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The 7th China International Forum on Cognitive Linguistics

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Ten Lectures on Mind and Language

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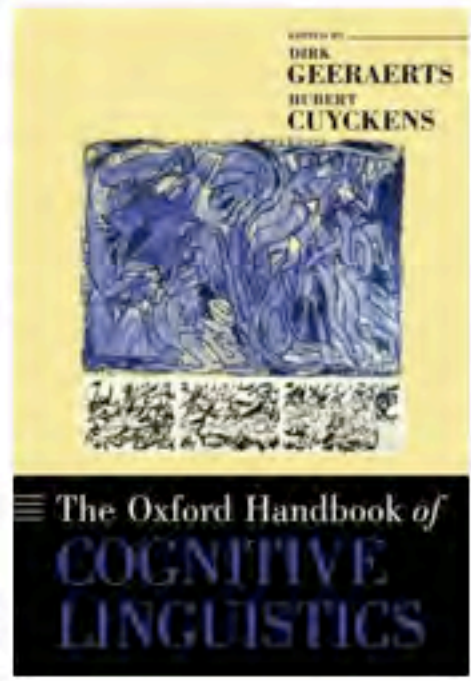


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What is Cognitive Linguistics? "Cognitive linguistics goes beyond the visible structure of language and investigates the considerably more complex backstage operations of cognition that create grammar, conceptualization, discourse, and thought itself. The theoretical insights of cognitive linguistics are based on extensive empirical observation in multiple contexts, and on experimental work in psychology and neuroscience. Results of cognitive linguistics, especially from metaphor theory and conceptual integration theory, have been applied to wide ranges of nonlinguistic phenomena." —Gilles Fauconnier. 2006. "Cognitive Linguistics." *Encyclopedia of Cognitive Science*. John Wiley & Sons. [Pdf of full article.](#)

Candidates may apply for admission to the program, with the purpose of pursuing the M.A. degree, or to non-degree status, with the purpose of taking courses for credit that could be transferred to other institutions. Potential applicants should send initial inquiries to Professor Per Aage Brandt and Professor Todd Oakley, co-directors of admission, at



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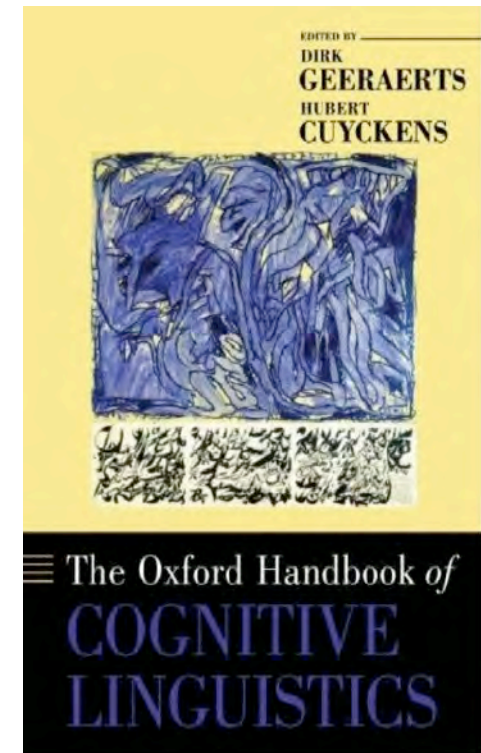
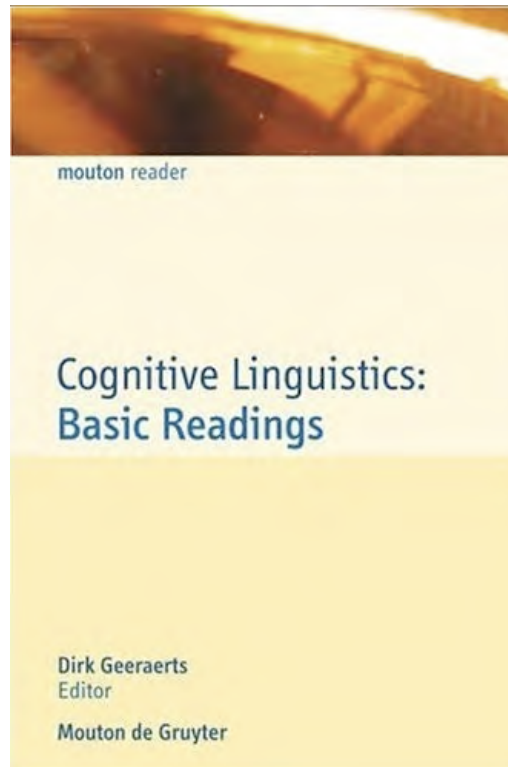
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- **CSDL9 (Conceptual Structure, Discourse, and Language) 18-20 October, 2008. Case Western Reserve University.**
- **Linguistic Society of America Summer Institute 2009 (including a three-week course on Mental Spaces and Conceptual Blending). July-August 2009. UC Berkeley.**

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**What is Cognitive
Linguistics?**

**What is
Language?**

Cognitive Science,
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and the Study of the
Distinctiveness of Human Beings

"For over half a century, modern neuroscience has been on a reductionist path, breaking things down into ever smaller parts with the hope that understanding all the little pieces will eventually explain the whole. Unfortunately, many people think that because reductionism is so often useful in solving problems, it is therefore also *sufficient* for solving them, and generations of neuroscientists have been raised on this dogma. This misapplication of reductionism leads to the perverse and tenacious belief that somehow reductionism itself will tell us how the brain works, when what is really needed are attempts to bridge different levels of discourse. The Cambridge physiologist Horace Barlow recently pointed out at a scientific meeting that we have spent five decades studying the cerebral cortex in excruciating detail, but we still don't have the foggiest idea of how it works or what it does. He shocked the audience by suggesting that we are all like asexual Martians visiting earth who spend fifty years examining the detailed cellular mechanisms and biochemistry of the testicles without knowing anything at all about sex."

— V. S. Ramachandran. *Phantoms in the Brain: Probing the Mysteries of the Human Mind*. NY: Morrow, 1998, page 264.

Universal Grammar?

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REVIEW: NEUROSCIENCE

The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?

Marc D. Hauser,^{1*} Noam Chomsky,² W. Tecumseh Fitch¹

www.sciencemag.org SCIENCE VOL 298 22 NOVEMBER 2002

Hauser, M. D., Chomsky, N., & Fitch, W. T. (2002) The faculty of language: what is it, who has it, and how does it evolve? *Science* 298, 1569-1579.

“We argue that an understanding of the faculty of language requires substantial interdisciplinary cooperation. We suggest how current developments in linguistics can be profitably wedded to work in evolutionary biology, anthropology, psychology, and neuroscience. We submit that a distinction should be made between the faculty of language in the broad sense (FLB) and in the narrow sense (FLN). FLB includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements. We hypothesize that FLN only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language, hence comparative studies might look for evidence of such computations outside of the domain of communication (for example, number, navigation, and social relations).”

Universal Grammar?



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Cognition 95 (2005) 201–236

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The faculty of language: what's special about it?☆

Steven Pinker^{a,*}, Ray Jackendoff^b

^a*Department of Psychology, Harvard University, William James Hall, Cambridge, MA 02138, USA*

^b*Department of Psychology, Brandeis University, Waltham, MA 02454, USA*

Received 16 January 2004; accepted 31 August 2004

“We examine the question of which aspects of language are uniquely human and uniquely linguistic in light of recent suggestions by Hauser, Chomsky, and Fitch that the only such aspect is syntactic recursion, the rest of language being either specific to humans but not to language (e.g. words and concepts) or not specific to humans (e.g. speech perception).”

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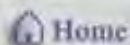
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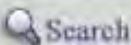


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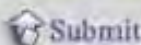
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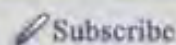
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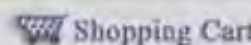
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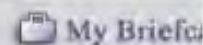
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"What are We?: The Convergence of Self and Communications Technology." 2008. In *Integration and Ubiquity: Towards a Philosophy of Telecommunications Convergence*, edited by Kristóf Nyíri. Vienna: Passagen Verlag. 21-28. [CSN version](#).



"Frame Blending." 2008. In *Frames, Corpora, and Knowledge Representation*, edited by Rema Rossini Favretti. Bologna: Bononia University Press. 13-32. [Pdf of draft](#). [CSN version](#).



"The Way We Imagine." In Ilona Roth, editor, *Imaginative Minds. Proceedings of the British Academy*. London: Oxford University Press & the British Academy. [Pdf of draft](#).



"The Art of Compression" in *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*. Edited by Mark Turner. Oxford University Press, October 2006. [Zipped pdf version](#).



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Case Western Reserve University - Department of Cognitive Science

INTEGRATION AND UBIQUITY: TOWARDS A PHILOSOPHY OF TELECOMMUNICATIONS CONVERGENCE, Nyíri, Kristóf, ed., Vienna: Passagen Verlag, 2008

Abstract:

The invention of each new communications technology has brought new opportunities for understanding the self by blending our vague, diffuse notions of self over time with our notion of self as a user of the technology. These technologies include semaphore signaling systems, signed language, telegraphy, personal letter writing, telephony, radio, television, e-mail, and chat rooms. We know our technologies better than we know ourselves. Our communications technologies are designed to operate at human scale and are therefore at the center of what we know best. Accordingly, we think of ourselves in terms of them, by blending our general concept of ourselves with our understanding of how the communications technology works.

Keywords: conceptual integration, blending, technology, identity, cognitive science

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Alan Cienki, VU University Amsterdam

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Jean Clarke, *affiliation not provided to SSRN*

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Nathaniel J. Smith, University of California, San Diego - Department of Cognitive Science

Shweta Narayan, University of California, Berkeley

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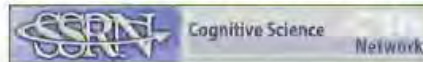
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Professor and Chair of [Cognitive Science](#)
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I study the nature and emergence of higher-order cognitive operations that distinguish human beings from other species and appear in the record of our descent during the Upper Palcolithic.

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["Categorization of Time and Space Through Language."](#) [Foundation For Polish Science](#). Serock near Warsaw, Poland, 25-28 February 2009.

["Big-Time Morality: The Cognitive Science of Moral Considerations Across Space and Time."](#) National Humanities Center symposium on "Autonomy, Singularity, Creativity." 14 November 2008.

[Slavic Cognitive Linguistics Association](#). University of Chicago. 12-14 October 2007.

Eötvös Loránd University, Budapest. 28 September 2007.

[Conference: Communications in the 21st Century](#). Organized by the Hungarian Academy of Sciences and Hungarian Telekom. Budapest, Hungary. 27-29 September 2007.

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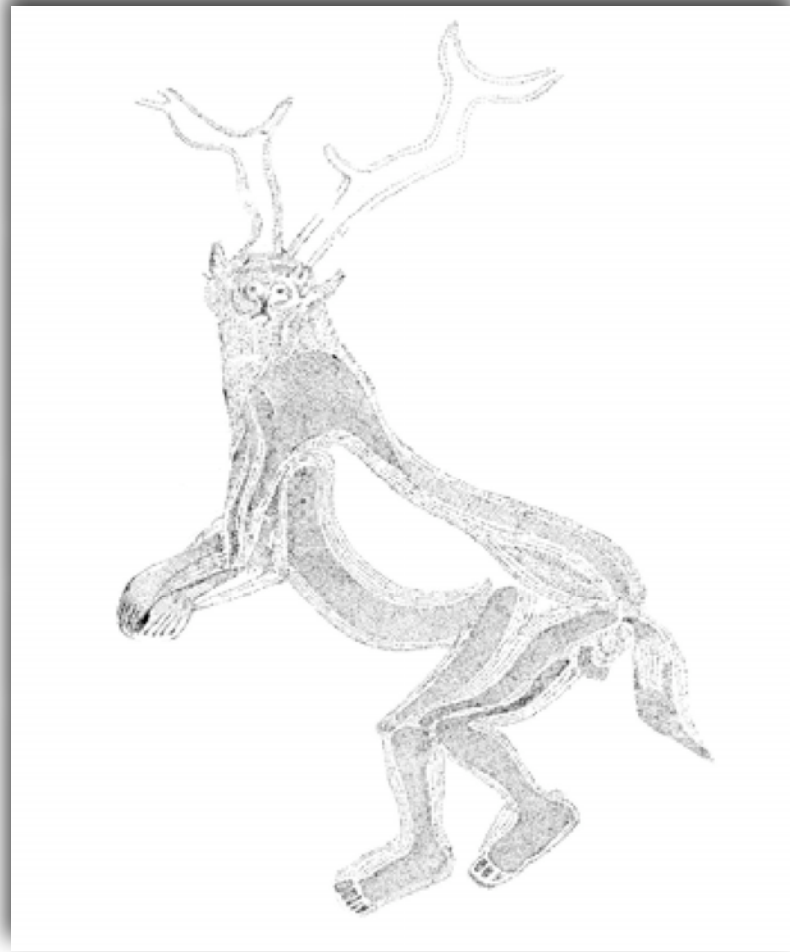
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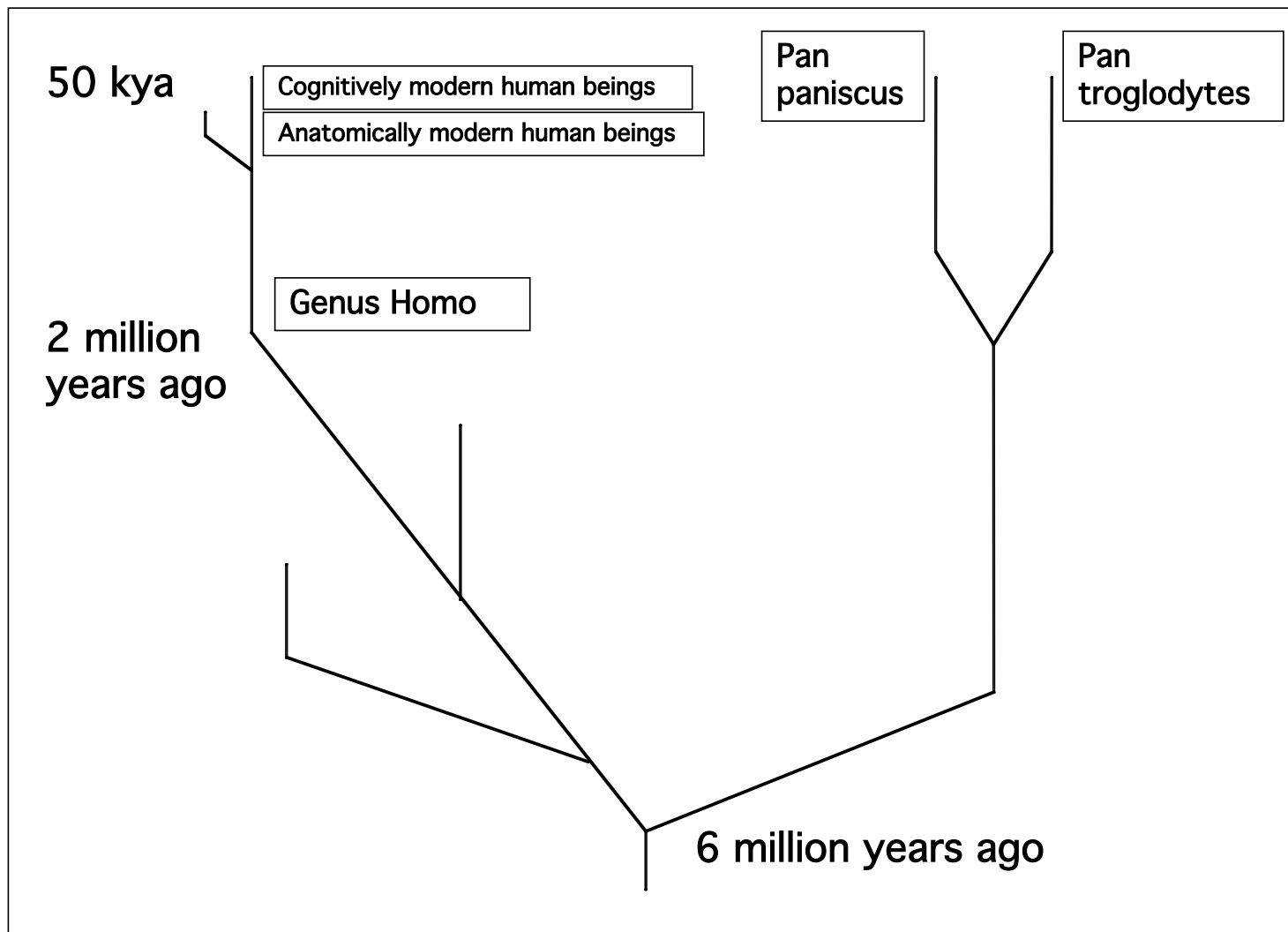


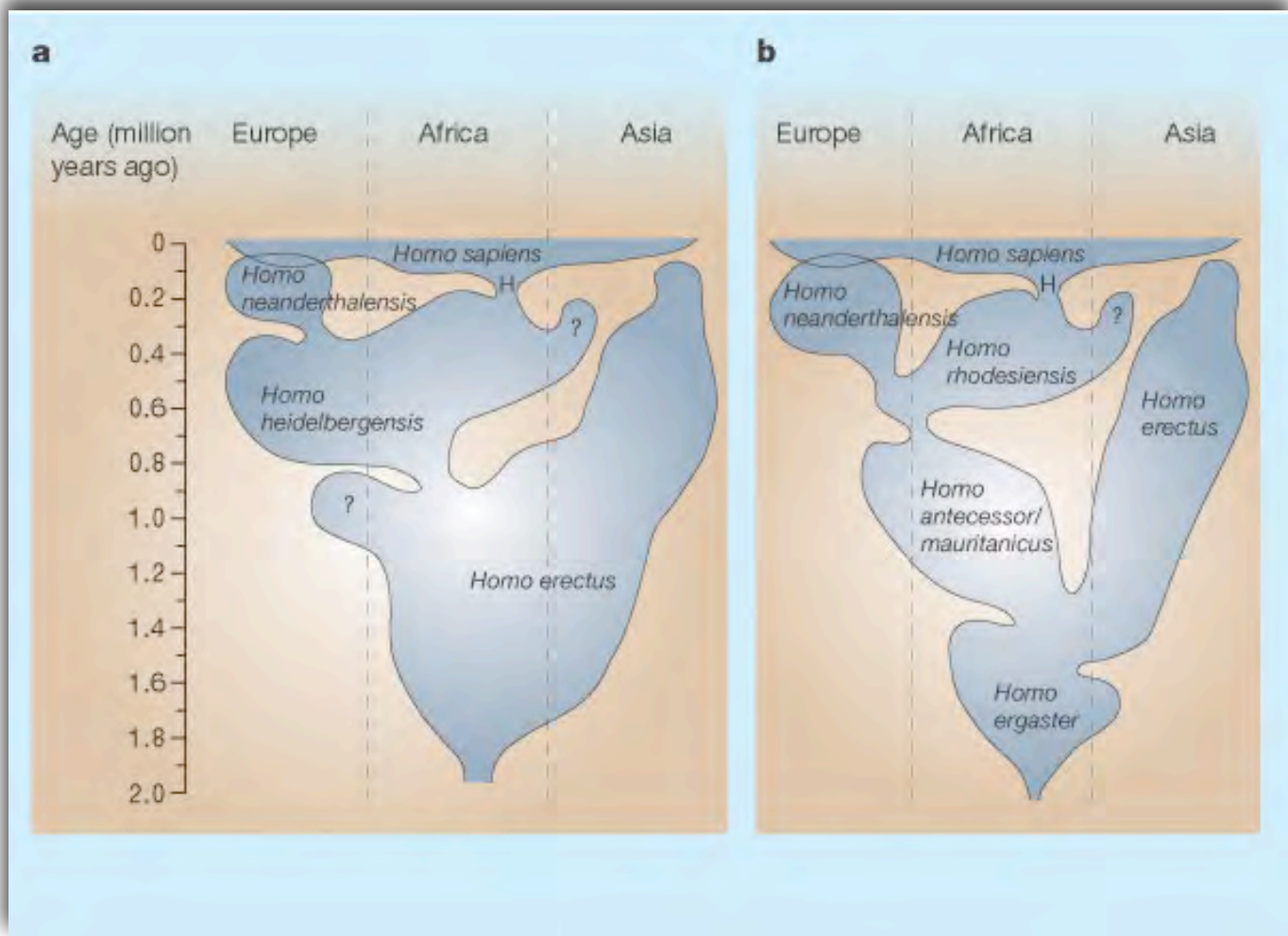
Ivory beads sewn into cloth, Burial at Sunghir



