts as being given by similarity is typically not closed under all the usual logical operations. Therefore, closure under the arbitrary application of logical operations extends such systems to systems of concepts in general. Now the question is: Is there still some way of generating systems of natural concepts from basic natural concepts by the application of restricted logical operations? As far as one representative example is concerned Gärdenfors' 'natural properties' in his Conceptual Spaces), we are going to see that the answer is affirmative: simple syntactic rules can be stated by which all and only those general terms are generated that express such natural concepts.
(iii) If we build up an interpreted system of terms for concepts in general, where the simple terms express natural concepts, compositionality is trivially satisfied with respect to every logical connective. If we restrict such systems of terms syntactically such that only those simple or complex terms are well-formed that express natural concepts, compositionality is again satisfied trivially. Now assume that we have introduced some notion of similarity for concepts (as can be done, e.g., on the basis of our given notion of similarity for individuals); then the question is: Is there the additional option of "softening" compositionality, such that the concept that is expressed by any complex term is only determined up to similarity by the concepts that are expressed by its subterms? Another theorem tells us this is not the case: every such alleged notion of meaning similarity necessarily collapses into some notion of meaning identity (in this sense, Fodor's and Lepore's criticism of meaning similarity in their Journal of Philosophy XCVI/8(1999) article is confirmed). However, restricted principles of "soft" compositionality may be seen not to be defective in a similar manner.

We end up with a kind of "mixed" picture: while similarity and natural concepts make a perfect pair, similarity and general concepts do not; while the representation of natural concepts is not necessarily confined to the level of subsymbolic representations, their symbolic representations are subject to certain restrictions of syntax; while we can introduce principles of compositionality for meaning similarity, these principles have to be weaker than those for meaning identity in order to avoid trivialization.

Löbner, Sebastian
(Heinrich-Heine University Düsseldorf)
loebener@phil-fak.uni-duesseldorf.de

Compositionality and Sub-Compositionality

Hall, Sunday, 10:15-11:15

According to the common notion of compositionality, a complex expression is compositional iff its meaning is determined by the meanings of its parts; in addition, it is understood that the resulting meaning derives in a regular way, i.e. by some semantic rule – a composition rule (CR). The question arises, then: what is the domain of a particular CR, what determines which CR is to be applied to a given complex expression. The traditional answer to this question is that the domain of a CR is defined jointly by the lexicon and syntax: The meaning of a complex expression is determined by the lexical meaning of its components and by its syntactic structure. This approach is implemented in Montague’s Universal Grammar and its derivatives: for every syntactic rule (SR) there is a CR that determines the meaning of the complex output expressions of the SR. However, given that syntax is to a certain extent autonomous it is not to be expected that the system of SRs and the system of CRs match in such a nice way; at least, the extent of match between the two systems is an empirical matter. The question then arises anew: what determines the domain of the CRs?

It is a basic fact about composition that complex expressions of the same syntactic type may obey different rules of interpretation: quantificational and non-quantificational NPs, intensional and extensional verbs, intersective and non-intersective adjectives, and so on. The traditional approach in Formal Semantics tackled the problem by “generalizing to the worst case”: for example, all NPs are “analysed” as quantifiers, rendering a uniform semantic treatment of the syntactic type of NPs. While this
approach may suit the objective of deriving truth conditions in a principled way, it is unsatisfactory from a cognitive point of view. The latter would require that a CR describe the interaction of the component meanings of a complex expression as narrowly as possible. Since, for example, a definite subject NP interacts with a VP in a different way than a genuinely quantificational NP, a cognitive description of composition would have to state two different CRs for the combination of subject NP and VP.

In pursuit of understanding the cognitive processes involved in composition, it will be necessary to distinguish semantic subtypes within a given syntactic type of compound. If the syntactic structure of a compound is considered the main input for determining the CRs to be applied, the derivation of meaning is in this sense sub-compositional: governed by rules that apply to sub-categories rather than categories. Furthermore, composition will depend to a certain extent on decomposition, as there is no other way of distinguishing semantic sub-categories within the potential input for a CR. As a consequence, the mechanism of composition has to be thought over: the lexical input may play a much more important role than the syntactic input. Maybe, on the long run, composition turns out to be primarily lexicon-driven, while syntax provides only subsidiary input.

As an illustrative problem, the gradation of German verbs with sehr (‘very’) will be discussed. There seems to be no uniform way in which this adverb interacts with the meaning of its operand verb, rather it acts in different ways on different types of verbs. Given the phenomenon of sub-compositionality, the question of compositionality appears in a new light: if the semantic interpretation of a complex expression primarily depends on the meanings of its components – how fine-grained are the rules of interpretation? Are all cases covered by rules at all or are there idiosyncratic ways of interpretation? How compositional are expressions obeying (near-)idiosyncratic composition rules? If CRs are that fine-grained, what are the general principles ruling composition?

Machery, Edouard
(Max-Planck Institute for Human Development Berlin & Institute Jean-Nicod Paris & University Paris-Sorbonne)
edouardmachery@hotmail.com

Simple Heuristics for Concepts Composition
Hall 2D, Monday, 15:20-16:20

There is a widespread agreement among psychologists and philosophers of psychology that, whatever concepts are, they compose. Human beings are able to create on the fly new concepts out of the concepts that are stored in long-term memory. Those complex concepts are used for various cognitive purposes, for example to categorize, to reason counterfactually etc. Many models have been proposed both in philosophy and in psychology to account for this capacity (Hampton 1987, 1988, Murphy 1988, 1990, Wisniewski 1997, Prinz 2002…). However, cognitive scientists have failed to reach any agreement about the cognitive processes that underlie the human capacity to produce complex concepts.

In this contribution, I show that despite their disagreements, the various models of concepts composition belong to the same explanatory tradition: they all assume that the
competence of concepts composition relies on a unique, complex and task-insensitive cognitive process. I suggest that a paradigm change is needed if progress is to be made. Instead of assuming a unique and complex cognitive process, psychologists should inquire as to whether the capacity to produce complex concepts, like other cognitive competences, relies on a toolbox that includes several mechanisms. These mechanisms may be simple, efficient, task-specific and ecologically rational – in one word, fast and frugal heuristics (Gigerenzer et al. 1999). In this contribution, I provide some theoretical reasons that support this alternative research paradigm on concepts composition and I describe how psychologists should go on to test it.

Maye, Alexander
(Zuse Institute Berlin)
maye@zib.de

*Dynamic Perceptual Representations in Oscillatory Neuronal Networks*

Hall 2D, Tuesday, 15:20-16:20

The possible functional role(s) of neuronal oscillations and synchronization is still under discussion. The talk will present the results of a model-based study which suggests a function as logically structured conceptual representation of a visual scene. Two models generating neuronal oscillations, one a detailed neuron model based on ionic currents, the other a mean-field model describing the activity of larger neuron populations, will be introduced. The results of a principal mode analysis of these oscillator networks will be presented. It shows that neuronal oscillations can simultaneously represent different ways of perceiving ambiguous visual stimuli.

McLaughlin, Brian
(Rutgers University)
brianmc@rci.rutgers.edu

*Constituency in Smolensky's ICS Architecture*

Hall 2D, Tuesday, 10:15-11:15

Moulines, C. Ulises
(University of Munich & Ecole Normale Superieure)
Moulines@lrz.uni-muenchen.de

*In What Sense Can the Structuralist Methodology Be Said to Be Compositional?*

– Cancelled –

The structuralist program in the philosophy of science proposes a particular methodology to represent and reconstruct the knowledge content provided by empirical scientific theories. The basic idea is to consider particular kinds of structures (and not of
statements) as the fundamental units to represent scientific knowledge in a way that allows for a much more differentiated analysis than in other, comparable approaches. It may then be asked in what sense and to what extent the peculiar structuralist methodology to represent knowledge is built upon a kind of compositional strategy, i.e. a strategy that consists in viewing the more complex units of scientific knowledge as “functions” of the simpler ones. To investigate this question, I’ll propose to start, as in other compositional approaches in other domains, with the analysis of a propositional attitude characteristic of the context we are investigating. In the present case, and according to structuralism, the characteristic propositional attitude representing scientific research may be summarized in the claim: “SC intends to apply N to I”, where “SC” stands for a “scientific community” (the subject of research), “N” for a “theory-net” (the means of research), and “I” for a “domain of intended applications” (the object of research). The statement “N applies to I” (or some equivalent formulation) is usually called in the structuralist literature “the central empirical claim of a theory” (or “the enlarged Ramsey-Sneed sentence”). It will be shown that the building-up of this claim follows a kind of step-by-step compositional strategy, though the content of the units so composed is quite different from those usually considered in those syntactical and semantical analysis where one speaks of compositionality. To make this analysis plausible, an example of a structuralistic representation of a simple (but realistic) empirical theory will be considered in full detail, in order to show in a concrete manner how the “step-by-step” composition of structures proceeds and how the content of the more complex structures depends on the content of the simpler ones.

Pelletier, Jeff
(Simon Fraser University Vancouver)
jeffp@cs.ualberta.ca

*Compositionality and Holism*
Hall 2D, Sunday, 19:10-20:40

Penke, Martina & Westermann, Gert
(Heinrich-Heine Universiy Düsseldorf) & (Oxford Brookes University)
penke@phil-fak.uni-duesseldorf.de & g.westermann@bbk.ac.uk

*The Dual-Mechanism Debate*
Hall 2D, Tuesday, 09:15-10:15

The inflection of words has been at the centre of a long-standing debate on the reality of compositional mental rules in cognitive processing (cf. e.g. Rumelhart & McClelland 1986, Marcus 2001). Dualistic approaches, prominent in linguistics, argue that two qualitatively different cognitive mechanisms are responsible for the inflection of regular (e.g. *laughed*{sub}[past]) and irregular stems (e.g. *went*{sub}[past]): a compositional rule (“add a suffix to the stem”) for regular inflected stems and associative whole-form storage for irregular inflected forms (cf. e.g. Pinker 1999, Wunderlich & Fabri 1995, Clahsen 1999). Connectionist approaches, in contrast, claim that all forms are processed by a
single non-compositional mechanism and differences between verb types emerge from distributional and phonological factors (cf. e.g. Rumelhart & McClelland, Elman et al. 1996, Westermann 2000).

Here we highlight aspects of this debate while focussing on German participle inflection. We will start with a short overview on the so-called Dual-Mechanism debate on inflection and summarise the evidence that has been brought forward to argue for a qualitative difference between regular and irregular inflected forms. We will then present a constructivist neural network model on German participle inflection that shows how differences between verb types can emerge based on principles of developmental cognitive neuroscience. The talk will conclude with a controversial discussion of the conclusions to be drawn from successful data simulations such as the one presented.

References

Prinz, Jesse

(University of North Carolina at Chapel Hill)
jesse@subcortex.com

**Bigger Fist: Prototype Compositionality and Beyond**

Hall 2D, Monday, 16:40-17:40

Prototype theories of concepts have been rejected on the grounds that prototypes are not compositional. This change is based on an overly demanding interpretation of the compositionality requirement. Prototypes are sufficiently compositional, and, the cases were they depart from compositionality are readily explained. I describe an informal model that predicts departures from compositionality, and I defend it against a recent attempt at empirical refutation. I also argue, however, that existing models of prototype combination must be amended. Those models mistakenly presuppose that prototypes are constituted by amodal feature lists. This presupposition conflicts with evidence that prototype combination exploits perceptual features.
Sandu, Gabriel  
(University of Helsinki)  
sandu@mappi.helsinki.fi  

*Compositionality and Constraints on Meaning Entities*  
Hall 2D, Sunday, 09:15-10:15  

The principle of compositionality (PC) is a semantic constraint on the composition of meanings: the meaning of any complex expression should be determined only by the meanings of the simpler parts and their mode of (syntactic) composition. Logicians and philosophers alike (Zadrozny, van Benthem, Horwich, Fodor) have claimed that PC does not impose any substantial limitations on the relevant meaning entities and it is, from a logical point of view, trivially implementable. The purpose of the present paper is to point out that the cases in which PC is trivially implementable are completely without interest. On the contrary, the cases in which PC enters into arguments which have explanatory power are those in which one starts with an independent understanding or with an independent theory of the meanings of the entities involved. In those cases, the challenging task is to find a compositional interpretation which satisfies certain constraints. I shall discuss several examples including the dispute between Horwich and Fodor.

Schubotz, Ricarda  
(Max Planck Institute of Human Cognitive and Brain Sciences, Leipzig)  
schubotz@cns.mpg.de  

*Generalizable Sequential Representations: How Plans and Predictions are Composed in the Brain*  
Hall 2D, Monday, 09:15-10:15  

This talk deals with the neural representation of sequential structure, as seen from the empirical perspective of monkey single-cell literature and human imaging data, and from conceptual speculations that emerge from these findings. The ability to represent sequential events enables us -inter alia - (1) to plan, i.e., to anticipate the perceivable consequences of an action (i.e. goals), but also (2) to predict, i.e. to anticipate how a specific environmental dynamic will evolve in near future without our engagement (e.g. trajectories, music, mathematical sequences, language). Both of these abilities reflect a temporary independence of directly experienced, time-consuming evidence. Further instances may be refer to the learning (and memory) of causal relations. 

Brain correlates of planning and prediction can be shown to converge on the premotor cortex (PM), a brain site which is nowadays taken to be highly specialized for the storage and template matching of temporally extended, composed and multi-modal representations of perceptual events. Two different PM subsections are of particular interest here, one underlying the representation of pragmatic properties of our environment (ventrolateral PM or PMv), the other underlying the representation of relations between elements on arbitrarily abstract levels of representation (medial PM or pre-SMA), as will be outlined. The putative role of PM in "motor" and "non-motor" internal forward models (simulation/emulation) will be discussed that may be exploited.
for an open class of structures in perception, action and cognition, possibly even including "higher cognition" as reasoning and language.