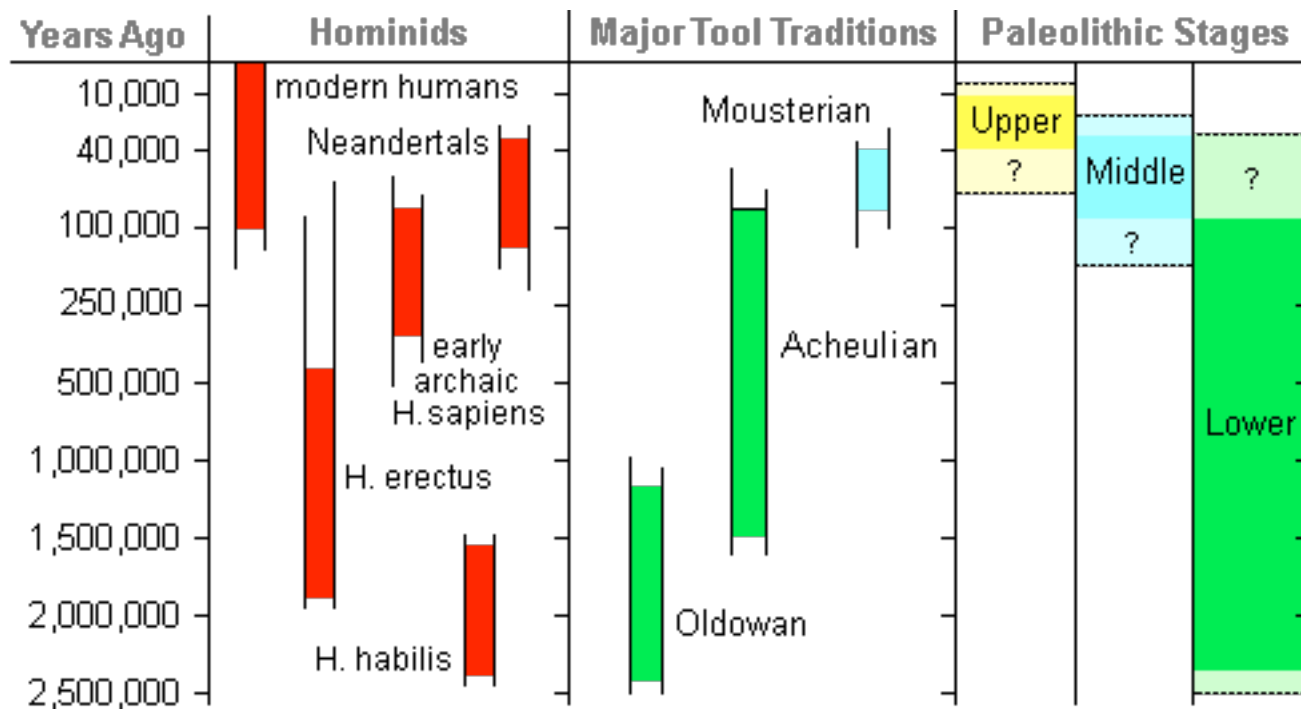
From “The Sanctuary” at Trois-Frères

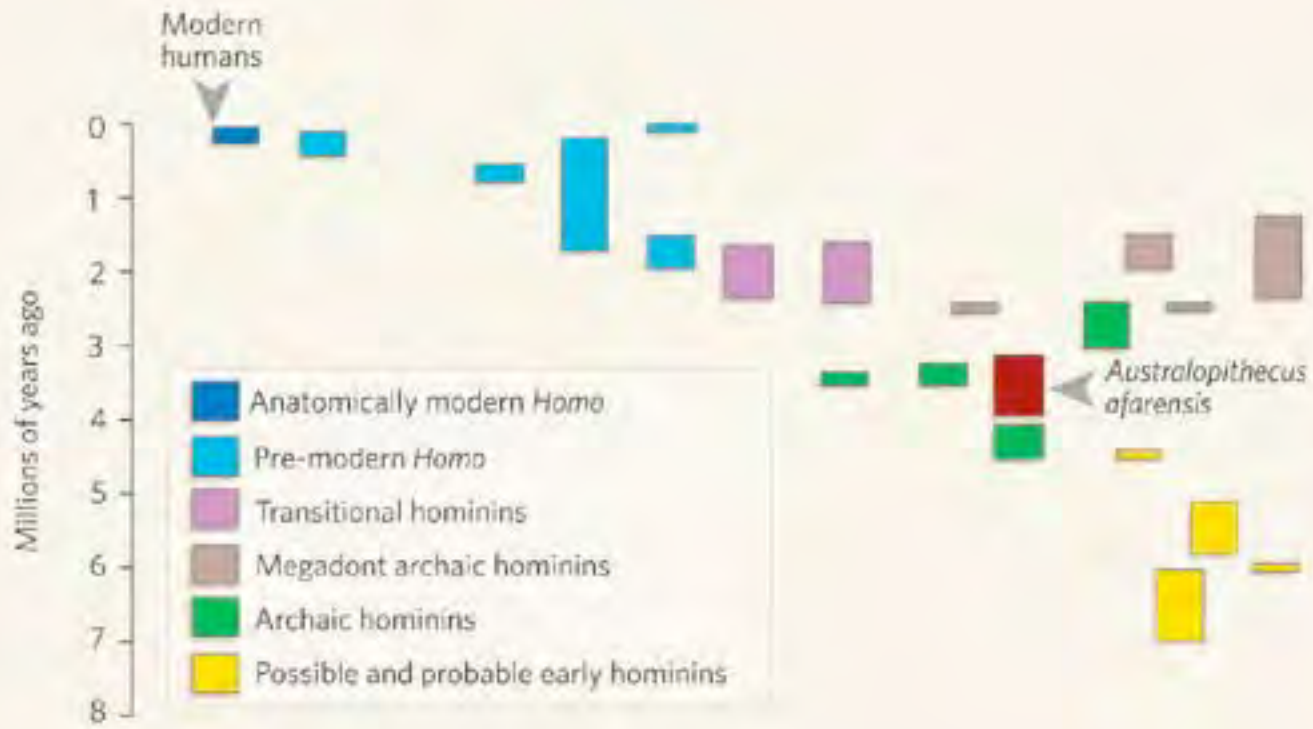






Stringer, Chris. 2003. "Human evolution: Out of Ethiopia." *Nature* 423, 692 - 695.







K. O'Farrell/Concepts

Separation through biological evolution



Gorilla gorilla beringei - Eastern gorilla species



Gorilla gorilla gorilla - Western gorilla species



Homo sapiens - Human beings (Homo sapiens sapiens)



Pan paniscus - Bonobo, or pygmy chimpanzee



Pan troglodytes - Chimpanzee



Pongo pygmaeus - Orangutan

Lemur catta catta

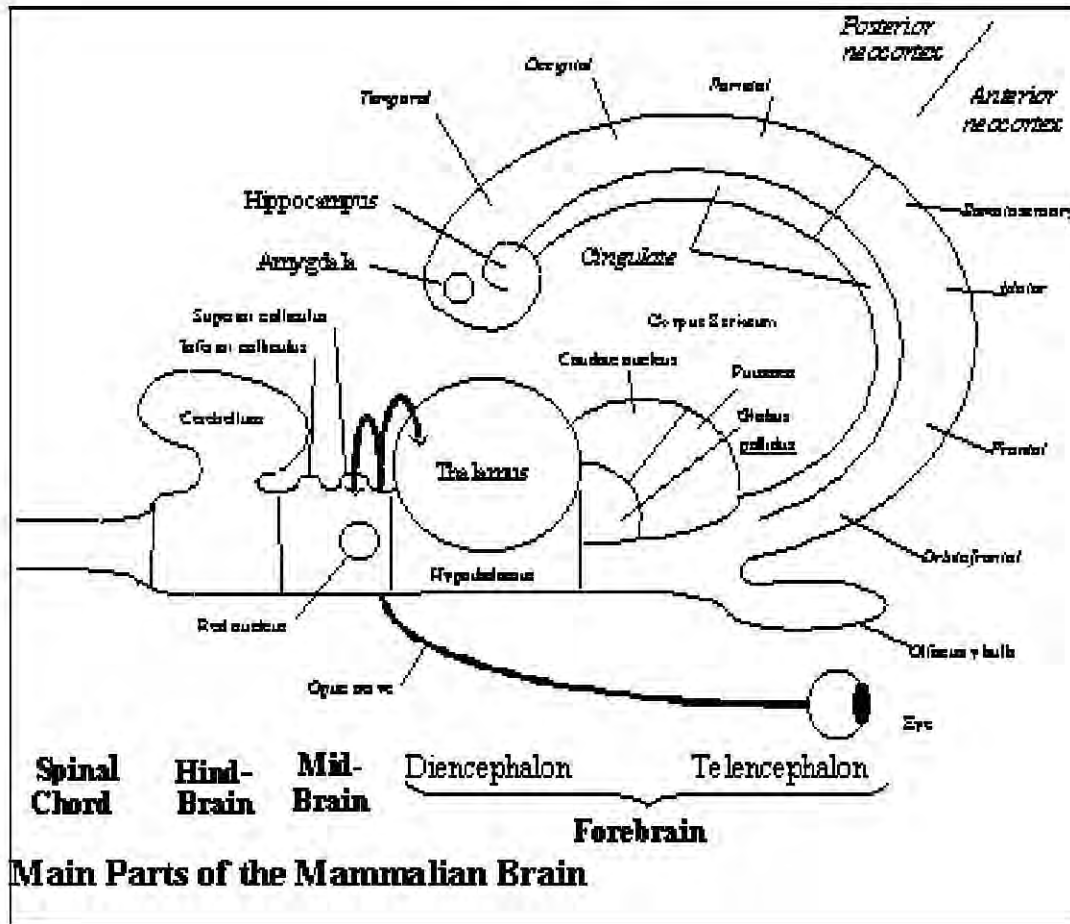
Homo sapiens sapiens

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Primates
Family: Lemnridae
Genus Lemur
Species: Lemur catta

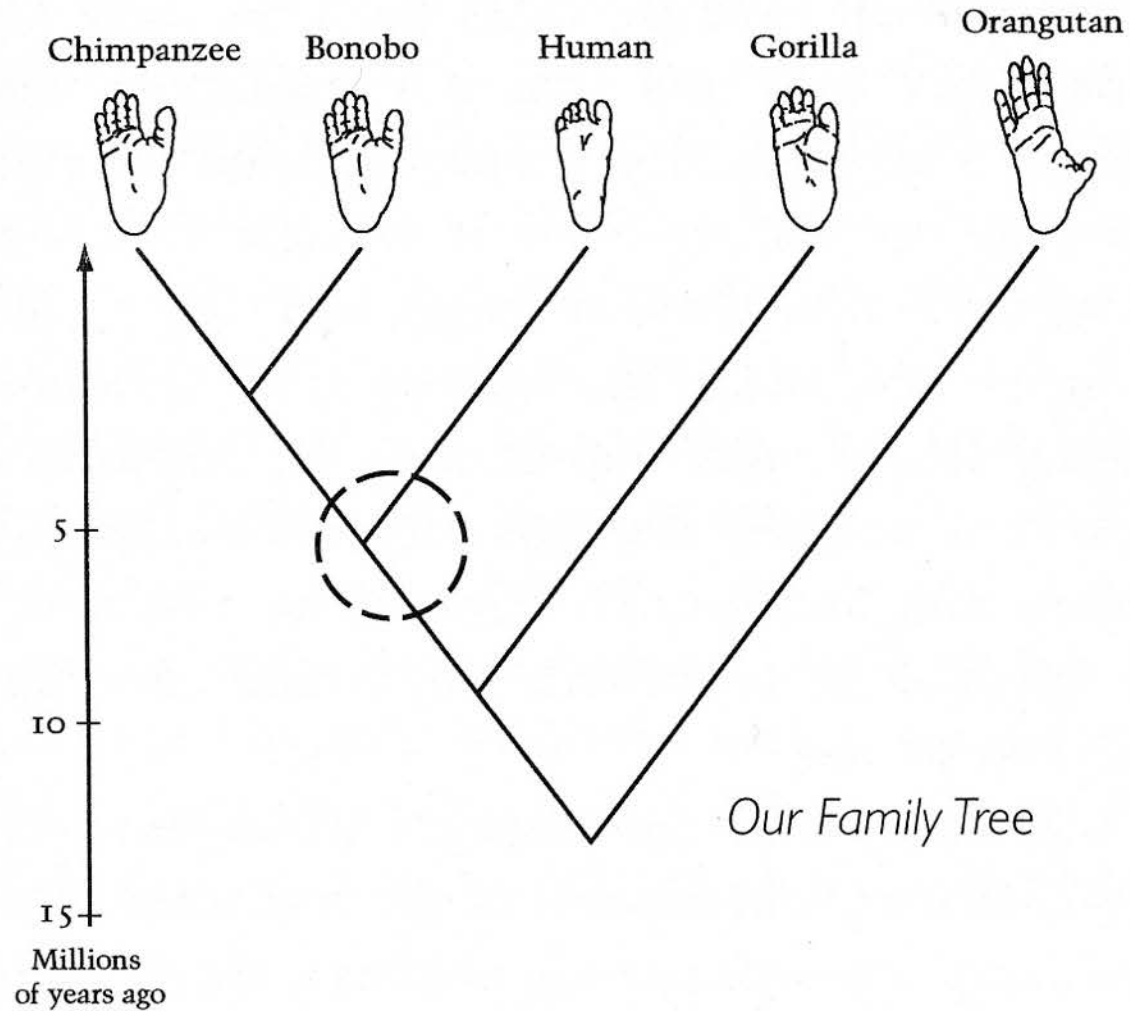
Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Primates
Family: Hominidae
Genus Homo
Species: Homo sapiens



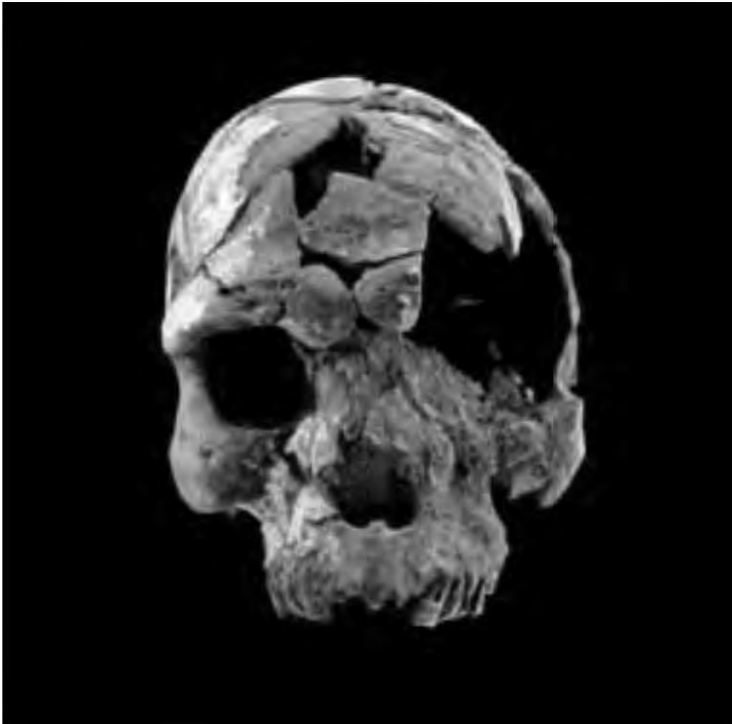




Great ape lineage



The human



160,000-year-old *Homo sapiens*, Ethiopia

Humanity





Vesalius 1542

Where could human beings have come from?

Stories of our origin:



Prometheus and Fire



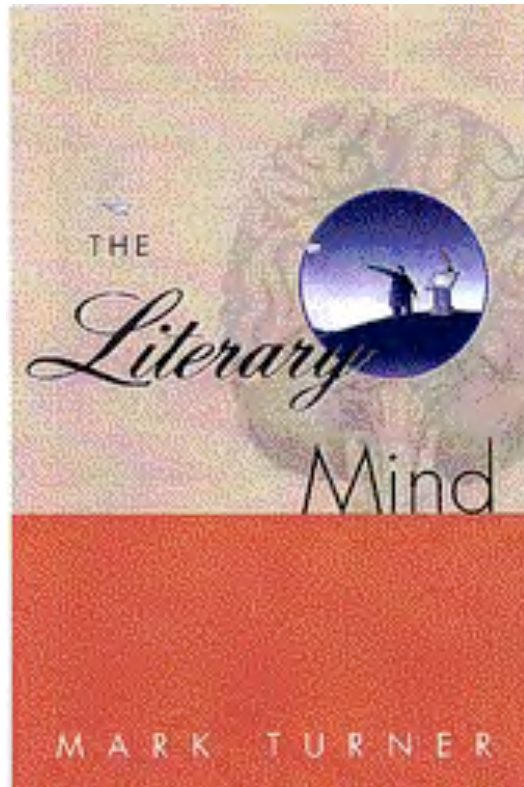
Chinese cave dragon blows on
monkeys



A restless group hikes out of Africa



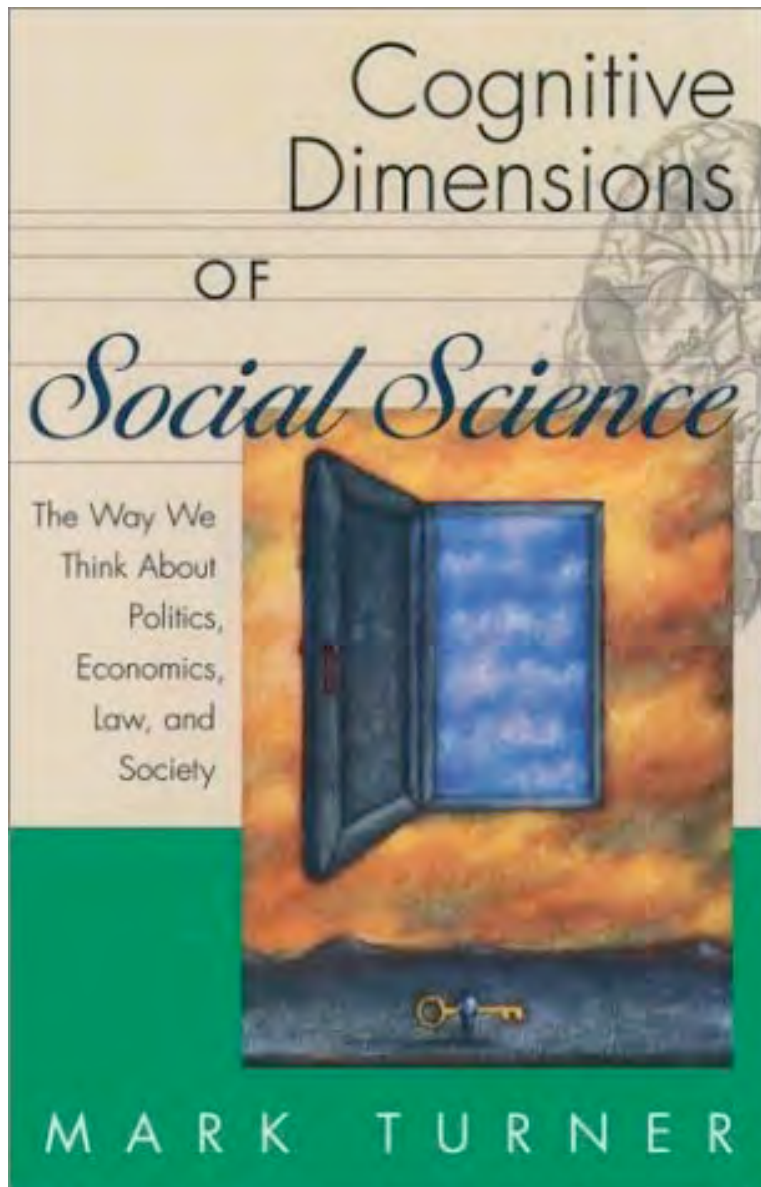
Forbidden Fruit Blending



*The Literary Mind: The
Origins of Thought and
Language*

Mark Turner. Oxford
University Press, 1996

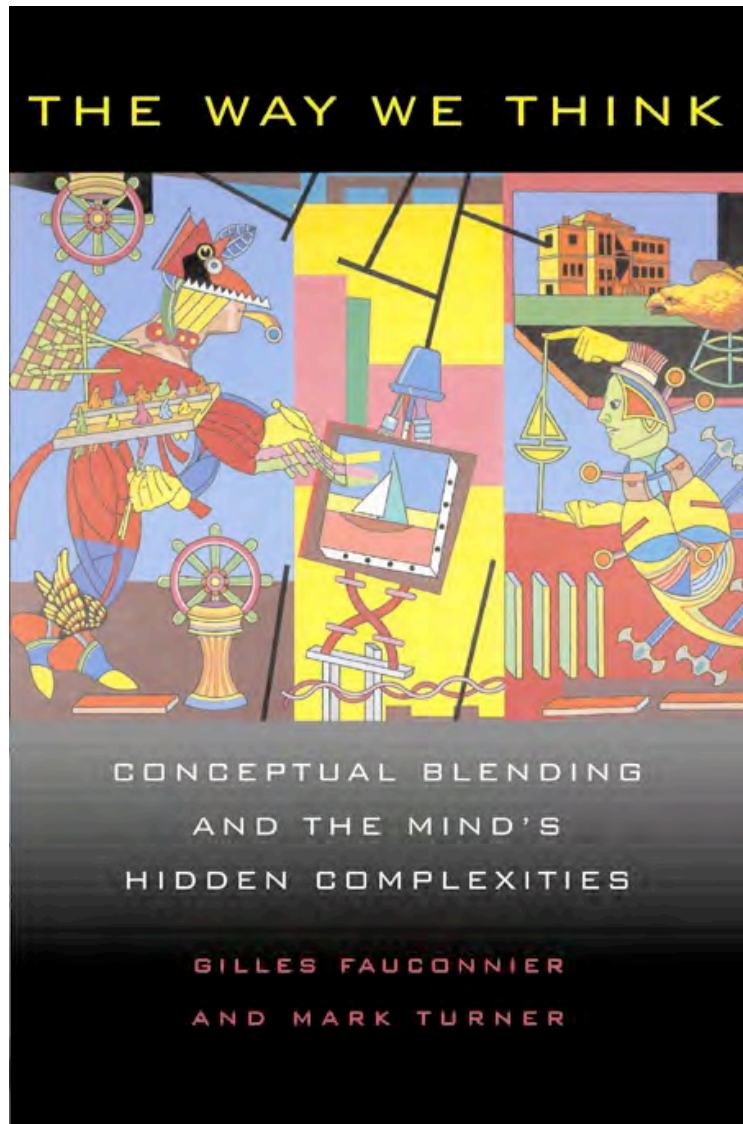
turner.stanford.edu



*Cognitive Dimensions
of Social Science: The
Way We Think About
Politics, Economics,
Law, and Society*