Schurz, Gerhard
Heinrich-Heine Universität Düsseldorf
gerhard.schurz@phil-fak.uni-duesseldorf.de

*Compositionality and Holism in Scientific Theories*
Hall 2D, Wednesday, 15:35-16:35

Scientific theories contain theoretical terms, such as "force" in physics. The meaning and reference of these terms are not given by observation nor by any other method of direct acquaintance. Rather, the existence of the denotation of a theoretical term is a theoretical postulate, and their meaning of this term is given by the actual background theory. This is meant when one speaks of semantic holism in philosophy of science. But semantic holism does not only seem to contradict the principle of compositionality, it even seems to jeopardize any possibility of a well-defined determination of the meaning of theoretical terms. For assume T is all the theory (in the given knowledge state) which contains the theoretical terms F1,...,Fn. According to the principle of compositionality, (a) the meaning of T should be determined the meanings of F1,...,Fn, together with the meanings of the non-theoretical terms and logico-mathematical terms contained in T which are assumed as given. But according to semantic holism, (b) the meaning of F1, ..., Fn should be determined by the meaning of T. If both are true the determination of meaning would be completely circular and hence could not work at all. In my paper I will try to show how this conflict between the compositionality postulate and the theory dependence of the meaning of theoretical terms can be resolved. Crucial for the resolution will be the use of certain kinds of Ramsey sentences and the use of certain characterizations of compositionality which are weaker than the usual ones.

Werning, Markus
(Heinrich-Heine University Düsseldorf)
werning@phil-fak.uni-duesseldorf.de

*Synchrony and Composition: On the Neuronal Foundation of Semantics*
Hall 2D, Tuesday, 16:40-17:40

The paper tries to identify certain neuronal states with the meanings that are expressible by predicative languages. Three adequacy conditions for neuro-semantic approaches are justified: the compositionality of meaning, the compositionality of content, and the co-variation with content. Furthermore, three types of architectures are distinguished along a scale from more to less language-like: Type 3 (i.e. classicist) architectures are those appealed to by language-of-thought approaches. Their mode of representation resembles prototypical linguistic representations insofar as they exhibit syntactic trees, a mereological constituent structure and a determinate numerical order among the constituents. Type 1 architectures like Smolensky’s Integrated Connectionist Symbolic architecture only allow for syntactic trees, but neither for a numerical order, nor for a
mereological structure. Both, type 3 and type 1, architectures are rejected. As an intermediate alternative, oscillatory networks are introduced as examples of Type 2 architectures, which allow for syntactic trees and a mereological constituent structure, but not for a determinate numerical order. A mathematical description of oscillatory networks in a Hilbert space framework is developed. An eigenmode analysis is given and interpreted in a way that is analogous to methods known from possible world semantics. Finally, two compositionality theorems are proven and the adequacy conditions vindicated.

Wisniewski, Edward  
(University of North Carolina at Greensboro)  
edw@uncg.edu

*How Concepts Combine*

Hall 2D, Monday, 14:20-15:20

My talk focuses on how people combine mental representations. Drawing on work in cognitive psychology on conceptual combination and metaphor, I suggest that combinatorial processes involve a variety of processes: selection, integration, comparison, and construction. Most research has focused only on selection. I discuss the implications of these findings for the compositionality of concepts.

Wunderlich, Dieter  
(University of Düsseldorf)  
wdl@phil-fak.uni-duesseldorf.de

*Lexical Decomposition*

Hall 2D, Sunday, 14:20-15:20

Many languages have sets of lexical items such as \{dead, die, kill\} with increasing complexity. Dead is a simple state predicate, while both die and kill are transition predicates entailing the result of being dead. Their argument structure differs: die has only one argument (the undergoer), while kill has an additional actor argument. In view of these similarities and differences, the following representations are reasonable:

\[
\begin{align*}
(1) & \quad a. \quad \text{dead:} & \lambda y \lambda t & \text{DEAD}(y) \\
 & \quad (t) & \\
 & \quad b. \quad \text{die:} & \lambda y \lambda e & \text{BECOME} & \text{DEAD}(y) \\
 & \quad (e) & \\
 & \quad c. \quad \text{kill:} & \lambda y \lambda x \lambda e & \{\text{ACT}(x) & \text{BECOME} & \text{DEAD}(y)\} \\
 & \quad (e) &
\end{align*}
\]

Lexical decomposition must not be confused with syntactic paraphrasing, which allows each of the involved partial events to be modified separately (2a). A complex lexical item, however, requires a coherent event reading, which can be modified only once (2b).
(2) a. On Monday, the terrorist shot at the minister, and thereby caused him to die two days later.
   b. Last week, the terrorist killed the minister. (§ on Monday, § on Wednesday, § in three days)

Cross-linguistically, the lexical decomposition approach is advantageous because
• it explains why languages, differing in their vocabulary, nevertheless express the same states of affairs: (3), (4)
• it predicts the argument realization for several kinds of alternations: (5), (6), (7)

(3) a. John galloped the horse.
   b. Hans ließ das Pferd galoppieren.

(4) Basque lacks the verb ‘to die’, but it can do without an explicit passive or reflexive:

\[
\text{Itziar hil da.} \\
\text{Itziar kill be.3} \\
\text{(i) ‘Itziar has died.’ (ii) ‘Itziar has been killed.’ (iii) ‘Itziar killed herself.’}
\]

middle reading ......passive reading reflexive reading

(5) a. The guests drank all of the wine.
   b. The guests drank the wine cellar empty. (resultative extension)
   c. Die Gäste tranken mir den Weinkeller leer. (benefactive extension)

(6) a. Marga wiped the crumbs from the table.
   b. Marga wiped the table (clean). (wipe alternation)

(7) a. The peasant loaded the hay on the wagon.
   b. The peasant loaded the wagon with hay. (locative alternation)

The strongest evidence for lexical decomposition comes from examples in which the role of a recipient alternates with that of a goal, leading to different argument realizations. A recipient is described by means of \( \text{BECOME POSS}(y,z) \), while a goal is described by means of \( \text{BECOME LOC}(z,\text{AT } y) \).

(8) a. Oscar sent the publisher his manuscript. (‘dative’ alternation)
   b. Oscar sent his manuscript to the publisher.

Note that many languages express even simple possession by means of a locative preposition. Therefore, \( \text{BECOME POSS}(y,z) \) and \( \text{BECOME LOC}(z,\text{AT } y) \) can be assumed to be weakly equivalent, although they lead to different surface realizations.

(9) Russian:

\[
U \text{ menja eta kniga.} \\
at me this book
\text{‘Ich habe dieses Buch.’}
\]

Denominal verbs, derived from an abstract verbal template into which a noun is incorporated, show the workings of these alternatives quite impressively:
(10)  
  a. John bridled the horse.  (BECOME POSS(horse, bridle))
  b. John cellared the wine.  (BECOME LOC(wine, in cellar))

In this talk, I will argue on the basis of the POSS ≈ LOC alternation that the assumption of lexical decomposition is compelling in many respects.
Contributed Talks

Braisby, Nick
(Open University)
N.R.Braisby@open.ac.uk

Blue Lemons, Stone Lions and Telephone Men: a Perspective on the Compositionality of Complex Nominals
Hall 2B, Tuesday, 18:00-18:30

There are several broad positions one can adopt with regard to the putative compositionality of concepts. In this paper, I adopt the view that typicality effects are not compositional, and are not central aspects of a theory of concepts. I outline a framework for concepts that builds on key results within the psychology of concepts, but that treats categorisation as perspectival. I first outline the treatment of such concepts, going on to outline a unification-based approach to their composition. Complex nominals are treated via the composition of single and relational concepts, a treatment that allows for their indeterminacy. An important feature of the framework is the claim that relational concepts may be regarded as cognitive constants, and are therefore not constituents of the complex concept. Finally, I show how this approach to concepts can make sense of typicality effects, even if they are not central to concepts.