Mark Turner. Oxford
University Press, 2001

turner.stanford.edu



*The Way We Think:
Conceptual Blending and
the Mind's Hidden
Complexities*

Gilles Fauconnier & Mark
Turner, Basic Books, 2002

blending.stanford.edu



Gilles Fauconnier

Major Questions



Language, art, music, mathematical insight, scientific discovery, religion, advanced social cognition, refined tool use, advanced music and dance, fashions of dress, and sign systems. What makes these behaviors possible?



How do they work?



How can new meaning arise?



How does mind go beyond local scale?



Major Question: Transcending Local Scale: Human Scale, Ape Scale, Mammal Scale



1. How can we feel at human scale about things that are beyond human scale?



2. How can human-scale thinking and feeling be involved in long-range causal patterns?



C. S. Sherrington

“an enchanted loom
where millions of
flashing shuttles weave a
dissolving pattern,
always a meaningful
pattern though *never* an
abiding one; a shifting
harmony of subpatterns.”

—*The Integrative Action
of the Nervous System (1906)*

Sir Charles Scott Sherrington
English neurophysiologist, born 27 November 1857,
died 4 March 1952, Eastbourne, Sussex

Major Question: Emergence of New Meaning?



Evolutionary Psychology



Schemata (Learning)



Complexity Theory



Conceptual Blending

Traits

Higher-Order Cognitive Traits: The Wrong View

Music

Sign Systems

Religion

Language

Art

Science

Advanced music and dance

Advanced social cognition

Fashion

Refined tool use

Math

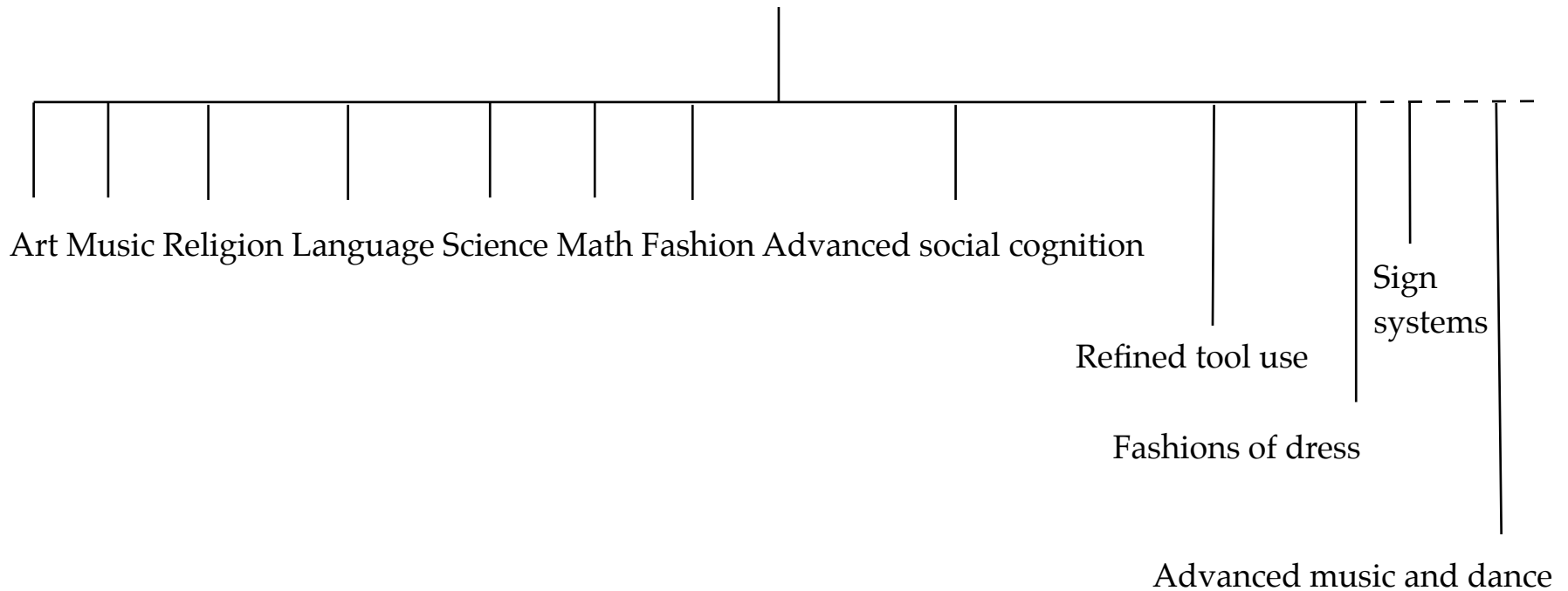
...

"For over half a century, modern neuroscience has been on a reductionist path, breaking things down into ever smaller parts with the hope that understanding all the little pieces will eventually explain the whole. Unfortunately, many people think that because reductionism is so often useful in solving problems, it is therefore also *sufficient* for solving them, and generations of neuroscientists have been raised on this dogma. This misapplication of reductionism leads to the perverse and tenacious belief that somehow reductionism itself will tell us how the brain works, when what is really needed are attempts to bridge different levels of discourse. The Cambridge physiologist Horace Barlow recently pointed out at a scientific meeting that we have spent five decades studying the cerebral cortex in excruciating detail, but we still don't have the foggiest idea of how it works or what it does. He shocked the audience by suggesting that we are all like asexual Martians visiting earth who spend fifty years examining the detailed cellular mechanisms and biochemistry of the testicles without knowing anything at all about sex."

— V. S. Ramachandran. *Phantoms in the Brain: Probing the Mysteries of the Human Mind*. NY: Morrow, 1998, page 264.

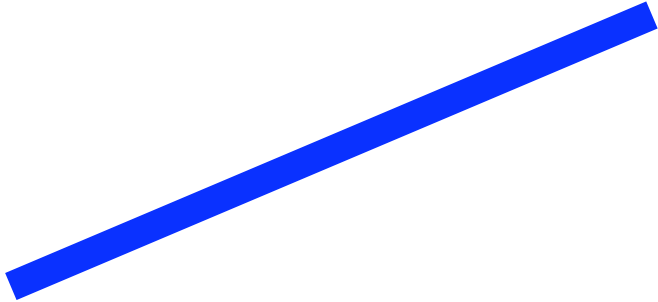
Higher-Order Cognitive Traits: The Right View

Double-Scope Blending

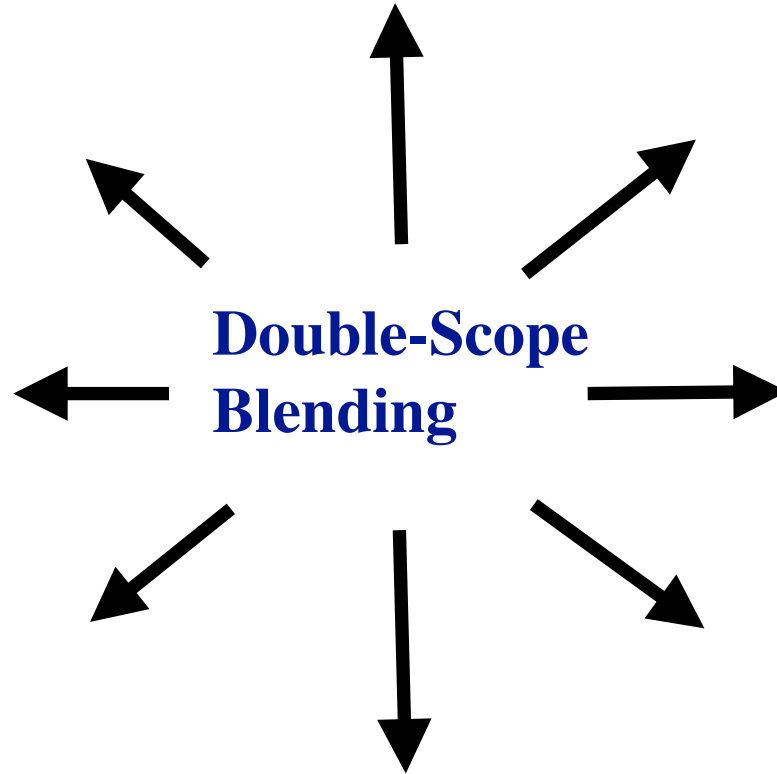


Traits

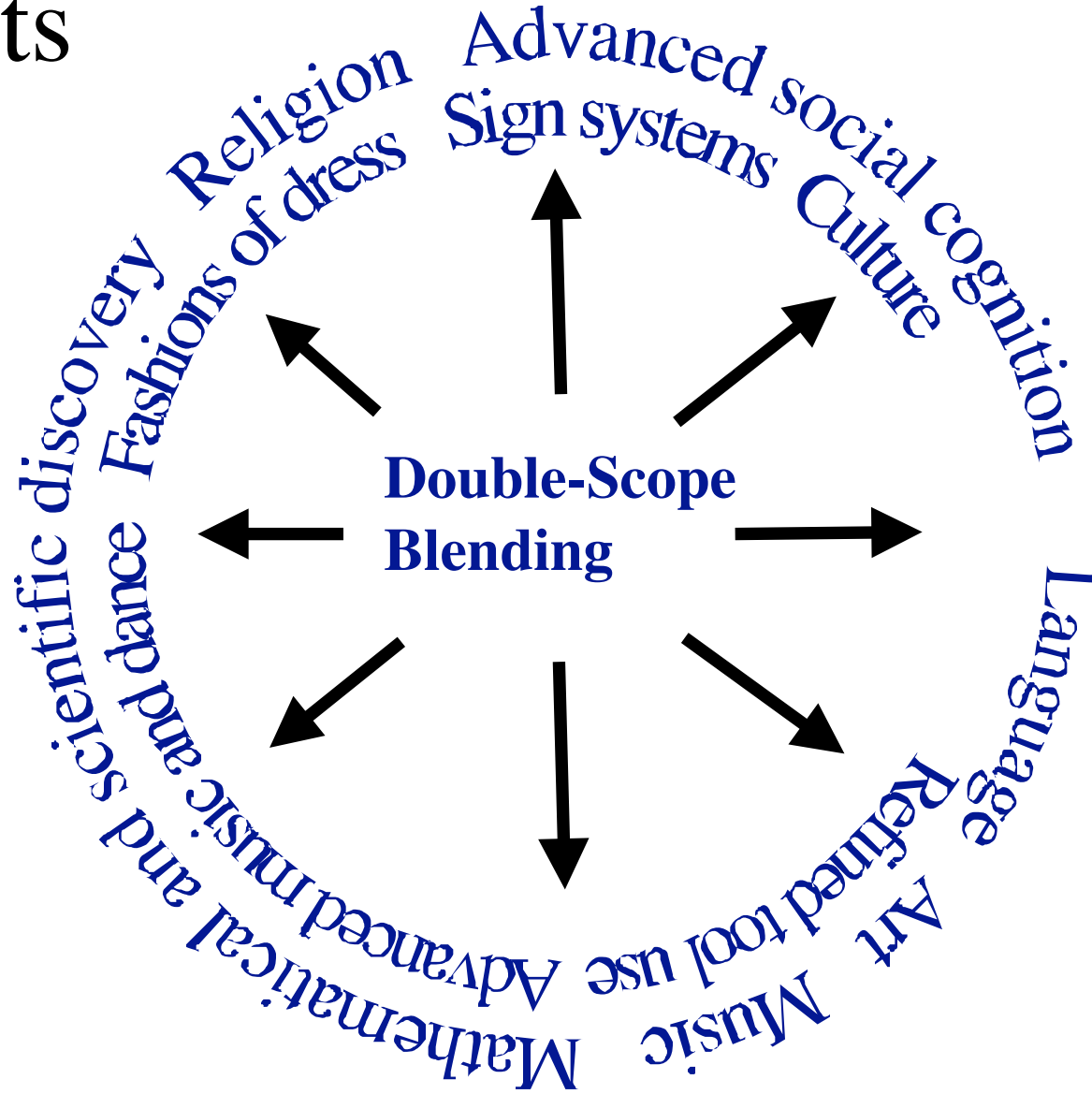
**Double-Scope
Blending**



Traits



Traits



Language, advanced social cognition, mathematical invention, scientific discovery, art, religion, music, advanced tool use and advanced technology, dance, fashions of dress, sign systems, culture . . . **A Pack, a Cohort, a Phalanx, a Troupe, a Self-feeding Cyclone, an Autocatalytic Vortex, a Breeder Reactor, a Self-organizing System . . .**

Cub Scout Law of the Pack



The Cub Scout follows Akela.



The Cub Scout helps the pack go.



The pack helps the Cub Scout grow.

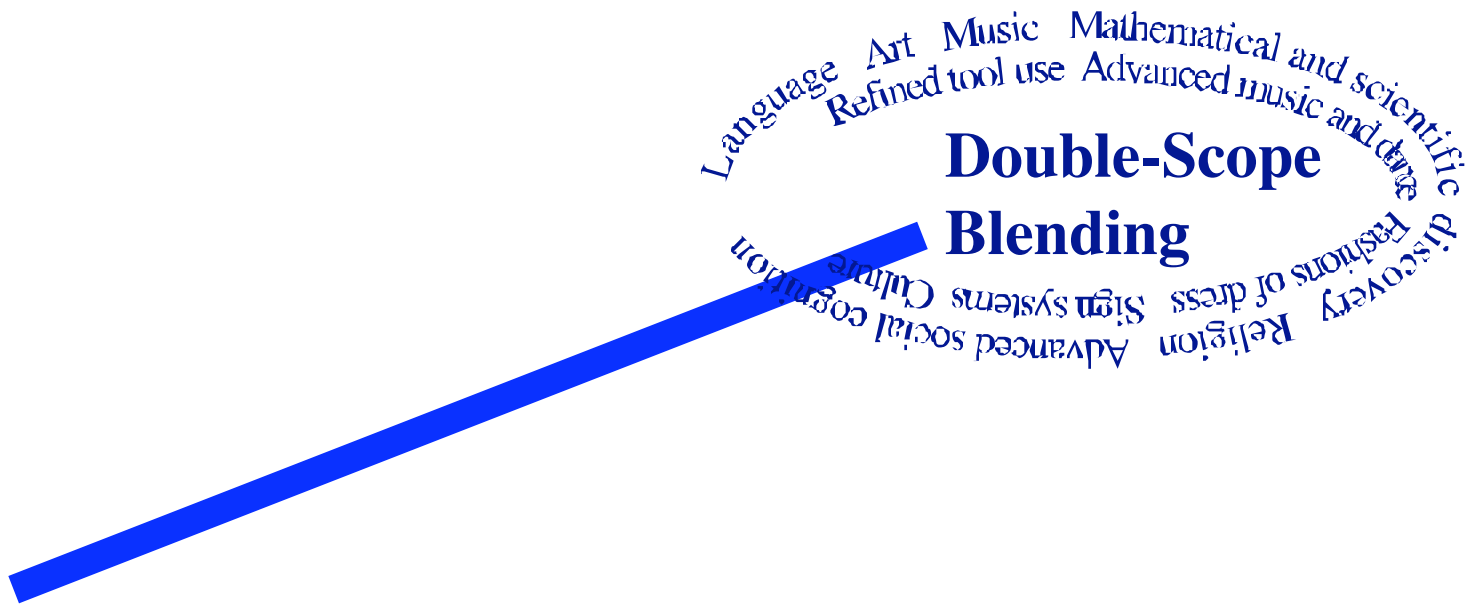
Rilke, *Duino Elegies*, 2.

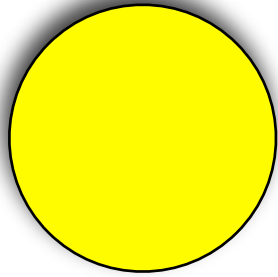
. . . the shrewd animals
notice that we're not very much at home
in the world we've expounded.

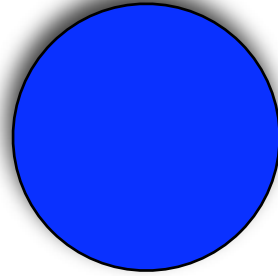
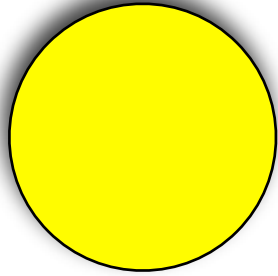
und die findigen Tiere merken es schon,
daß wir nicht sehr verlässlich zu Haus sind
in der gedeuteten Welt.

(Rilke 1961 [1922]; 2)

Conceptual Integration (Blending)







What Memory Is For

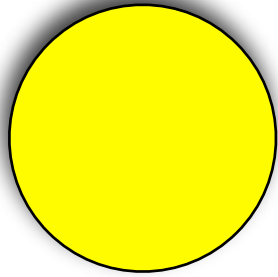
As Arthur Glenberg (1997) writes in “What Memory Is For,”

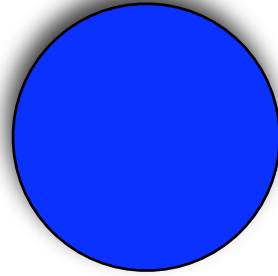
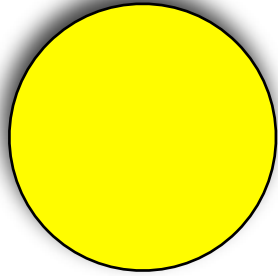
To avoid hallucination, conceptualization would normally be driven by the environment, and patterns of action from memory would play a supporting, but automatic, role.

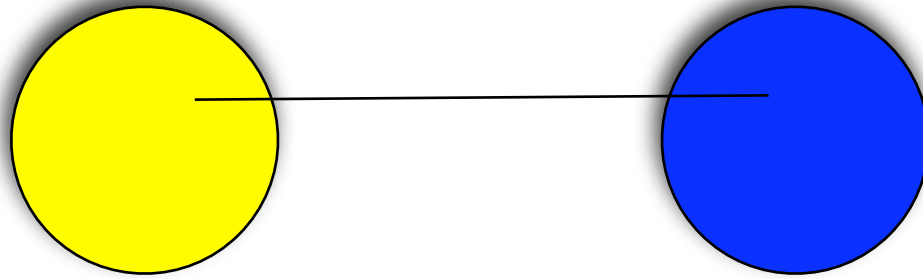
(Glenberg 1997, 1)

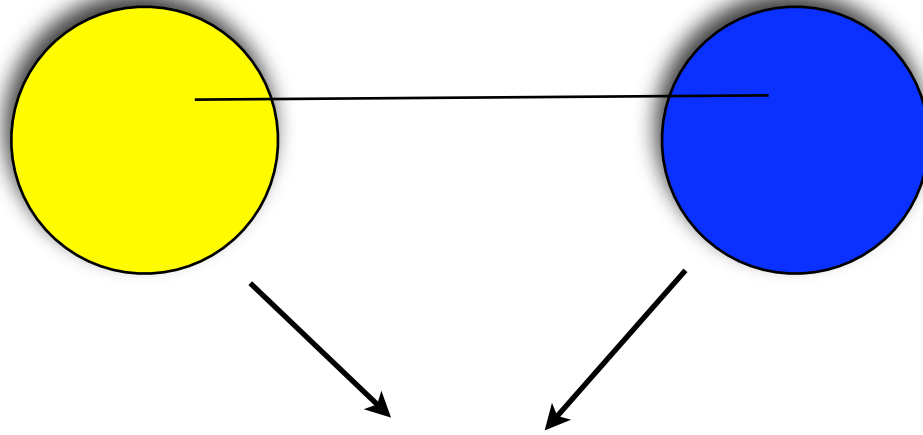
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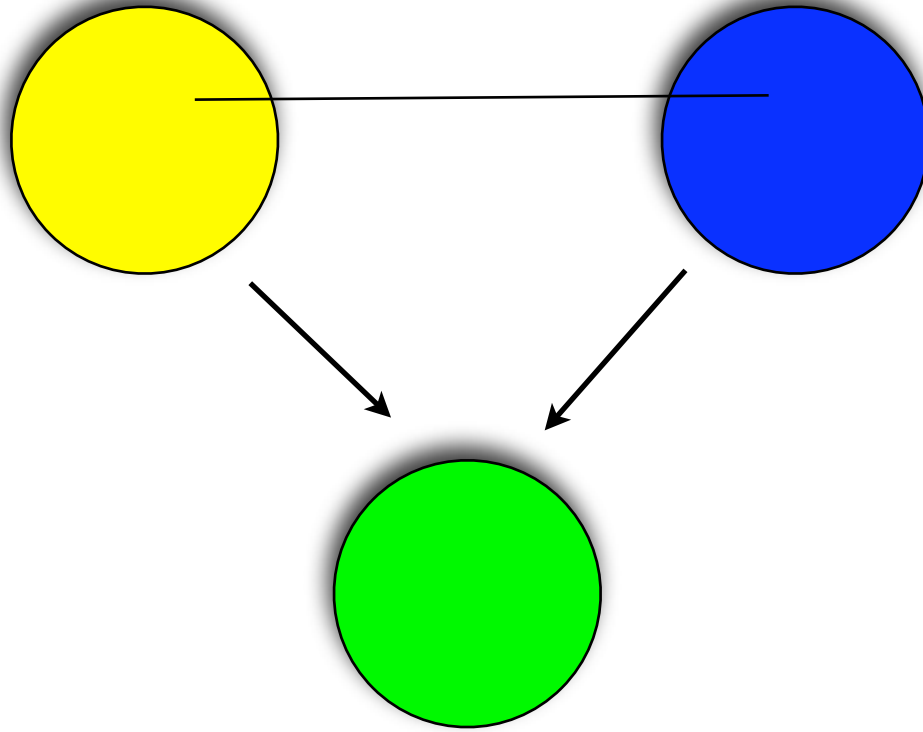
A significant human skill is learning to suppress the overriding contribution of the environment to conceptualization, thereby allowing memory to guide conceptualization. (Glenberg 1997, 1)

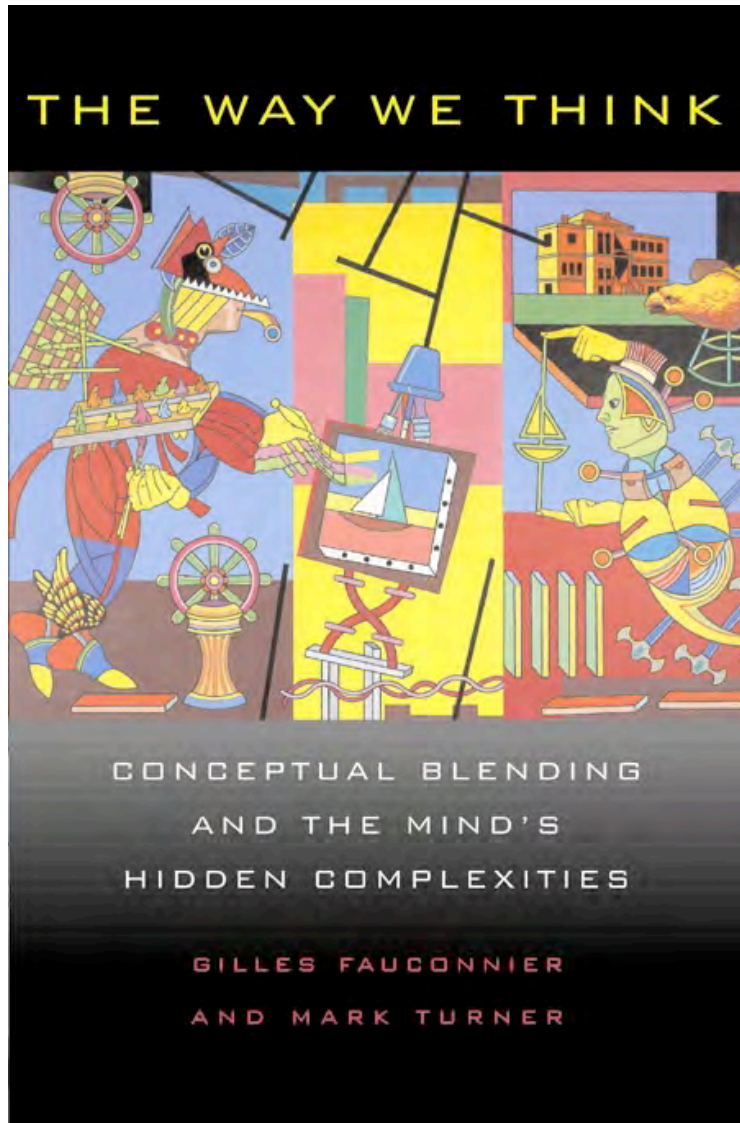










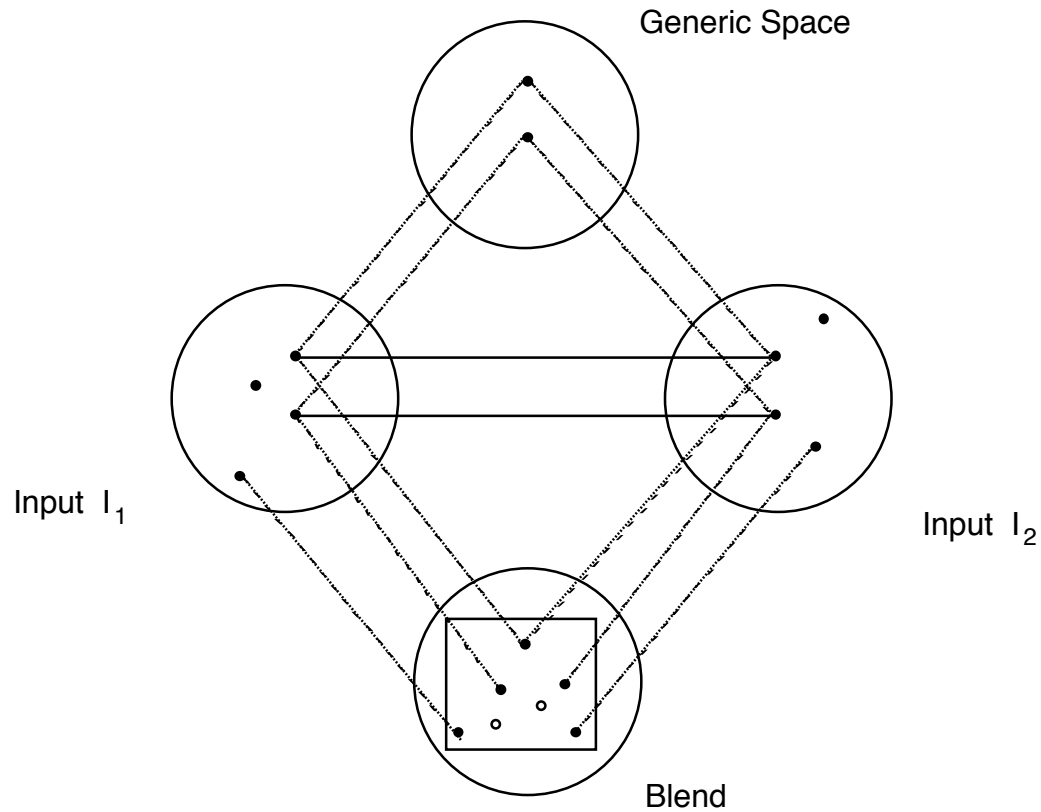


*The Way We Think:
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Complexities*

Gilles Fauconnier & Mark
Turner, Basic Books, 2002

blending.stanford.edu

A typical network

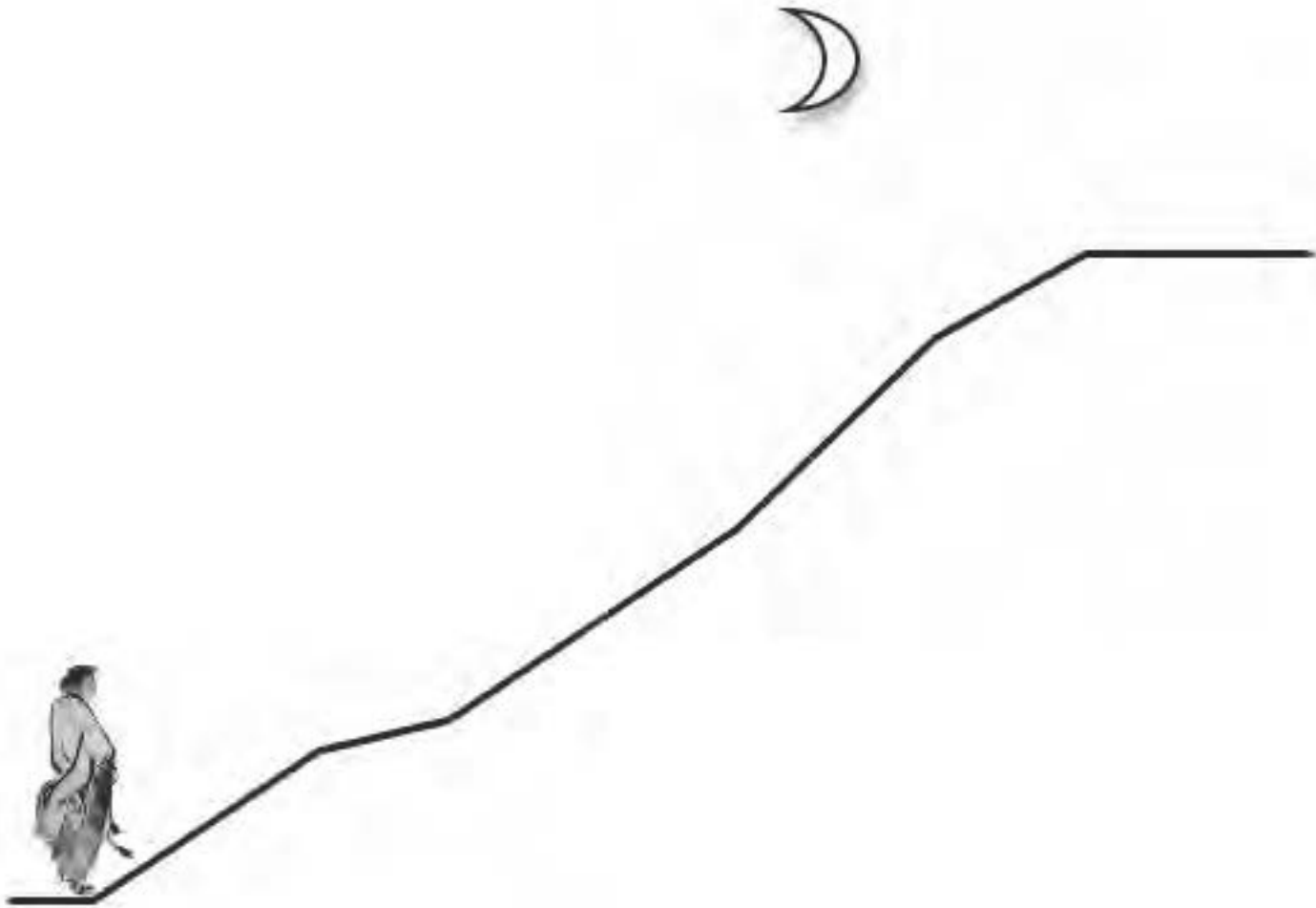


The riddle of the Buddhist Monk

A Buddhist monk begins at dawn one day walking up a mountain, reaches the top at sunset, meditates at the top overnight until, at dawn, he begins to walk back to the foot of the mountain, which he reaches at sunset. Make no assumptions about his starting or stopping or about his pace during the trips.

Riddle: is there a place on the path which the monk occupies at the same hour of the day on the two separate journeys?

The riddle of the Buddhist Monk



谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://markturner.org>

Department of Cognitive Science



CASE WESTERN RESERVE
UNIVERSITY
EST. 1826

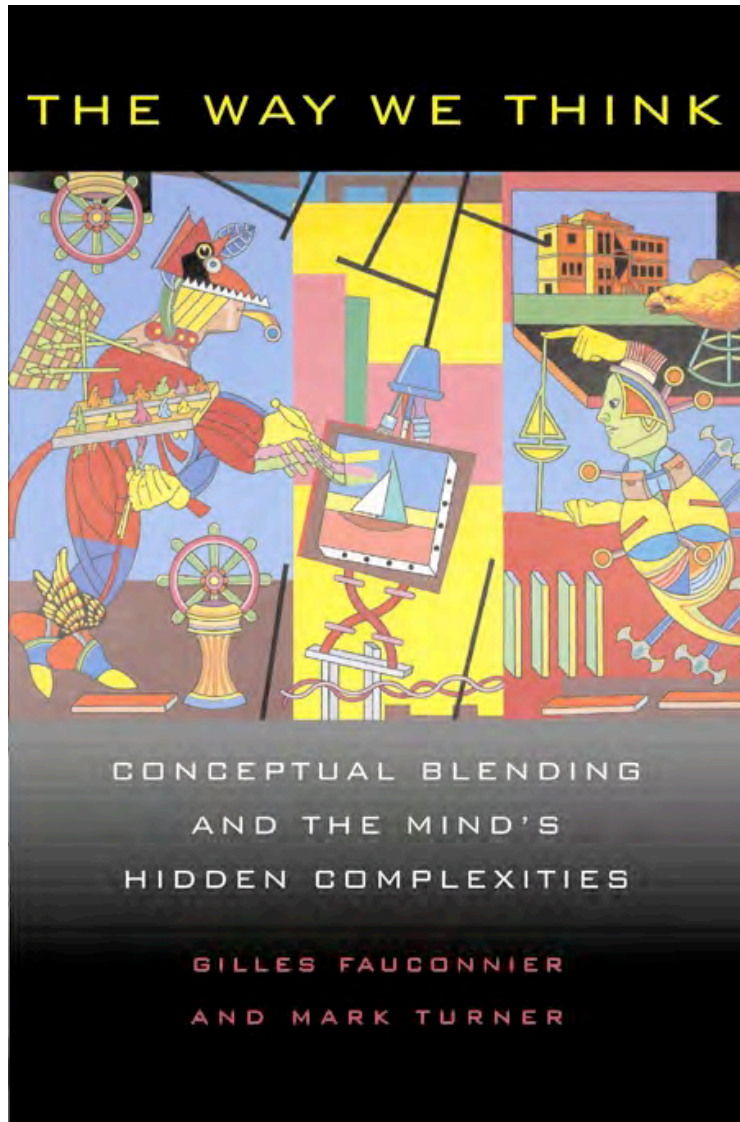
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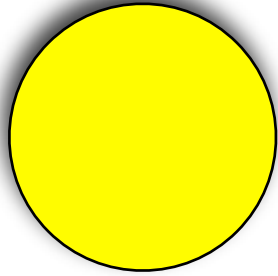
Conceptual Integration

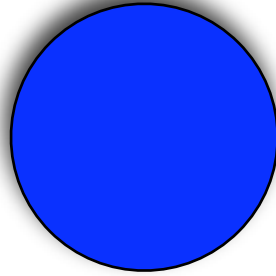
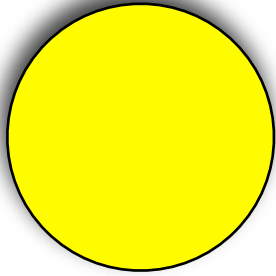