Buekens, Filip
(Tilburg University)
f.a.i.buekens@uvt.nl

Two Problems for Truth-Conditional Pragmatics
Hall 2D, Tuesday, 18:30-19:00

A central argument for Truth Conditional Pragmatics is built around the assumption that the right hand side (RHS) of a truth condition must specify what the speaker has said.
Take, for example, the compositionally determined truth condition of a token utterance of 'John's book is red':

(1) **John's book is red** is true iff **John's book is red**

According to TCP, the RHS of (1) must be enriched as

(2*) **John's book is red** is true iff **the book authored by John has a red cover**

in C1, while in C2, it yields (we suppose)

(3*) **John's book is red** is true iff **the book owned by John is printed on red paper**
Without being linguistically instructed to do so, a hearer must expand or saturate the original sentence to make it propositional. I offer two arguments against TCP: first, TCP must show not that (2*) and (3*) are plausible expansions of sentences in a given context, but that (1) - composed out of bona fide semantic elements and compositionally determined - would be false in at least some context, which it can't. Secondly, I show that TCP confuses what the use of a sentence in a context C draws attention to - what the speaker intends the audience to actively believe, given the utterance - with the compositionally determined truth condition of the sentence used. Any communicative theory must assume that users of language are cognitively aware of the distinction between the communicative goal they intend to realize and the linguistic means they use to achieve those goals. Semantic compositionality guarantees the correct semantic individuation of the communicative means.

Byrd, David
(University of California at Davis)
byrdman101@hotmail.com

Recognitional Concepts
Hall 2A, Sunday, 16:40-17:10
Though many philosophers and psychologists have assumed it is in virtue of concepts that we are able to recognize an instance as falling under a certain kind, little work in either field has attempted to produce an adequate theory of concepts that accounts for this recognitional role. What this paper offers is precisely such a theory. In spite of an attempt by Jerry Fodor to show that recognitional concepts do not exist, the argument he has offered can be overcome, and a first step towards a neurologically plausible account of recognitional concepts can be developed from current work in the foundations of cognitive science.

Costello, Fintan & Keane, Mark
(University College Dublin)
fintan.costello@ucd.ie

Compositionality as a Constraint in Conceptual Combination
Hall 2B, Tuesday, 18:30-19:00
Is human language compositional or non-compositional? Compositionality seems essential for both generative thought and linguistic communication, and especially for our ability to convey new information by combining words to form new expressions. However, people frequently seem to interpret complex expressions non-compositionally, inferring properties for such expressions that are not determined solely and completely by their constituent words. For example, research on the psychology of conceptual combination gives evidence for non-compositionality in people's interpretation of noun-noun compounds. We examine compositionality from the perspective of a successful theory of noun-noun combination (Costello & Keane, 2000, 2001), in which combined concepts are viewed as satisfying three constraints imposed
by the pragmatics of communication. We first give a functional definition of compositionality as a graded property of compounds. We then argue that, although conceptual combination is not perfectly compositional, people maximise the compositionality of combined concepts, subject to the three proposed pragmatic constraints.

References


Dahlgrün, Malte
(Bonn University)
md89@nyu.edu

Concepts and Uniformity
Hall 2A, Sunday, 17:10-17:40

My topic is a familiar argument from compositionality that has been reiterated, notably by Jerry Fodor and Ernest Lepore, against practically every theory of concepts except informational atomism and classical definitionism. There are a number of criticisms to make concerning Fodor's definitions of his targets in his different applications of the argument and, relatedly, concerning his strategic descriptions of their unifying characteristic. Time permitting, I will try to clarify a few things here before I get to the main contention of my talk. My main contention is this: Although concepts are indeed compositional, Fodor/Lepore's understanding of what the principle of compositionality amounts to is misguided. Fodor/Lepore take the principle of compositionality to entail that the content-constitutive properties of a complex concept and of its constituents need to be uniform in kind. This is not only false; the adequacy condition thereby imposed upon theories of concepts seems to contravene the point of compositionality itself. Curiously enough, a majority of those philosophers who would be happy to see the compositionality argument refuted have themselves left the uniformity presupposition unquestioned.
Deciphering Hidden Meanings

Poets take and have taken liberties with language. In my talk, I intend to take a look at poetic statements that violate sense relations. At first glance, such statements seem to be obscure or absurd. My question will be how it is nevertheless possible for hearers to bestow sense upon them. In the context of this inquiry I will try to illuminate the roles of some well-known principles of understanding language, to be precise: the principles of sense constancy, of compositionality, of contextF, of co-text, and of contextS. I am going to put forward the thesis that each principle is relevant in the given context. If this is true, any general theory of meaning that ignored one of these principles would be incomplete. A second thesis that I will put forward in the course of my argumentation is that a rigid interpretation of Wittgenstein’s famous equation of meaning and use is implausible.

The Goldilocks Syndrome: Is Noun-Noun Compounding Compositional?

An empirical study of the innovative noun-noun compound Goldilocks syndrome revealed that (a) when used it was often explicitly defined, and (b) participants in an experiment were typically unable to provide the correct interpretation given the phrase in isolation. These results count against explanations of noun-noun combination that predict that the meaning of the combination can be composed just from the informational resources provided by the constituent nouns.

Fodor on Compositionality and the Inexplicitness Argument

Jerry Fodor argues that natural languages are not semantically compositional because they are inexplicit about the structure of the contents they express. And yet, according to him, natural languages are productive and systematic. All three claims, if true, weaken (if not conflict with) his earlier abductive argument for semantic compositionality: if a finite recursive system of symbols is productive and systematic, then the best explanation of that fact is that the system is semantically compositional; since natural
languages fit the description, it follows [inference-to-the-best-explanation] that natural languages are semantically compositional. Fodor accepts the second premise but he now rejects the conclusion. Thus, he must reject the first premise and offer an alternative way of explaining the productivity and systematicity of natural language. His solution is to say that natural languages have only derived content: the content of a natural language symbol is just the thought or concept that it conventionally expresses. On his view, thought is fully compositional, systematic, productive, and thus, unlike natural language, has no unarticulated contents. Thus, one can explain the productivity and systematicity of natural language without attributing compositionality to it – since it has no semantic meaning of its own apart from thought – by appealing to derived, compositional, thought-contents. I argue that semantic compositionality, as it is customarily understood, does not require the “explicitness-of-content-structure” constraint on complex symbols. In which case, Fodor fails to show that natural language is not compositional.

---

**Garionis, Ralf**
(Dortmund University)
rafl.garionis@uni-dortmund.de

*How Generative Models Compose the World*
Hall 2C, Wednesday, 14:45-15:15

Unsupervised connectionist models essentially transform input examples into neural representations while aiming at the preservation or emphasis of particular aspects of the input data. Despite the apparent directional nature of this process, there are good arguments for analyzing learning in inverse direction beginning with the abstract representations and ending with the sensory input data. Our perspective on unsupervised learning is that of Helmholtz's approach to vision, considering learning as a minimization problem solved in the presence of a generative model inverting the process of creating representations. We elucidate this alternative view on unsupervised learning by considering the represented world as being composed by stochastic generators. The use of generative models allows us to analyze the goals of learning by means of the corresponding generators' properties.