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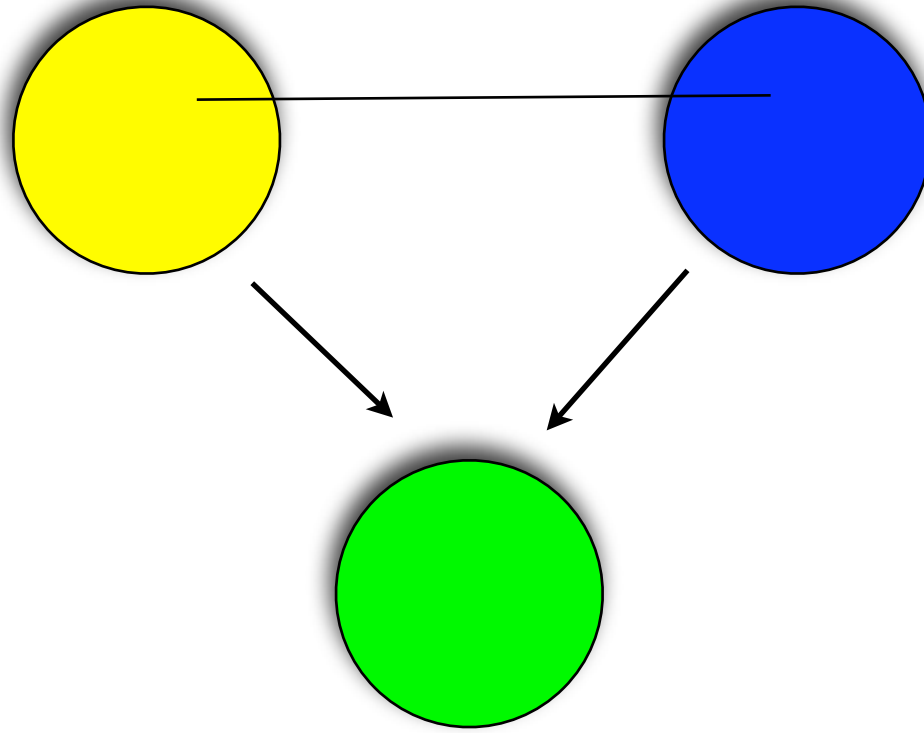
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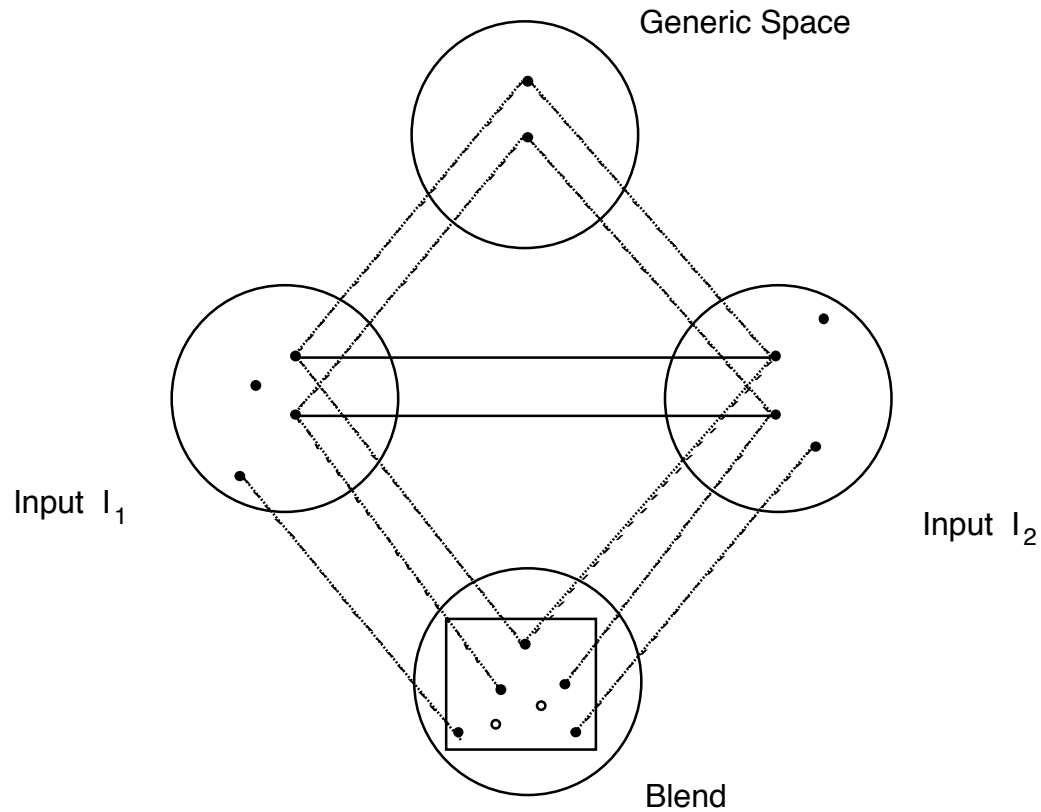
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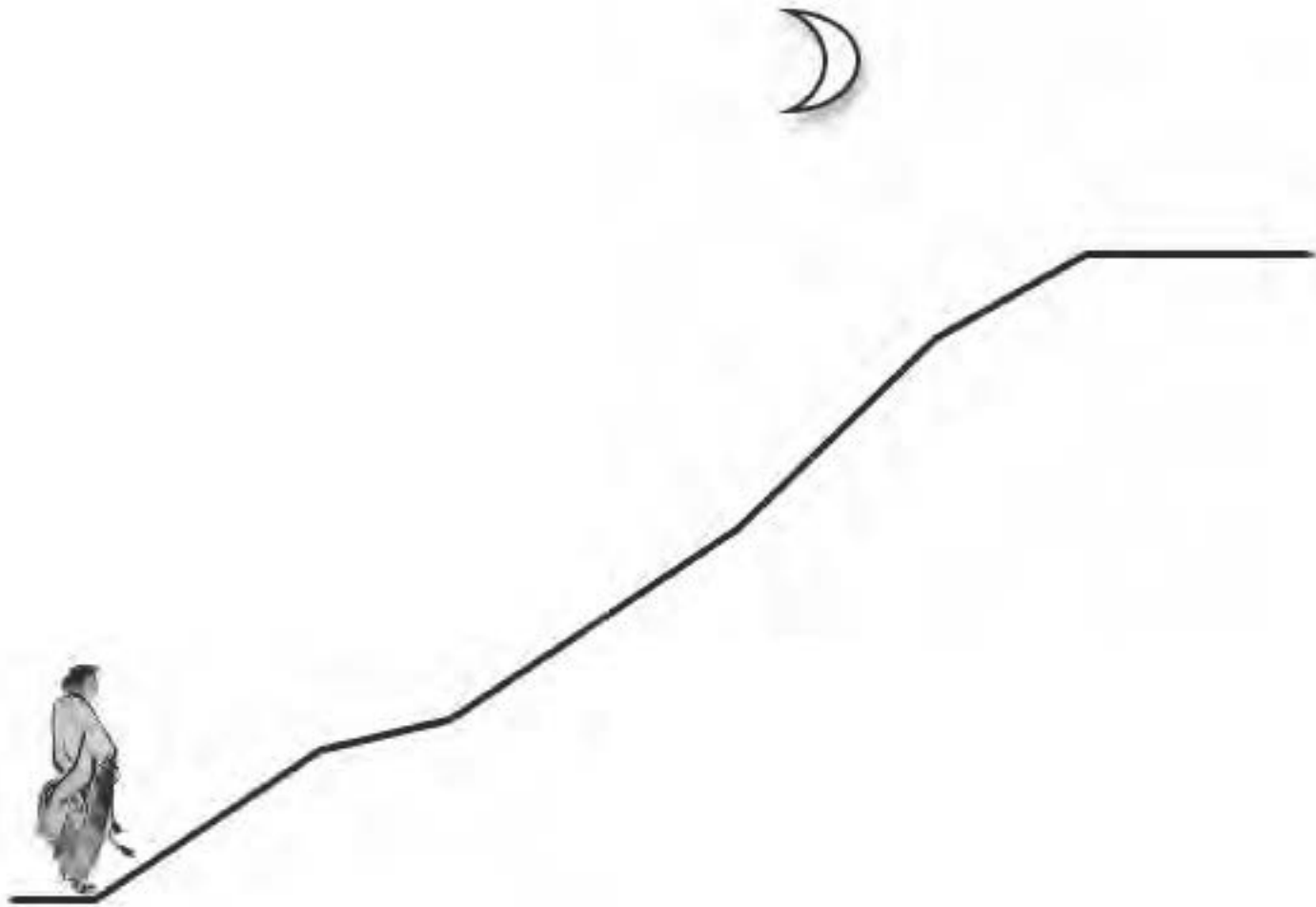


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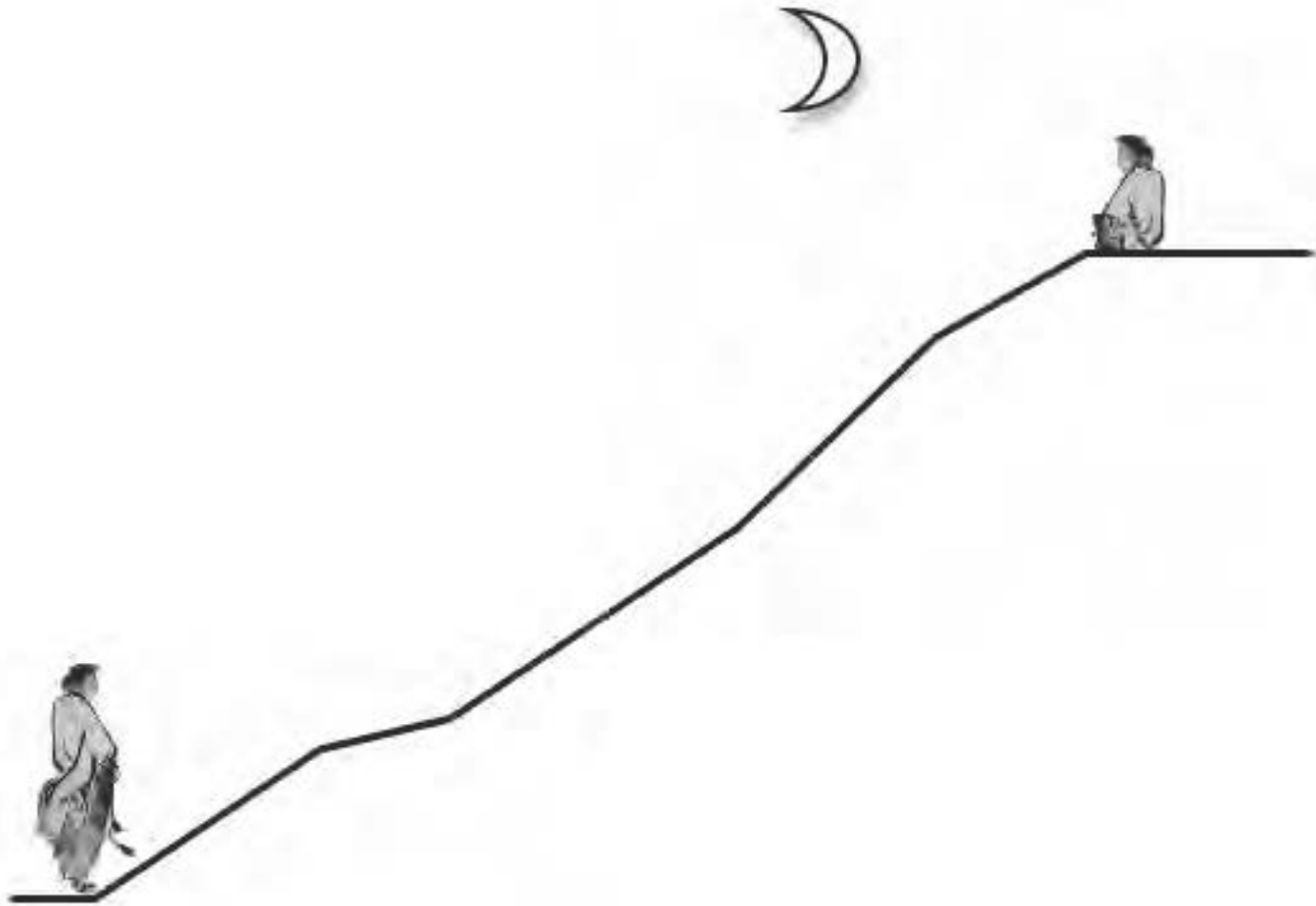
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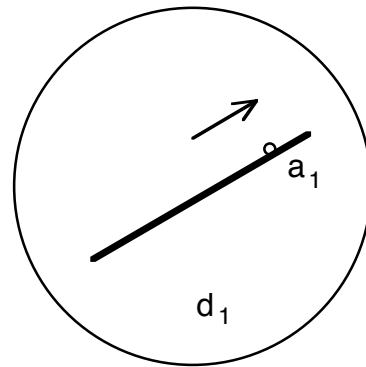
The riddle of the Buddhist Monk



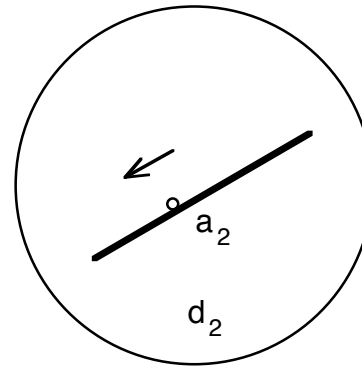
The riddle of the Buddhist Monk



Input spaces

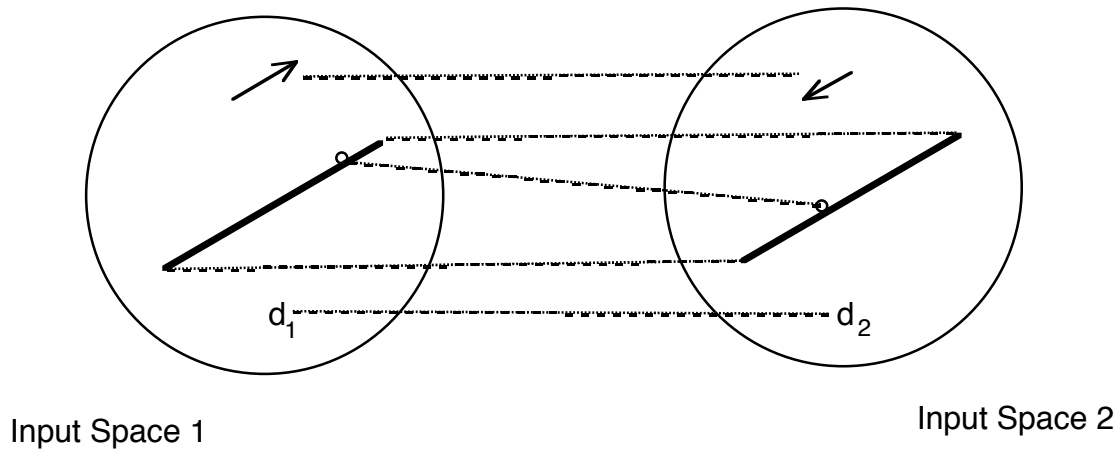


Input Space 1

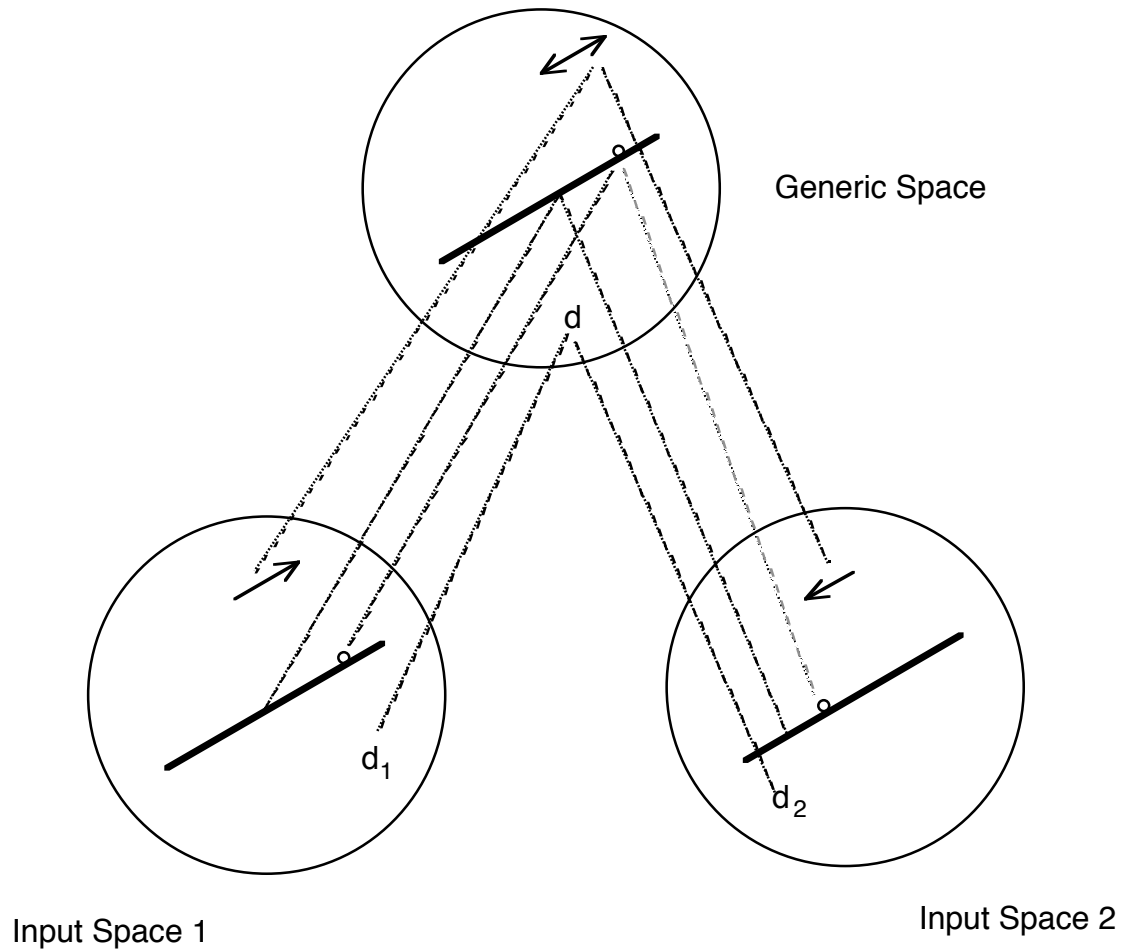


Input Space 2

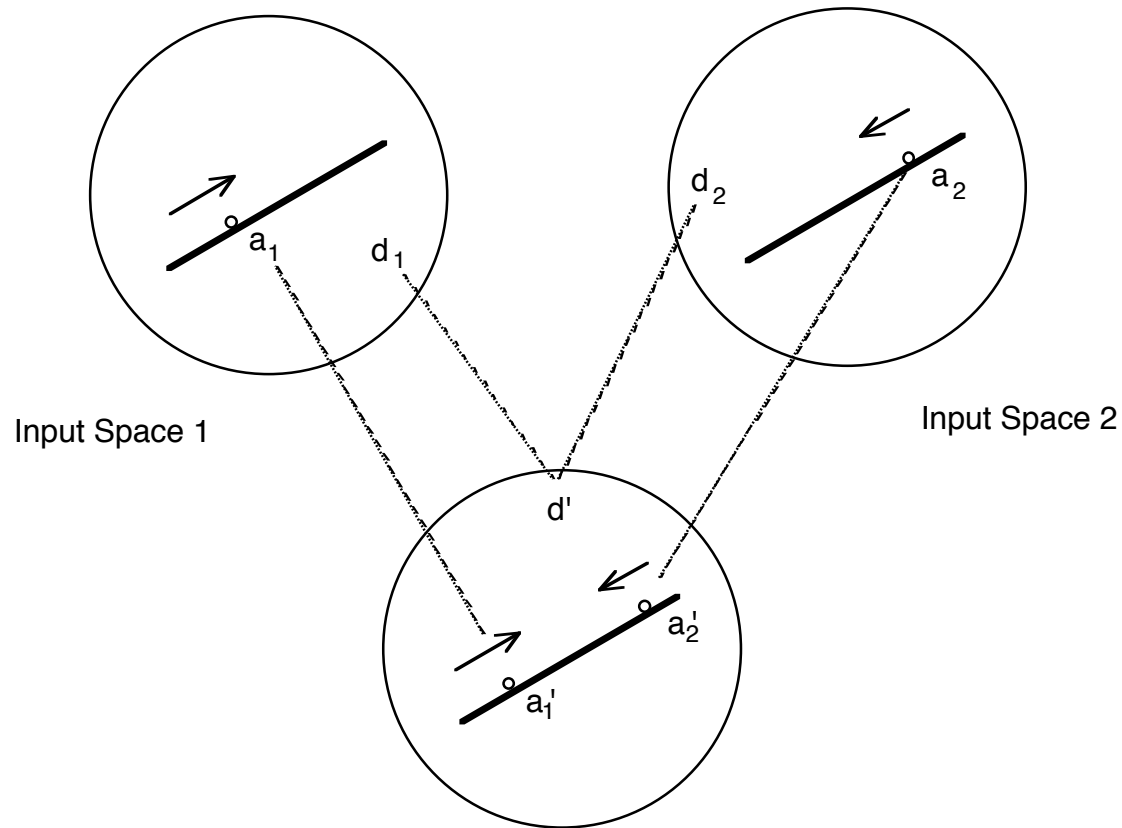
Cross-space mapping



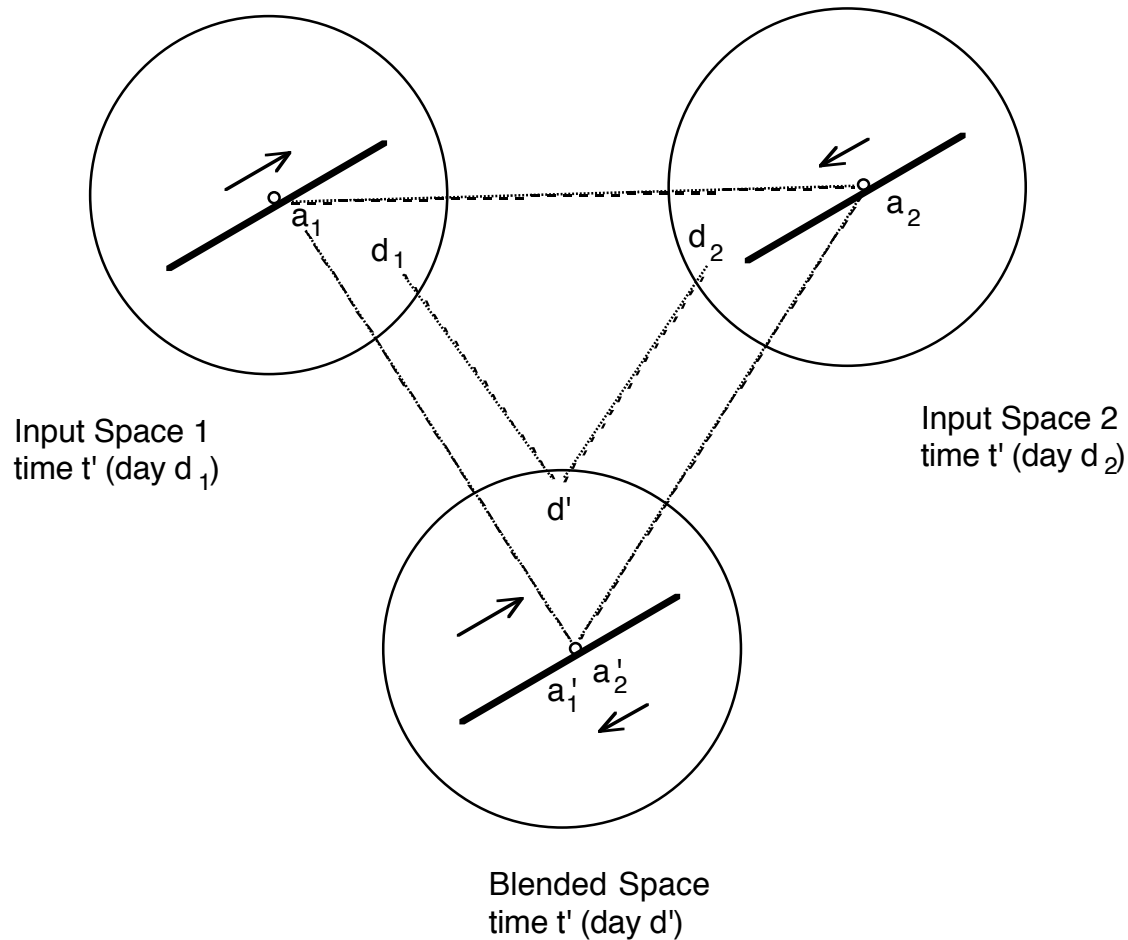
Generic space



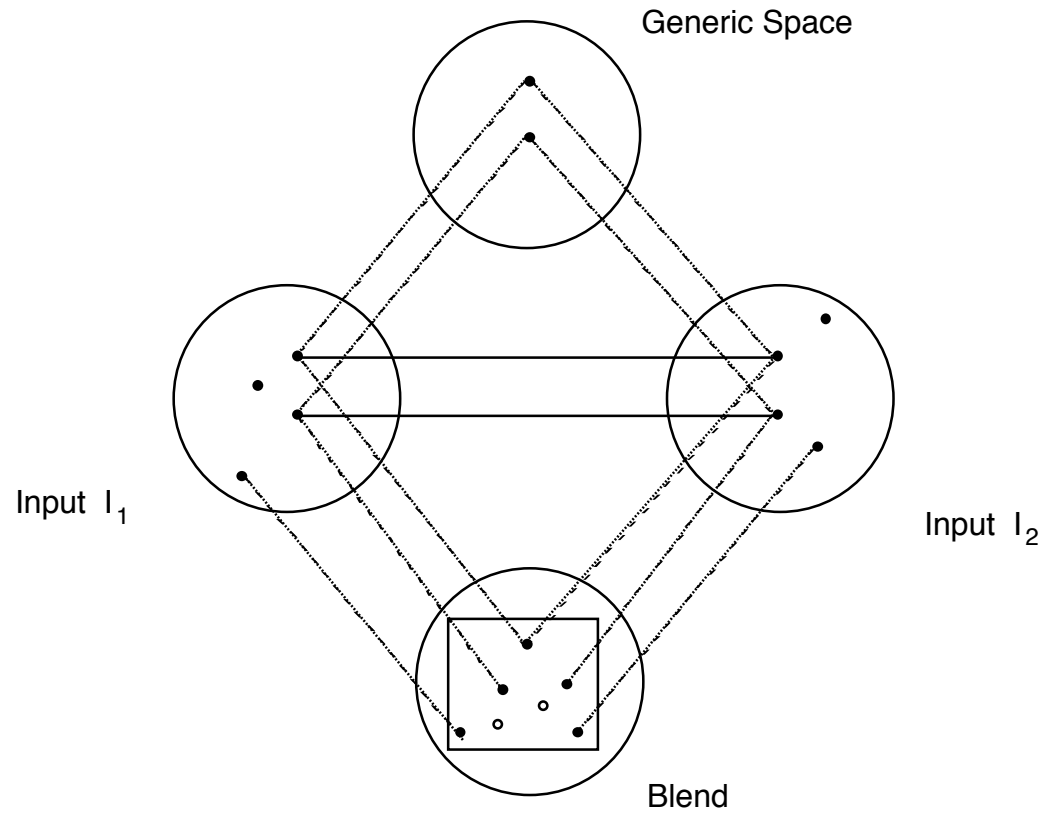
Projection to the Blended Space



Emergent Meaning in the Blended Space



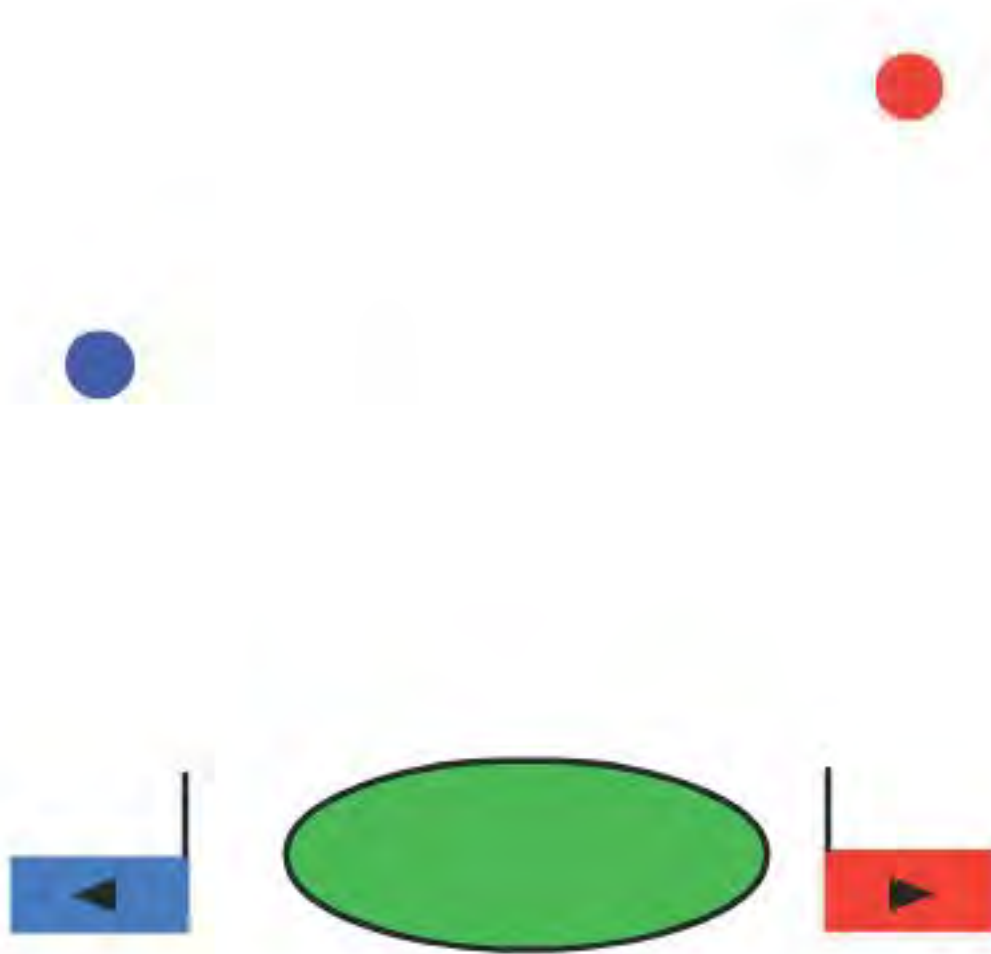
A typical network



Blending Box Experiments

Selective Projection
Emergent Structure

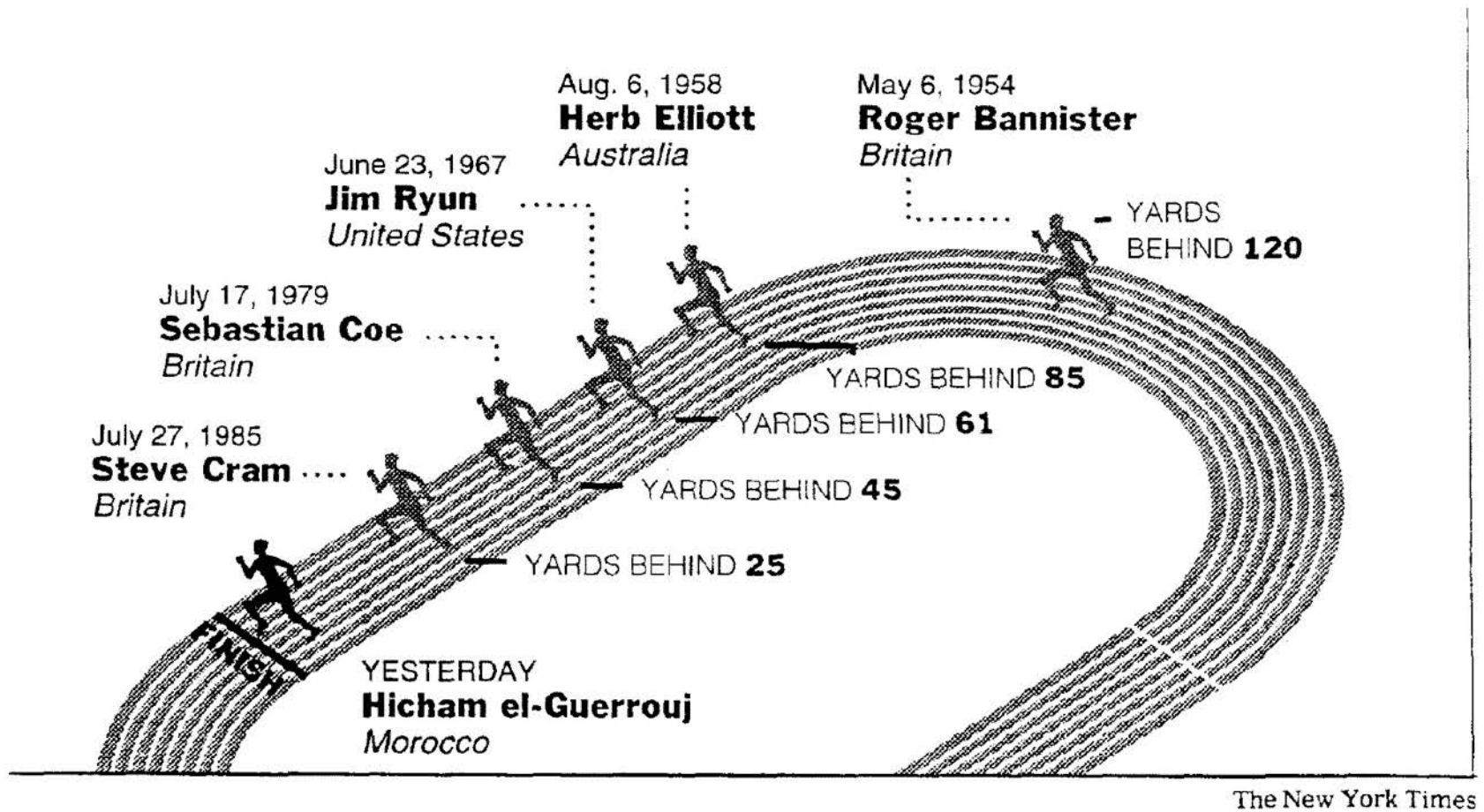
Blending Box Experiments



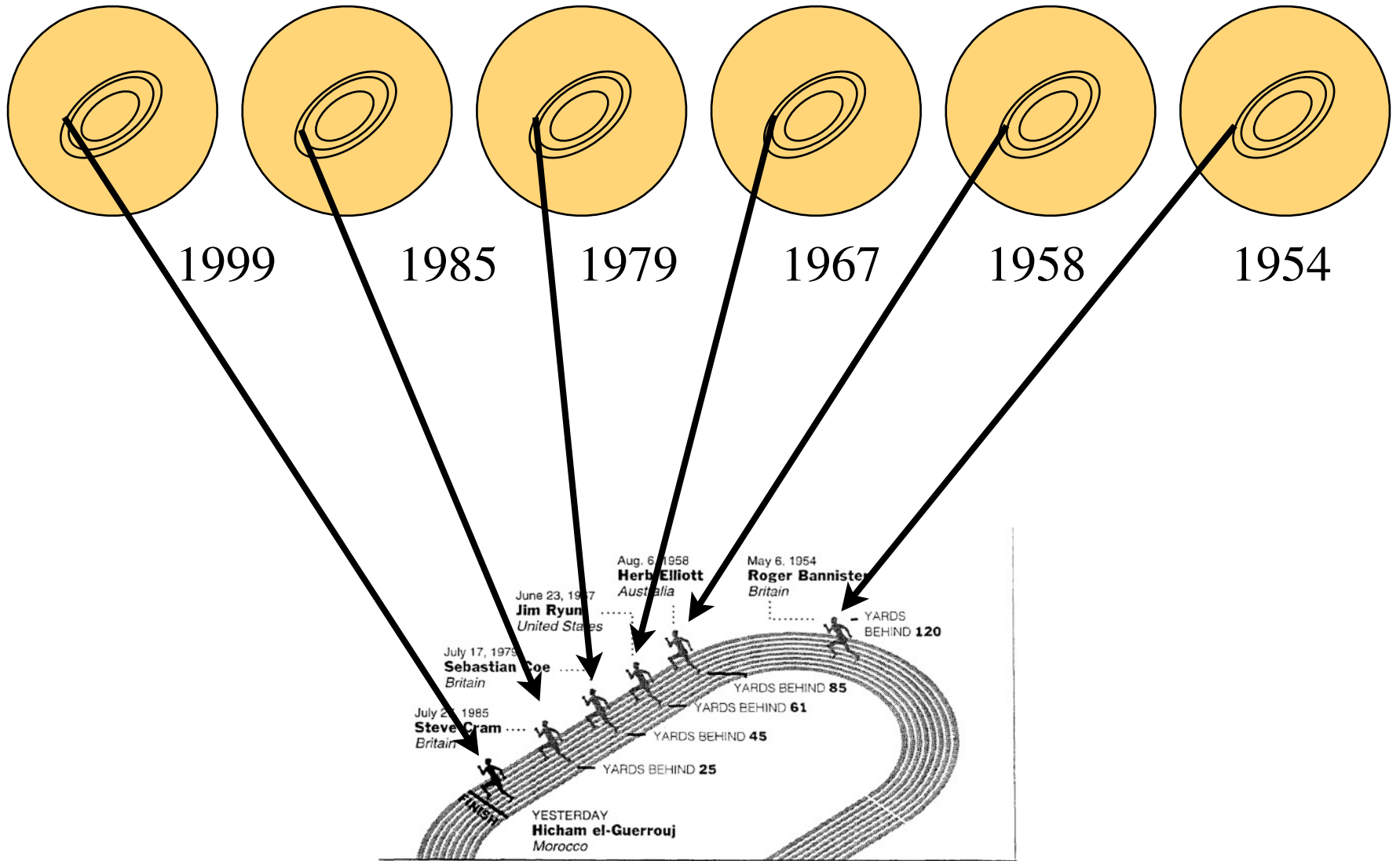
Blending Box Experiments

Selective Projection
Emergent Structure

Mirror Network: Fictive Interaction



World Record in the Mile

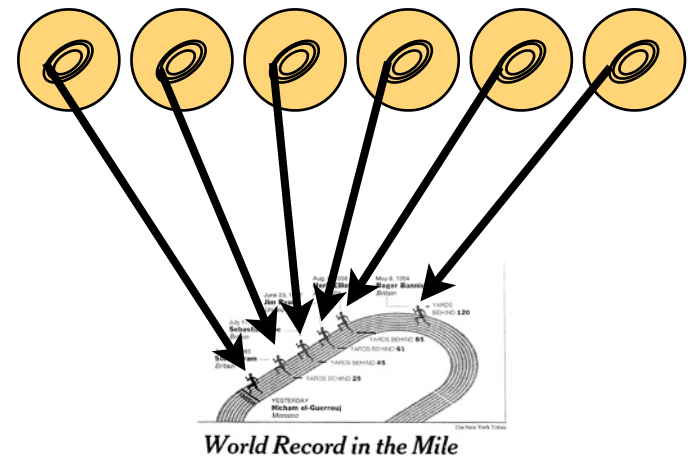


World Record in the Mile








Linguistic constructions are made available by network projections

“Hicham el-Gerrouj beat Roger Bannister.”

“Hichan el-Gerrouj defeated Roger Bannister by 120 yards”



Fictive Interaction

-  Abrantes, Ana Margarida. Fictive Interaction as an Instance of Theatricality in Cognition. 2009. Available at SSRN: <http://ssrn.com/abstract=1409396>
-  Pascual, Esther, E. Królak & Th.A.J.M. Janssen. In preparation. Do-it-yourself compounds: Scenarios set up through fictive interaction. *Cognitive Linguistics*.
-  Pascual, Esther. 2008. Fictive interaction blends in everyday life and courtroom settings. In A. Hougaard & T. Oakley (eds.). *Mental Spaces in Discourse and Interaction*. Amsterdam: John Benjamins.
-  Pascual, Esther 2008. Text for context, trial for trialogue: An ethnographic study of a fictive interaction blend. *Annual Review of Cognitive Linguistics* 6: 50-82.
-  Pascual, E. 2006a. Questions in legal monologues: Fictive interaction as argumentative strategy in a murder trial. *Text & Talk* 26(3): 383-402.
-  Pascual, Esther. 2006b. Fictive interaction within the sentence: A communicative type of fictivity in grammar. *Cognitive Linguistics*. Volume 17, Issue 2, Pages 245–267.
-  Pascual, Esther. 2002. Imaginary Trialogues: Conceptual Blending and Fictive Interaction in Criminal Courts. Utrecht: LOT Dissertation Series 68.