---

**Gottschling, Verena**
(Johannes Gutenberg University Mainz)
gottschl@uni-mainz.de

*Levels of Perceptual Content and Visual Images. Conceptual, Compositional, or Not?*
Hall 2A, Tuesday, 18:30-19:00

The analogy between visual perception and mental visual imagery is well established. Less clear is, what kind of perceptual representations images should be identified with and what kind of content if any - they have. This is the focus of my talk. Regarding the debate about conceptual vs. nonconceptual contents and compositionality several options seem available:
(1) Images themselves do not even have fixed content, only the descriptions that accompany them have.
(2) Images are paradigm cases of non-conceptual contents.
(3) Images are themselves conceptual and compositional, because they are recalled percepts.
I consider these strategies in turn and argue, that (i) strategy 3 gives us the most ambitious version of pictorialism but is fraught with problems, (ii) strategy 1 gives us no interesting version of pictorialism, and (iii) strategy 2 enables only an account with strong reservations. (iv) I propose an intermediate strategy between 2 and 3.

Lévy, François & Gayral, Françoise & Kayser, Daniel
(University Paris-Nord)
fl.@lipn.univ-paris13.fr

Challenging the Principle of Compositionality in Interpreting Natural Language Texts

Hall 2D, Sunday, 18:10-18:40

This paper aims at emphasizing that, even relaxed, the hypothesis of compositionality has to face many problems when used for interpreting natural language texts. Rather than fixing these problems within the compositional framework, we believe that a more radical change is necessary, and propose another approach. The classical expression of compositionality, viz. the meaning of a complex expression can be obtained from the meanings of the words which compose it and from its syntactic structure, is problematic in at least four respects: - Enumerating senses - Selecting senses while getting up the syntactic tree - Accounting for co-presence - Non lexical knowledge Our approach tries to avoid these problems in adopting two other hypothesis: a switch from meaning to implied inferences, and bidirectional propagation of constraints.

Lievers, Menno
(Utrecht University)
menno.lievers@phil.uu.nl

The Structure of Thoughts and the Structure of Sentences

Hall 2A, Wednesday, 14:45-15:15

Only a few decades ago it was generally held that thought is linguistic: language was supposed to be both a vehicle for thought and a means of communication. Due to the rise of cognitive science this idea has been abandoned. Thinking in language is now regarded to be only a part of our cognitive apparatus. This raises the question where the structure of thoughts comes from, since it can no longer be maintained that it is derived from the structure of sentences. Evans has defended the view that thoughts are intrinsically structured and obey what he has called 'Generality Constraint'. This constraint then needs to be justified, for it does not seem prima facie impossible that corresponding to sentences there are unstructured thoughts or thoughts with a complicated logical structure. In my paper I discuss attempts to
justify the Generality Constraint and emphasize the relationship between these justifications and the ontology they assume.

Mari, Alda
(CNRS - ENST, Paris)
mari@infres.enst.fr

The Compositional and Intensional Nature of Groups
Hall 2D, Sunday, 17:40-18:10

From the point of view of compositionality, wholes are puzzling entities. Either they are function of their parts, or they exist independently of them. In this case one has to explain where they do originate from. This question is central for semantic theories of collective events. In particular we have to explain by virtue of what criteria we can distinguish the distributive - or sum - reading (1’) from the collective - or group - one (1’’’) for (1).

(1) John and Mary are walking along the beach.
(1’) Distributive reading: John and Mary are two people walking side by side along the same trajectory.
(1’’’) Collective reading: John and Mary were walking together along the same trajectory.

In the first part of the paper we discuss the solutions provided in the literature; in the second one we present a new criterion for collective event formation based on descriptions and constraints in a modal framework.

Mateu, Jaume
(Autonomous University of Barcelona)
Jaume.Mateu@uab.es

Impossible Primitives
Hall 2B, Sunday, 17:10-17:40

In this paper, we partake in the debate on “impossible words” between Fodor & Lepore (1999) and Hale & Keyser (1999). A minimal l-syntactic decomposition of words is shown to be necessary in order to provide an appropriate answer to questions like the following ones: (i) Why are there so few theta-roles? (ii) Why is there no verbal predicate having more than three arguments? (iii) Why is there no verbal predicate having a Theme as external argument and an Agent as internal argument? Crucially, we argue that the appropriate answers to these important questions can shed light on what a(n argument structure) primitive is. In particular, the distinction between non-relational vs. relational elements becomes crucial in our reply to Fodor & Lepore (1999): the set of non-relational elements occupying the specifier and complement positions in Hale & Keyser’s (2002) syntactic argument structures is open-ended, while the set of relational elements occupying the head positions does form a closed class of primitives.
Miyoshi, Jun
(Japan Society for the Promotion of Science)
miyoshi@cogsci.i.chiba-u.ac.jp

*Actions, Dreams, and Compositionality*

Hall 2D, Tuesday, 18:00-18:30

The sentential adverbial phrase, "in a (my) dream," seems to behave in a logically inconsistent manner. For example, suppose that I dreamed, in bed, that I caught a fish and felt happy. Then, both "I caught a fish in my dream" and "I felt happy in my dream" are true. But, on the one hand, the former does not imply "I caught a fish," because I was asleep and caught no fish at that time in reality. On the other, the latter implies "I felt happy," because my having felt happy is undeniable even in a dream. This kind of phenomena presents a challenge to the compositionality of the sentences describing dreams. Simple applications of the Davidsonian treatment of adverbials and the possible world semantics do not explain it. I propose an analysis of it in terms of events and their properties, and discuss some philosophically interesting issues about it.

Mueller-Reichau, Olaf
(Leipzig University)
reichau@rz.uni-leipzig.de

*Semantic Composition Prior To and After Instantiation*

Hall 2D, Sunday, 16:40-17:10

Comparison of the systematic semantic two-way ambiguities opaque vs. transparent, generic vs. existential, nonlocated (i-level) vs. located (s-level), weak vs. strong, characterising vs. episodic leads me to conclude that vocabulary items are lexically stored in a nonreferential format (as "descriptions") which, by default, gives rise to type-denoting expressions. To be realised as particular-denoting expressions, an instantiation function "BE" must apply at a certain stage of the syntactic derivation. Structurally complex linguistic expressions can be formed on the purely descriptive level prior to the application of BE as well as on the extensional level after BE has applied. Whereas semantic composition on the extensional level follows the common formal semantic practice, composition on the descriptive level cannot be modelled in set-theoretic terms. Only after (possibly complex) descriptions have been encapsulated by BE are they describable in set-theoretic terms, in particular as characteristic functions.
Newen, Albert  
(University of Bonn & University of Tübingen)  
newen@uni-bonn.de  

Concepts Without Compositionality: Why Perception-Based Concepts Do Not Include Compositionality?  
Hall 2A, Tuesday, 18:00-18:30  
I argue that a theory of concepts has to distinguish between perception-based, proposition-based and theory-based concepts. The main aim of the paper is to present and defend an epistemic theory of perception-based concepts. This will be done by discussing the cognitive abilities of animals. On the basis of this theory it can be shown that the criteria of having perception-based concepts do not include compositionality. The composition of concepts is a characteristic feature of propositional representations which can be distinguished from conceptual representations.