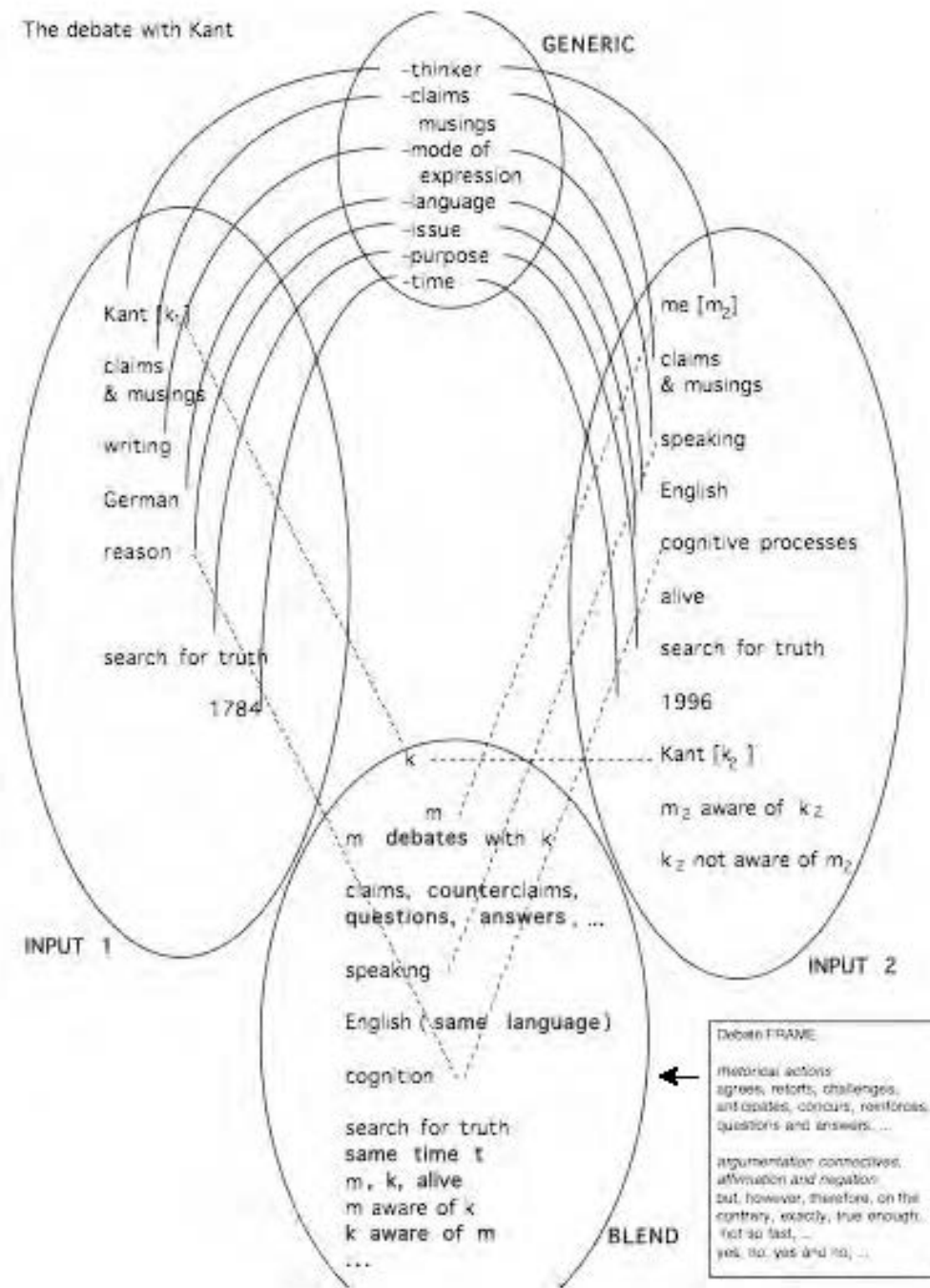
Mirror Network: Fictive Interaction

(by compression of outer-space relations and borrowing)

A Buddhist monk begins at dawn one day walking up a mountain, reaches the top at sunset, meditates at the top for several days until one dawn when he begins to walk back to the foot of the mountain, which he reaches at sunset. Make no assumptions about his starting or stopping or about his pace during the trips. Riddle: is there a place on the path which the monk occupies at the same hour of the day on the two separate journeys?

Fictive Interaction and Conversation: Debate With Kant

I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says it's innate, but I answer that that's begging the question, to which he counters, in *Critique of Pure Reason*, that only innate ideas have power. But I say to that, what about neuronal group selection? And he gives no answer.



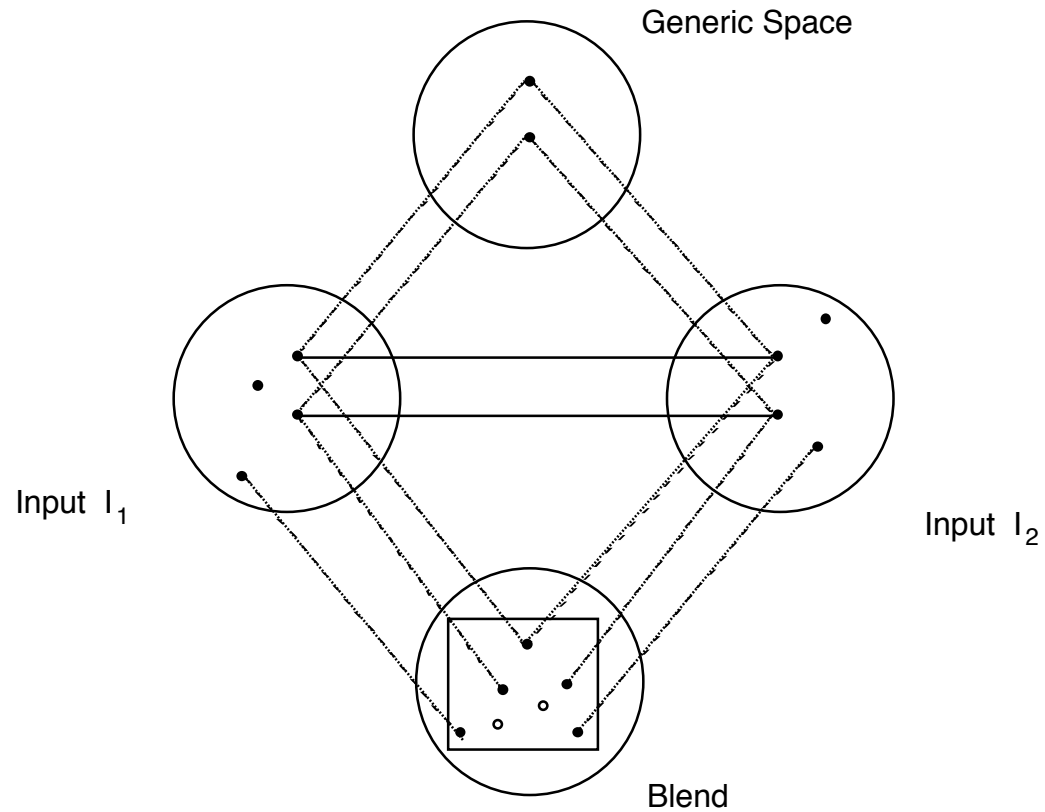
The electronic summary of the French national press *Le Petit Bouquet* routinely presents opposing editorials as a debate between the different writers, who wrote their pieces during the night, totally unaware of each other. For example, in summarizing the French diplomatic response to the taking of French hostages in Cambodia, *Le Petit Bourquet* said:

Or, rappelle José Fort, "on ne traite jamais avec des tueurs, on les combat, on les isole, on les met hors d'état de nuire, mais c'est tout le contraire qui a été fait lors de ces accords". "*Non*, la France n'a rien à se reprocher, *lui rétorque* Alain Danjou dans le *Courrier de l'Ouest*. La France a encouragé le retour d'un régime plus attentif aux droits de l'homme et la négociation engagée rendait possible une issue heureuse."

The words in italics refer directly to a debate frame, but the editorialists, Fort and Danjou, in the original editorials, were not addressing each other or using words like "Non."

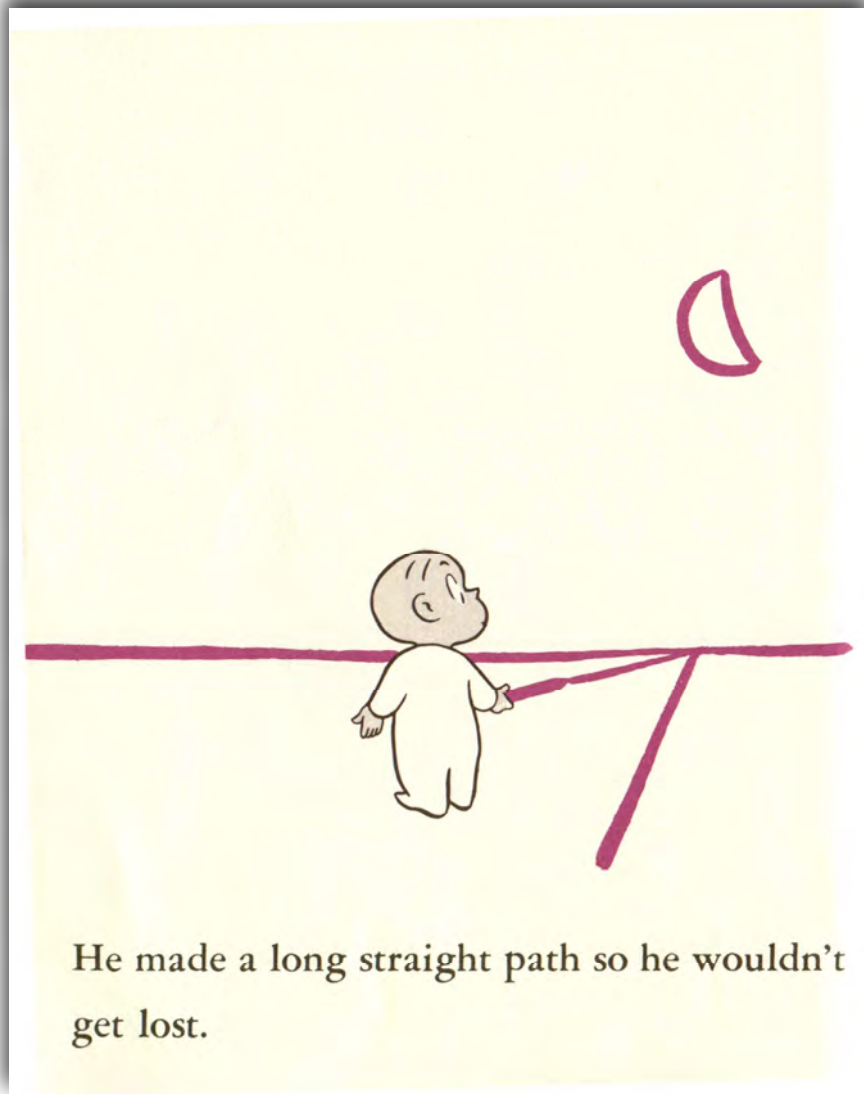
There are other cases in which the debate blend is indeed optional, but there are conventional expressions for evoking it, as in "The bean burrito is California's *answer* to France's Croque Monsieur" and "Stag's Leap Chardonnay is California's *answer* to Corton-Charlemagne." Expressions like this bring in the idea of a competition between California and France. That competition is framed as a strange debate, in which challenges and responses are food and wine.

A typical network

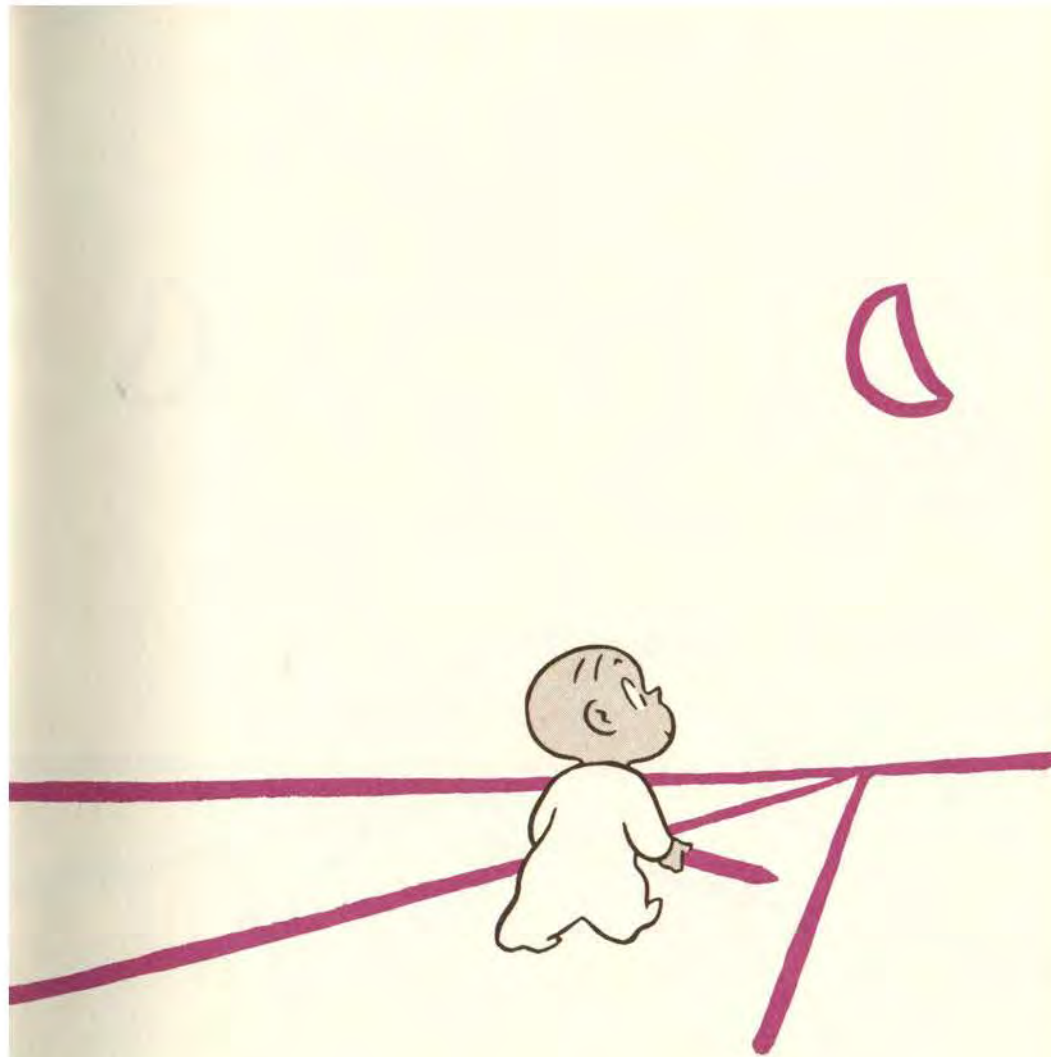


DOUBLE-SCOPE NETWORKS

A double scope network has inputs with **different (and often clashing) organizing frames** and an organizing frame for the blend that includes parts of each of those organizing frames and has emergent structure of its own. In such networks, **both organizing frames make central contributions to the blend**, and their sharp differences offer the possibility of rich clashes. **Far from blocking the construction of the network, such clashes offer challenges to the imagination and the resulting blends can turn out to be highly creative.**

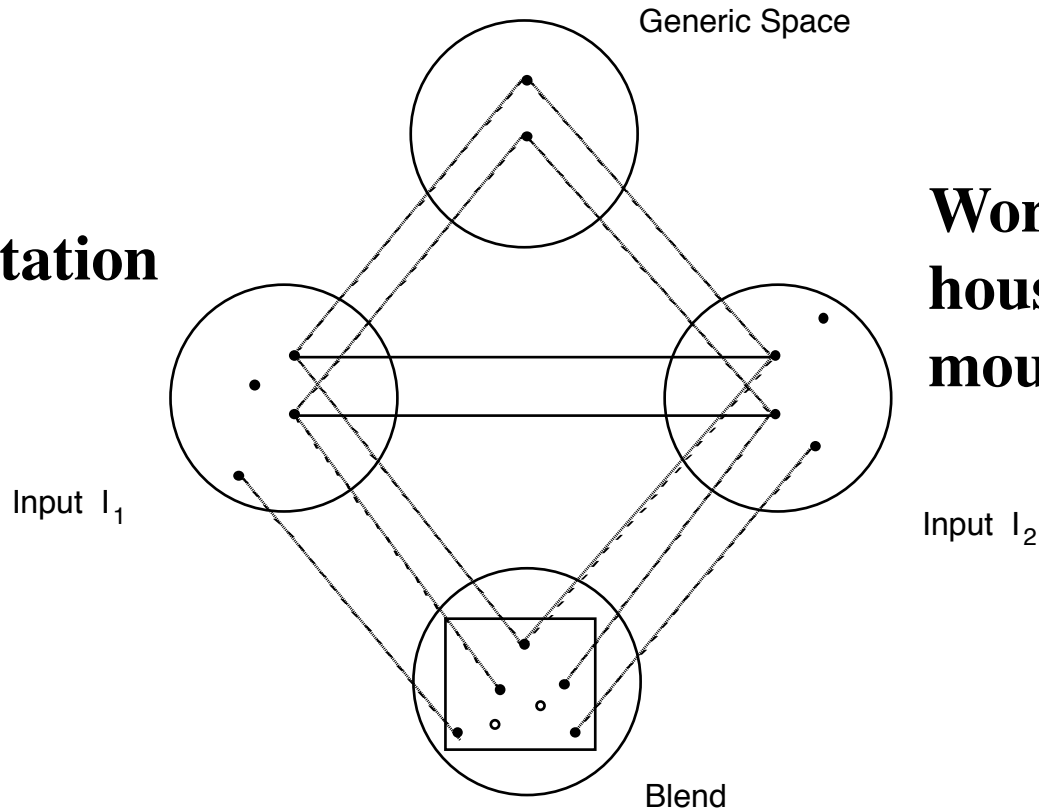


He made a long straight path so he wouldn't get lost.



And he set off on his walk, taking his big purple crayon with him.

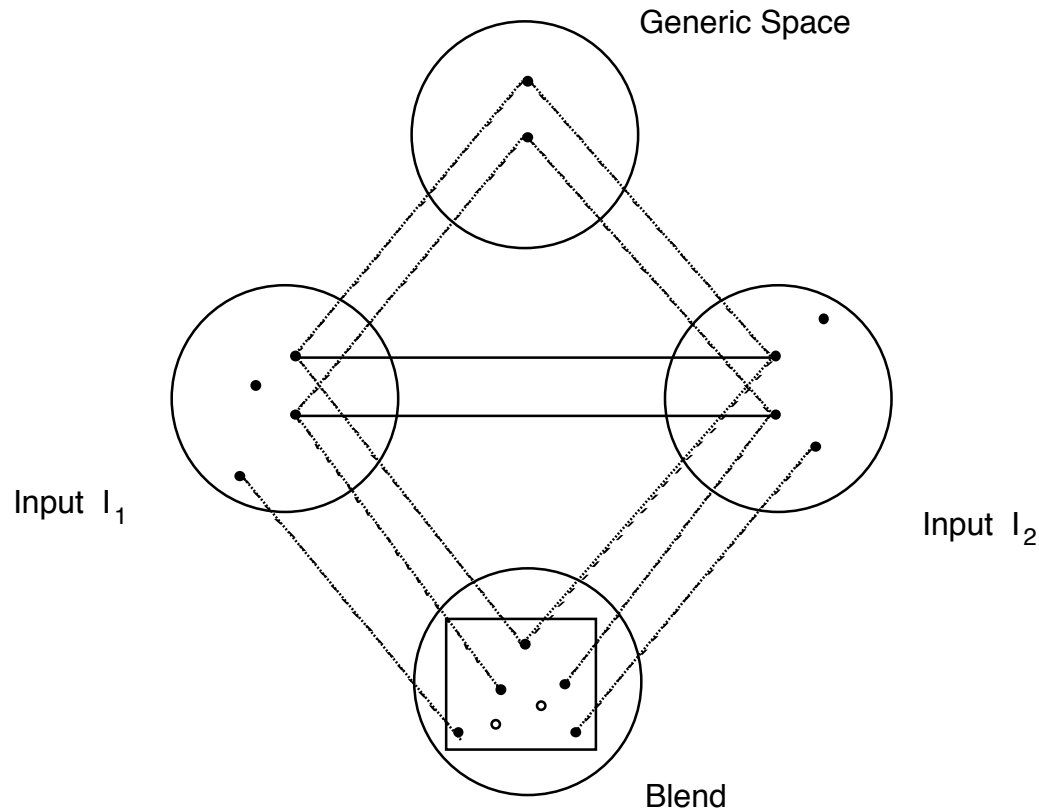
Representation



**World (moon,
house, bedroom,
mountain, etc.)**

**Harold's World
(move by drawing, etc.)**

Conceptual blending: A typical network



What?

The operations, mechanisms, principles, constraints.

Why?

The evolutionary and coevolutionary aspect.

How?

The neurobiological substrate.

OVERARCHING GOALS

Achieve human scale.

Compress what is diffuse.

Obtain global insight.

Strengthen vital relation.

Come up with a story.

Go from Many to One.

Constitutive Principles

Matching and counterpart connections.

Generic space.

Blending.

Selective projection.

Emergent meaning.

Composition.

Completion.

Elaboration.

VITAL RELATIONS: INNER-SPACE AND OUTER-SPACE

Change

Identity

Time

Space

Cause-effect

Part-whole

Representation

Role

Analogy

Disanalogy

Property

Similarity

Category

Intentionality

Uniqueness

Governing Principles for Compression

Borrowing for Compression

Scaling compression

Syncopating compression

Same-type compression

Different-type compression

Creation

Highlights compression

GOVERNING PRINCIPLES FOR COMPRESSION, 1

Borrowing for Compression When one input has an existing tight integration but the other one does not, the tight integration can be projected to the blend with the effect that the other input is compressed as it is projected to the blend.

GOVERNING PRINCIPLES FOR COMPRESSION, 2

Scaling compression Inner-space or outer-space vital relations can be scaled to more compressed versions of those vital relations in the blend.