Peregrin, Jaroslav  
(Academy of Sciences, Prague)  
peregrin@ff.cuni.cz  

Is Compositionality of Meaning and Empirical Matter?  
Hall 2A, Wednesday, 14:15-14:45  
In the paper I argue that it is mistaken to assume that the principle of compositionality of meaning must be a kind of a naturalistic generalization, which some or all empirical languages obey, but which does not need to be obeyed by languages we produce artificially. I argue that the connection between meaning (and hence language) and compositionality is not an empirical (but rather a conceptual, an analytic) issue. I point out that if we took compositionality as coming ‘after meaning’, we would need another principle to enable us to single out the level of meanings from the various levels of semantic accessories of expressions; whereas it is precisely the principle of compositionality which is particularly suitable for this task. Hence my conclusion is that we should see the principle as a *regulative* matter, as a principle which helps us settle controversies about what meaning is and what it is not.

Pietarinen, Ahti-Veikko  
(Academy of Finland & University of Helsinki)  
pietarin@cc.helsinki.fi  

Compositionality, Relevance, and Peirce's Logic of Existential Graphs  
Hall 2C, Sunday, 17:10-17:40  
Charles S. Peirce's pragmatist theory of logic teaches us to take the context of utterances as a key logical notion without which there is no meaning. To have a realistic notion of the meaning of assertions, the Relevance Theory of Sperber and Wilson (1995) may be applied in the spirit of Peirce's Pragmatic Maxim: to weigh information depends on (i)
what the practical consequences of accommodating the chosen piece of information introduced in communication are, and (ii) what will ensue in actually using that piece in further cycles of discourse. Peirce's unpublished papers suggest a relevance-like approach to meaning. Further, his Existential Graphs (EG) were strongly influenced by contextual features. I will present arguments pro and con to the view in which Peirce's logic may have been taken to endorse non-compositionality of meaning. To this effect, I will uncover properties of EGs or one of their extensions that violate versions of compositionality.

Poirier, Pierre & Hardy-Vallée, Benoit  
(University of Québec at Montréal) (Institut Jean-Nicod (EHESS) Paris & University of Québec at Montréal)  
bhv@sympatico.ca  

Structured Thoughts: the Spatial-Motor View  
Hall 2C, Tuesday, 18:00-18:30

We defend a view of thoughts that lies between the classical or received view and the "success semantics" view put forth by Bermudez (2003). Our view stands with Bermudez's view on being, we believe, more empirically founded and less species-specific than the classical view. And it stands with the classical view in being less theoretically cumbersome than Bermudez's view. We defend this view, which we call the spatial-motor view, in two steps. First we present the three views, insisting on their defining features and what distinguishes them. Then we defend what we believe to be the central claim of our view, the idea that spatial and motor thoughts can have compositional structure.

Potrc, Matjaz & Strahovnik, Vojko  
(University of Ljubljana)  
matjaz.potrc@guest.arnes.si  

Particularist Compositionality  
Hall 2C, Tuesday, 18:30-19:00

Particularist compositionality is offered as a realistic possibility, especially if we take look at problems encountered in the case of ubiquitously present generalist proposals designed to explain compositionality. It is argued that generalism is not even able to support compositionality in the form of ceteris paribus generalities endowed with exceptions. Thus, no form of normative authority of the general is able to explain compositionality, and a good bet is that particularist patterns do in fact accomplish this job.
Presting, Kenneth
(University of North Carolina at Chapel Hill)
presting@mindspring.com

*Composition and Substitution: Formal Languages from an Algebraic Point of View*

Hall 2C, Sunday, 17:40-18:10

Long before composition was a focus of research in cognitive sciences, mathematicians who found the phenomenon of composition to be fundamental to their own work studied it extensively. I will discuss a number of mathematical results which are mostly familiar and rather elementary in their mathematical character, but when seen from a cognitive perspective are uniquely revealing. The objective is both to (re-)introduce a useful set of tools to researchers in the cognitive fields, and also to bring fresh insights into structures and relationships that might have seemed so familiar as to be insignificant. Perhaps the most interesting result is that compositionality need not be understood as a consequence only of recursively iterating operations, on a set of atoms given a priori. While the usual route for creating compositionality is from the bottom up, I will demonstrate a top-down procedure for creating it.

---

Prosorov, Oleg
(Steklov Institut of Mathematics, Russian Academy of Sciences, St. Petersburg)
prosorov@euclid.pdmi.ras.ru

*Compositionality and Contextuality as Adjoint Principles*

Hall 2C, Sunday, 16:40-17:10

We outline a categorical framework for an explicit formulation of generalized Frege's compositionality and contextuality principles proposed in our previous works [1-4], where we developed a formal hermeneutics as a kind of discourse interpretation theory. Given any admissible text X in natural (Indo-European) language, we introduce the Schleiermacher category Schl(X) of sheaves of fragmentary meanings to generalize Frege's compositionality principle; we introduce also the category Context(X) of etale bundles of contextual meanings to generalize Frege's contextuality principle. The main result is the equivalence of categories Schl(X) <----> Context(X), called Frege Duality and obtained by the same way as many of well-known classic dualities. Similar generalizations might be formulated at the semantic level of sentence. Frege Duality gives rise to important functional representation of fragmentary meanings that allows to establish some inductive theory of meaning describing how runs the text understanding process.
Reischer, Jürgen  
(University of Regensburg)  
juergen.reischer@sprachlit.uni-regensburg.de  

*The Compositionality of Blending – More than Compounding?*

Hall 2B, Sunday, 17:40-18:10

What do we mean by saying that something is 'edutainment', 'advertainment', or 'scientainment'? Is 'bleen' semantically identical to 'blue-green'? What does 'the Prince of Ales' mean? Blendings like these are spreading widely not only in English; similar German word coinages like 'Bankfurt' or 'jein' function as templates for a growing number of compound-like constructions in everyday life. What, then, are the structural and semantic (de)composition principles to create and/or interpret those words? How do we reconstruct the two source words out of the phonetic fragments present in the blend? It will be shown that blends follow, at least partially, their own structural and semantic (de)composition 'rules', exceeding the possibilities of normal derivations and compounds. E.g., blends allow semantic coding of concepts with no preference for the head component: 'bleen' means one perfectly balanced color, 'pomato' means a crossing of two plants with no preference for one of them, and 'faction' unifies two semantically contradictory concepts to one notion, meaning – what?

---

Riester, Arndt  
(Stuttgart University)  
arndt@IMS.Uni-Stuttgart.DE  

*Compositionality Issues in Focus Semantics*

Hall 2D, Sunday, 17:10-17:40

In this talk I will point to problems that arise on the attempt to translate current focus theory into a bottom-up compositional semantic framework. I will first sketch some stages in the development of ideas concerning the interpretation of focus, allegedly focus-sensitive particles and their dependence on context. A question that has not been solved satisfactorily so far is where exactly focus interpretation should take place and whether only focus constituents or entire sentences should be contrasted against each other. I will show that apparent circularities can be overcome and that focus projection should not be considered an independent module outside semantics construction. A proposal will be sketched on how to integrate focus semantics into a recent version of Discourse Representation Theory. Most attention will be paid to specifying a compositional, context-driven version of focus projection based on Schwarzschild's notion of Givenness.
Roels, Linde
(Antwerp University)
linde.roels@ua.ac.be

Compositionality of würde-Constructions in German
Hall 2D, Wednesday, 14:45-15:15

The Germanic languages are characterized by a movement from a strongly synthetic towards an increasingly analytic linguistic system. Grammatical relations that used to be expressed by an intricate morphological system (= synthetically) are now being expressed by means of separate words (= periphrastically).

According to Curme (1935) analytic forms are multi-word variants of the corresponding synthetic constructions. Ross (1969) considers analytic expressions syntactic combinations of independent units. The latter position implies a distinction between single and multi-word lexemes, whereas the former sees periphrasis as a multi-word realization of a single-word lexeme. Both positions will be applied to the periphrastic subjunctive with “würde + Infinitive” and its synthetic counterpart (er würde kommen vs. er käme). To what extent are they interchangeable and therefore maybe instances of the same lexeme (realized in a different way only)? Or does the formally more complex construction with würde corresponds with a more complex meaning?

Spicer, Finn
(University of Bristol)
finn.spicer@bristol.ac.uk

Compositionality, Metarepresentation and Self-Knowledge
Hall 2A, Sunday, 18:10-18:40

This paper investigates the relation between a person’s general capacity to represent the mental states of herself and others, and her privileged self-knowledge of her own mental states. Self-knowledge consists in making a knowledgeable judgement (call it a cogito-like judgement) about one’s own thought content, which involves the use of a metarepresentation to specify that content. A reasonable assumption about how cogito-like judgements and other propositional attitude ascriptions are related is that they employ the same metarepresentations. In order for propositional attitude ascriptions to play the role we require them to in commonsense psychological explanation, they had better satisfy the Truth-Condition Thesis—the metarepresentations used must specify the content of the ascribed propositional attitude at least to the grain of sameness of truth-conditions. I argue that if the metarepresentations used in cogito-like judgements satisfy the Truth-Condition Thesis, then cogito-like judgements cannot satisfy Burge’s Thesis—they cannot be self-verifying judgements.
van der Velde, Frank
(Leiden University)
VDVELDE@fsw.leidenuniv.nl

*Neural Architectures of Compositionality*

Hall 2C, Wednesday, 14:15-14:45

To show how compositionality can be instantiated in neural terms, I will present neural ‘blackboard’ architectures of sentence structures and visual feature binding. The architectures solve the ‘four challenges for cognitive neuroscience’ described by Jackendoff (2002). Sentence structures are encoded in a neural ‘blackboard’ architecture by temporarily binding word representations with structure representations in a manner that preserves sentence structure. The architecture constitutes a working memory that can store different sentence structures simultaneously. Answers to specific ‘binding’ questions (‘Who does what to whom’) can be produced by means of a selective activation process within the architecture. The neural blackboard architecture for visual cognition consists of the retinotopic areas of the visual cortex in which networks that process features (shape, color, location) interact. By selecting one feature of an object, e.g., its color, this interaction produces a selective activation process that results in the binding of all features of that object.

Weiskopf, Daniel
(University of South Florida)
weiskopf@luna.cas.usf.edu

*Saving Compositionality: The Case of Complex Nominals*

Hall 2B, Wednesday, 14:15-14:45

There are good reasons to think natural languages are compositional. But so-called complex nominals (CNs) have proven highly recalcitrant to compositional semantic analysis. I evaluate Sainsbury’s (2001) proposal to treat such constructions compositionally by assigning them unspecific meanings, and argue that it is unsuccessful. While Levi’s (1978) account is an improvement in some respects, it also faces similar difficulties.

I advocate an alternative proposal according to which complex nominals contain tacit indexicals. Features of the context allow a variety of relations to be expressed using CNs, but this variety is not expressed in the lexicon or the semantic rules of the language. This proposal accounts for the diversity of uses CNs can possess while preserving compositionality.
Wiliarty, Kevin  
(Wesleyan University, Middletown)  
kwiliarty@wesleyan.edu  

**PHLI: Compositionality versus Idiomaticity in Second Language Acquisition**  
Hall 2D, Wednesday, 14:15-14:45  

Foreign language learners are often frustrated by idiomaticity, a notion I define as 'conventional non-compositionality.' My cognitive-linguistic model of second language idiomaticity emphasizes the non-compositionality not only of lexically specified expressions, but also of grammatical constructions, in particular of a class of expressions I call 'directional metonymies.' For these expressions, I identify regularities in English speakers' learner German that defy explanation by direct L1 interference. Instead, I invoke four cognitive effects of idiomatic second language acquisition: 1) phrasewise learning, 2) high-spots first, 3) leaking and 4) idiomatic inflection. The implications for compositionality are complicated: While idiomatic expressions are inherently non-compositional, it is only their ostensible compositionality that makes them available for novel inflection. Moreover, if we are willing to accept a non-atomistic interpretation of compositionality, complex lexical items, by reducing the burden on on-line pragmatic processing, may actually increase rather than diminish the overall compositionality of situated utterances.
**Poster Presentations**

**Bretones, Carmen**  
(University of Almería)  
cbretones@hotmail.com  

**Embodied Construction Grammar: A Model of Compositional Representation**  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10  
The aim of this paper is to further the exchange of views on compositionality across disciplines. The Embodied Construction Grammar theory states that language comprehension and language generation are possible thanks to a set of constructions elaborated by means of the interaction of semantic units and simulation-based inference based in bodily grounded structures, such as image schemas and executing schemas (Bergen et al. 2001). It intends to show how different constructions elicit different mental arrays. Mental access to such structures depends on the kind of connections we deal with and the way in which different connections pop the integration of form and meaning. Different examples (from English and Spanish) will illustrate this phenomenon. As a whole, this study tries to demonstrate that the cognitive processes arise from neural interactions that take place by means of synaptic connections (Feldman & Lakoff forthcoming) and that result from specific mental states. The final aim is to make it clear that a complete theory of compositionality should take into account the linguistic form of its given utterance and that the analysis should go beyond traditional referential analysis.

**Breuer, Marc**  
(Heinrich Heine University Düsseldorf)  
breuermc@phil.-fak.uni-duesseldorf.de  

**Compositionality and Implicit Knowledge**  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10  
In truthfunctional semantics languages are treated as ideal objects. However, the main reason to impose compositionality as a condition of adequacy on a theory of meaning for a language stems mainly from their learnability by real speakers. The dispute I would like to survey starts with a provocative paper by Crispin Wright who argues that the compositionality condition can only be justified when the theory of meaning is considered to be a description of the implicit knowledge of the language a real speaker has. Such a conception of semantic knowledge, Wright continues, is incoherent with Wittgenstein's (1953) consideration of rule-following and therefore fails to justify the compositionality condition. Using ideas by Gareth Evans, Martin Davies and Alexander Miller, I argue that (i) Wright's attack finally fails and (ii) theories of meaning should be constructed in a way that their derivational structure mirrors the structure of the dispositions a real life speaker has.
**Dumitru, Marius**  
(University of Bucharest)  
mariusdmtr@yahoo.com  

*Compositionality, Mentalese, and the Dynamic Map of Thought*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10

I argue that the compositionality of mental representations is, in the context of symbolic cognitive architectures, explained both by a language of thought (mentalese) and by a dynamic map of thought. While considering the intriguing suggestion that human thought may actually inherit its putative systematicity from the grammatical structure of human language itself, I want to further argue that the explanation in terms of mentalese is derived, being based on the structural characteristics of an external medium, i.e. a natural or formal language, and not on intrinsic structural characteristics of the mental representational system. I consider as primary explanation the one that stresses the pre-existence of a dynamic map-like medium. I also consider that the characteristics of depictive representations are strongly dependent upon the characteristics of our perceptual apparatus and that the dynamic map of thought is more bound to account for the context-sensitive and holistic character of semantic interpretation.

**Family, Neiloufar**  
(EHESS, Paris)  
family@broca.inserm.fr  

*Semantic Forms and Verbal Compositionality in Persian: The Case of Gereftæn*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10

**Gracci, Sandra**  
(University of Pisa)  
s.gracci@humnet.unipi.it  

*Acquisition of Italian by Tamil Speakers: Psycholinguistic Considerations*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10

The aim of the present work is a synchronical analysis of interlanguages of a sample of Tamil speakers who live in Bologna (Italy). Tamil is an agglutinative SOV typed language. It is spoken by about 60.000.000 speakers in the federal state of Tamil Nadu (Southern India) and in the island of Sri Lanka.

The main features of our informants’ interlanguages will be analysed, bringing out simplification processes working in acquisition of a second language (hypothesis of pidginization). Features of the morpho-syntactic analysis level will be mostly taken into account. Many of these characteristics could have been expected as they are already recognized as universal features in the interlanguages of Italian L2 learners independently of their native languages (L1). It is interesting to note that these features can be interpreted as simplified forms of Italian. At the level of the morpho-syntactic
system, two simplifying principles can be pointed out, generally characterising the morphology and syntax of our informants: ellipsis and usage of base forms.

Gurova, Lilia
(New Bulgarian University)
gurova@cblink.net
Compositionality as a Feature Differentiating Mental Natural Kinds and Conceptual Artifacts
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10
In the debates about concepts compositionality is recognized as the most crucial problem for the prototype theories. In the same way, the lack of definitions for some concepts is considered the most serious problem for the classical theories of concepts. The so-called dual theories seem to be today the only attempt to reconcile in a single theory both prototypes and definitions. Dual theories, however, give rise to no less serious problems. This paper outlines a different way to make sense of the controversy between prototypes and definitions. Central for it is the assumption that there are two different kinds of constituents of thought natural mental products (which have prototypical structure but are not compositional) and conceptual artifacts (represented by definitions or theories which are compositional). It will be shown that this assumption allows to manage with the problem of compositionality better than any version of the dual theory.

Hsieh, Shelley Ching-yu & Chinfa, Lien
(Southern Taiwan University of Technology) & (National Tsing Hua University)
shelley@mail.stut.edu.tw
The Compositionality of Botanical Concepts in Languages: A Study of Mandarin Chinese and German Plant Fixed Expressions
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10
This paper examines fixed expressions that contain plant names in Mandarin Chinese and German corpora. It aims to explore the popular vehicles (plant names) and the underlying conceits in these two languages, then to reveal the compositionality of the concepts of these vehicles by means of frame semantic. Chinese vehicles fall mainly into the categories of trees and flowers, whereas German vehicles are vegetables and divisions of plants such as seeds and roots. We see that German notice the individual division of the plants while Chinese behold the holism. Chinese and German observe and perceive the plants from different standpoint and therefore compose different concepts in their minds and languages. The linguistic frames of flowers show that German lay emphasis on functionalism by adopting the usability and edibility of the plants in their expressions, while Chinese perceive the outer appearance of the plants and compile "visual" Chinese expressions.
**Massacra, Laura**  
(Institut Jean Nicod, Paris)  
massacra@libero.it  
*What depends on what? A critique to the Asymmetrical Dependence Condition in Jerry Fodor’s Theory*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10  
The theory of content, as it was developed by Jerry Fodor, provides for a special condition suited to distinguish veridical content’s occurrences by disjunctive content’s occurrences, namely, the Asymmetrical Dependence Condition. According to Fodor’s theory the Asymmetrical Dependence Condition (ADC) can really solve the “disjunction problem” and protect true content’s occurrences by the occurrences of false content. The principal aim of this paper is to show that, as it is conceived by Fodor, ADC is an inadequate condition to give an exhaustive account of the difference among true contents and false contents because it secretly presupposes what it has to explain. This will be shown by representing how ADC really works in explaining the difference between disjunctive and true contents within a causal theory of content. As a consequence it will be claimed that ADC is quite unable in mirroring the falsity (the asymmetrical dependence) of a given disjunctive content.

---

**Mateu, Jaume**  
(Autonomous University of Barcelona)  
Jaume.Mateu@uab.es  
*Lexical Decomposition and Syntactic Argument Structure*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10  
The main purpose of this paper is to show the theoretical and empirical advantages of adopting an l-syntactic approach to lexical decomposition. In particular, here we show that ‘multiple argument structure’ cases are more appropriately dealt with under Hale & Keyser’s (2002) l-syntactic approach, rather than under Jackendoff’s (1990, 2002) conceptual approach. We concentrate on the classical case study of the verb climb, whose lexical representation is also analyzed by Jackendoff (1985, 1990). One of our main claims is that argument structures are not to be drawn from intuition-based conceptual structures but from linguistically motivated syntactic structures. For example, we show why the unergative use of the verb climb in Joe climbed cannot be decomposed into the GO-(unspecified)PATH semantics or why Joe climbed to the top of the mountain and Joe climbed the mountain cannot be assigned the same GO-TO-TOP semantics (contra Jackendoff 1990).
Raissovitch, Mukminov Ramil  
(Uljanovsk's State University)  
linguist@rambler.ru  

*The Morphothemic Analyses of the Verbs of Communication*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10

Zasyekina, Larysa  
(Volyn State University)  
slcd@privat-online.net  

*Psychosemantic Investigation of Motivation*  
Roy-Lichtenstein-Hall, Tuesday, 19:10-20:10
Index

Andler 11
Braisby 12, 34
Brandl 9, 18
Bretones 13, 49
Breuer 13, 49
Brighton 7, 18
Buekens 12, 34
Byrd 8, 35
Chinfa 13, 51
Cohnitz 14, 15, 18
Connolly 10, 20
Costello 12, 35, 36
Dahlgrün 8, 36
Dudda 8, 37
Dumitru 13, 50
Dunbar 8, 37
Elugardo 8, 37
Engel 11, 19
Family 13, 50
Garionis 14, 38
Gemes 15, 19
Gleitman 10, 20
Gottschling 12, 38
Gracci 13, 50
Gurova 13, 51
Hardy-Vallée 12, 43
Harnad 9, 20
Hinzen 7, 21
Horgan 11, 21
Hsieh 13, 51
Janssen 14, 22
Leitgeb 14, 23
Lévy 8, 39
Lievers 14, 39
Löbner 7, 24
Machery 9, 14, 25
Mari 8, 40
Massacra 13, 52
Mateu 8, 13, 40, 52
Maye 11, 26
McLaughlin 11, 26
Miyoshi 12, 41
Moulines 26
Mueller-Reichau 8, 41
Newen 12, 42
Pagin 7
Pelletier 8, 27
Penke 9, 11, 27
Peregrin 14, 42
Pietarinen 8, 42
Poirier 12, 43
Potrc 12, 43
Presting 8, 44
Prinz 9, 25, 28
Proisorov 8, 44
Raissovitch 13, 53
Reicher 8, 45
Riester 8, 45
Roels 15, 46
Sandu 7, 29
Schubotz 9, 29
Schurz 9, 15, 30
Spicer 8, 46
van der Velde 14, 47
Weiskopf 14, 47
Werning 11, 30
Westerman 11
Westerstahl 7
Wiliarty 15, 48
Wisniewski 9, 25, 31
Wunderlich 7, 27, 28, 31
Zasyekina 13, 53