GOVERNING PRINCIPLES FOR COMPRESSION, 3

Syncopating compression Diffuse structure in an input can be compressed as it is projected to the blend by dropping out all but a few key elements.

GOVERNING PRINCIPLES FOR COMPRESSION, 4

Same-type compression. Hierarchies of vital relations—like analogy, change, identity, or representation and identity—allow compression of a relation higher on a hierarchy into a relation of the same type lower on the hierarchy.

GOVERNING PRINCIPLES FOR COMPRESSION, 5

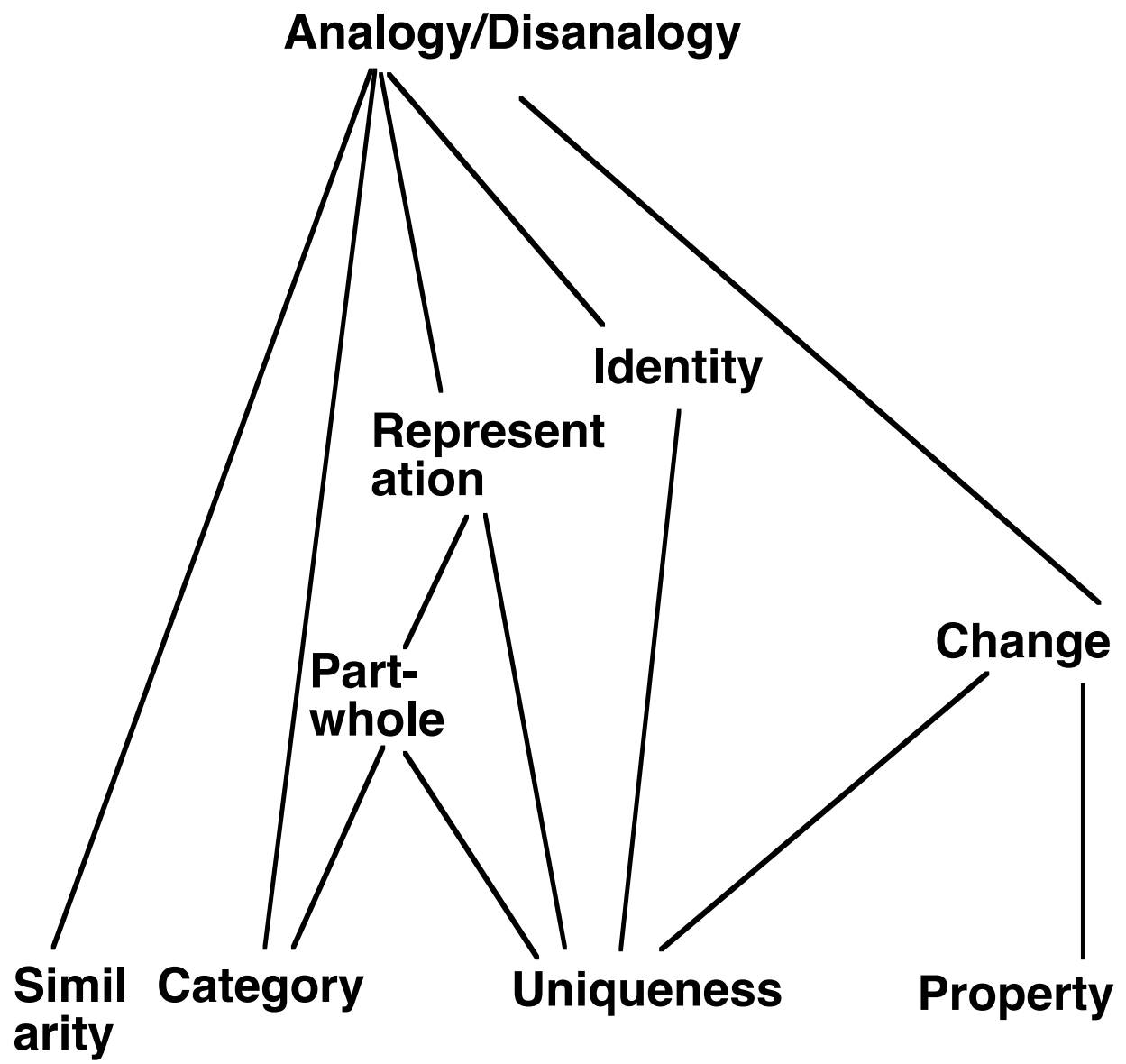
Different-type compression

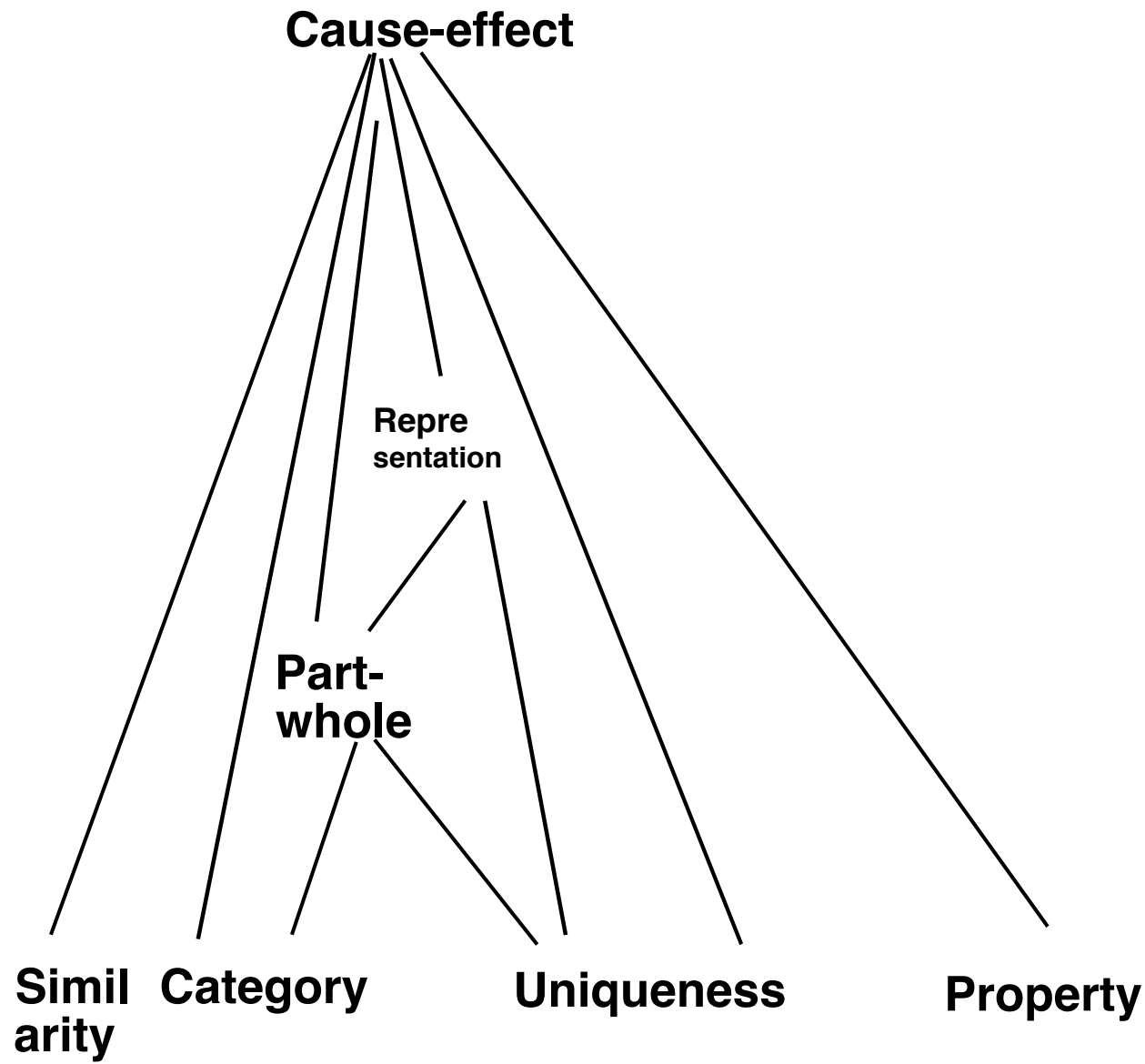
GOVERNING PRINCIPLES FOR COMPRESSION, 6

Creation Blends can sometimes be given a tighter integration by creating there a new vital relation, such as intentionality.

GOVERNING PRINCIPLES FOR COMPRESSION, 7

Highlights compression Distributed elements in an overarching Story can be compressed into a simultaneous arrangement in the blend by such instruments as compression to category and compression to property.





Other Governing Principles

Topology Principle

Pattern Completion Principle

Integration Principle

Maximization of Vital Relations Principle

Intensification of Vital Relations Principle

Web Principle

Unpacking Principle

Relevance Principle

OTHER GOVERNING PRINCIPLES

Topology Principle Other things being equal, set up the blend and the inputs so that useful topology in the inputs and their outer-space relations is reflected by inner-space relations in the blend.

OTHER GOVERNING PRINCIPLES

Pattern Completion Principle Other things being equal, complete elements in the blend by using existing integrated patterns as additional inputs. Other things being equal, use a completing frame that has relations that can be the compressed versions of the important outer-space vital relations between the inputs.

OTHER GOVERNING PRINCIPLES

Integration Principle Achieve an integrated blend.

OTHER GOVERNING PRINCIPLES

Maximization of Vital Relations Principle Other things being equal, maximize vital relations in the blend and reflect those vital relations in outer-space vital relations between the inputs.

OTHER GOVERNING PRINCIPLES

Intensification of Vital Relations Principle Other things being equal, intensify vital relations.

OTHER GOVERNING PRINCIPLES

Web Principle Other things being equal, manipulating the blend as a unit must maintain the web of appropriate connections to the input spaces easily and without additional surveillance or computation.

OTHER GOVERNING PRINCIPLES

The Unpacking Principle Other things being equal, the blend all by itself should prompt for the reconstruction of the entire network.

OTHER GOVERNING PRINCIPLES

The Relevance Principle Other things being equal, an element in the blend should have relevance, including relevance for establishing links to other spaces and for running the blend. Conversely, an outer-space relation between the inputs that is important for the purpose of the network should have a corresponding compression in the blend.

Types of Networks

Simplex

Mirror

Single-Scope

Double-Scope

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://marktturner.org>

Department of Cognitive Science



CASE WESTERN RESERVE
UNIVERSITY
EST. 1826

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

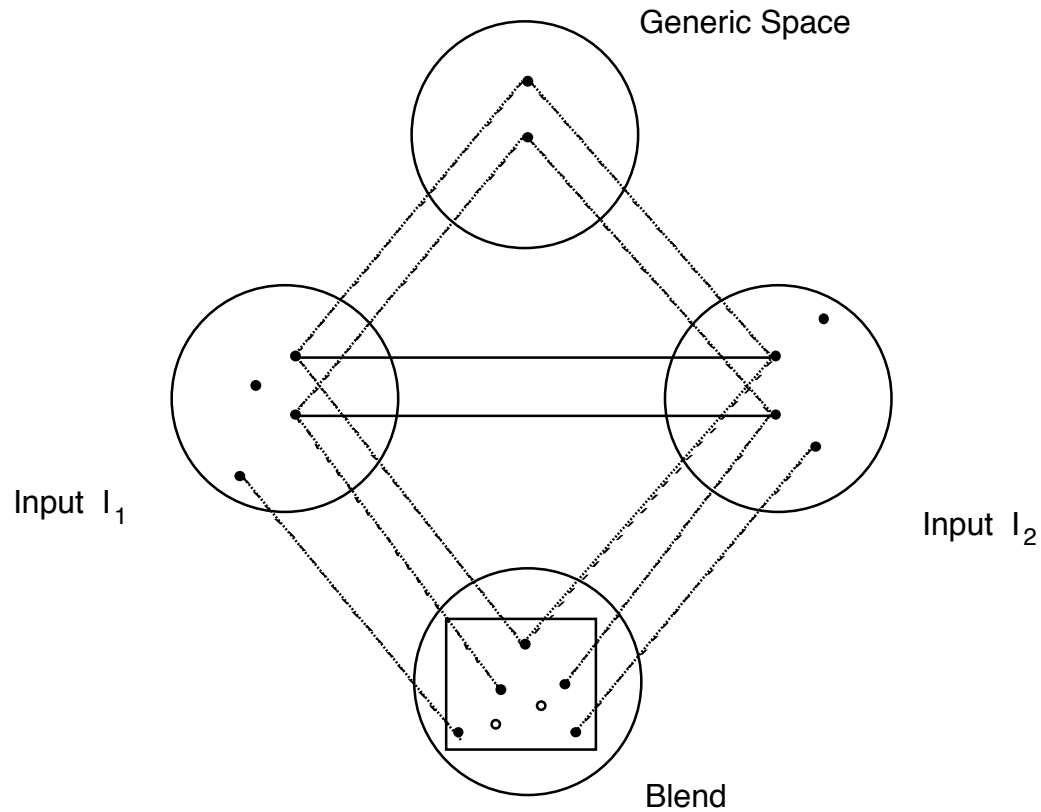
地点:北京航空航天大学外国语学院语言学研究中心

Double-Scope Cognition

Blending research was born in late 1992 and early 1993 out of our work on conceptual mapping:

- XYZ metaphors (*Reading Minds*, chapter 9) and the compositionality of mappings (*TWWT*, chapter 8).
- Analogical counterfactuals (*Mappings in Thought and Language*, chapter 4; *TWWT*, chapter 11).
- Poetic metaphors (Dante's *Inferno*, *King John*, *The Grim Reaper*)
- Chimeras (talking donkeys)

A typical network

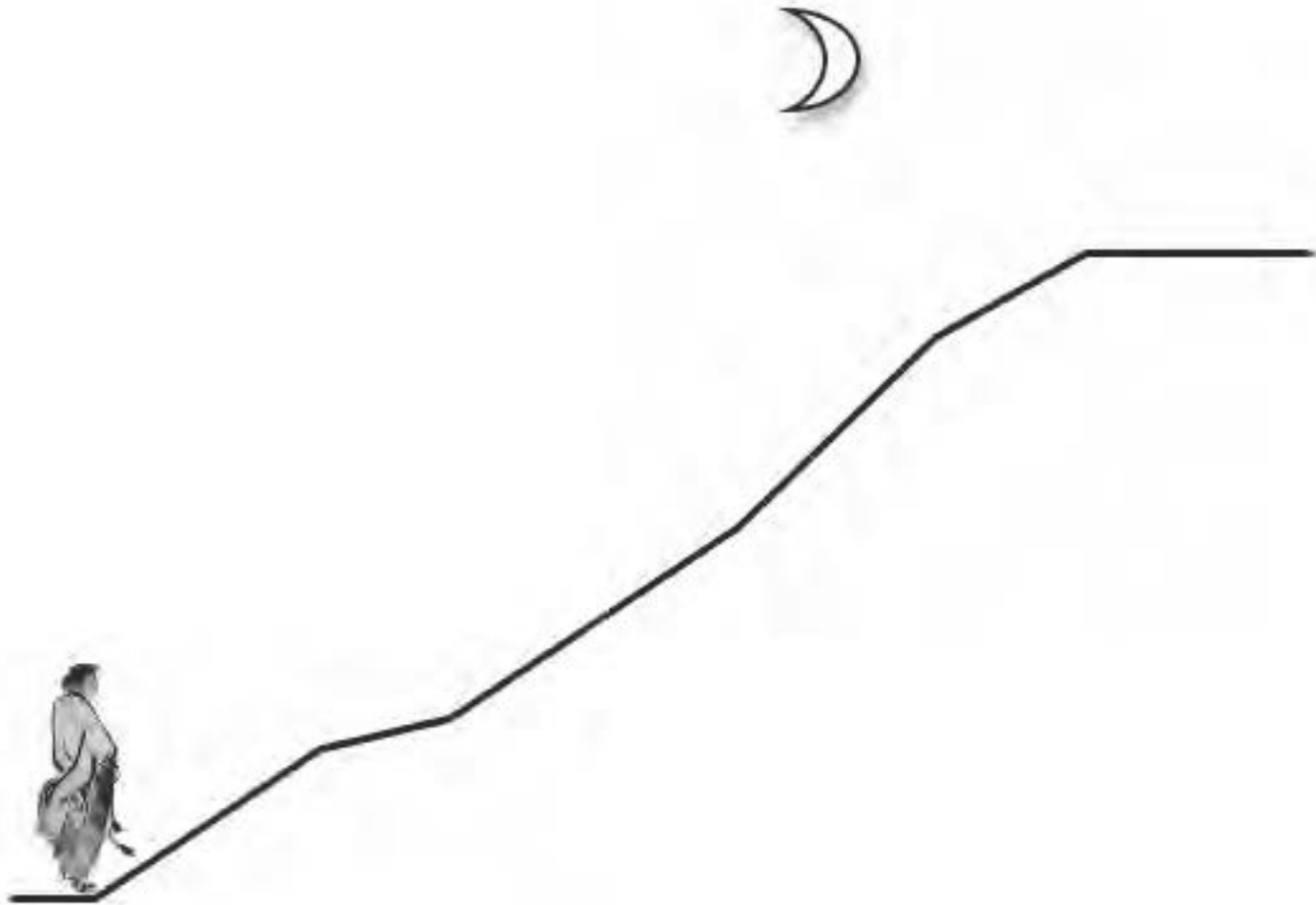


The riddle of the Buddhist Monk

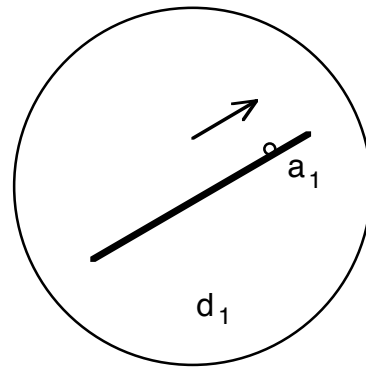
A Buddhist monk begins at dawn one day walking up a mountain, reaches the top at sunset, meditates at the top overnight until, at dawn, he begins to walk back to the foot of the mountain, which he reaches at sunset. Make no assumptions about his starting or stopping or about his pace during the trips.

Riddle: is there a place on the path which the monk occupies at the same hour of the day on the two separate journeys?

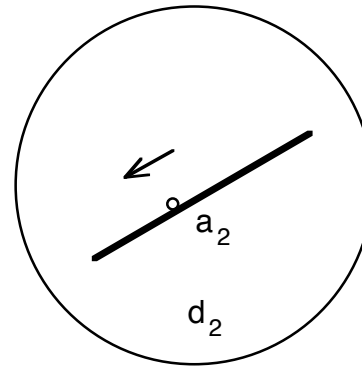
The riddle of the Buddhist Monk



Input spaces

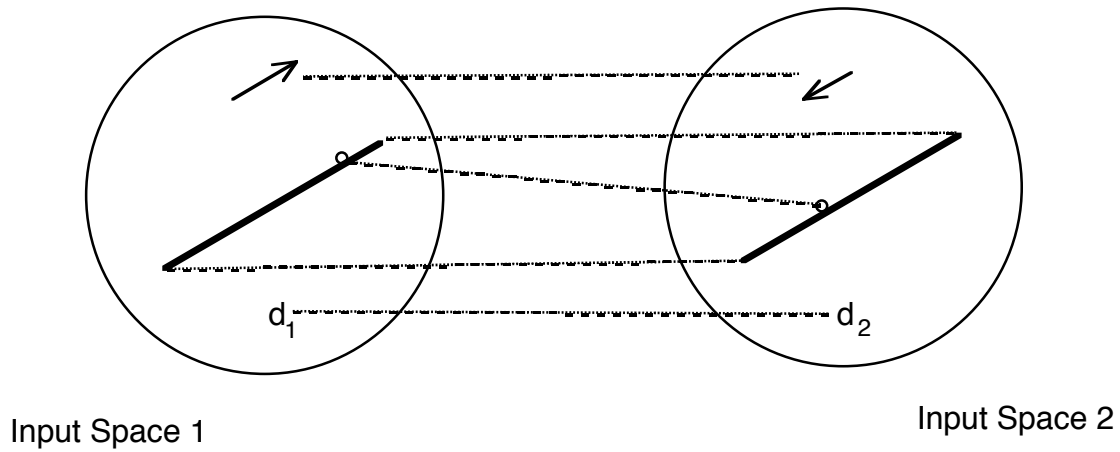


Input Space 1

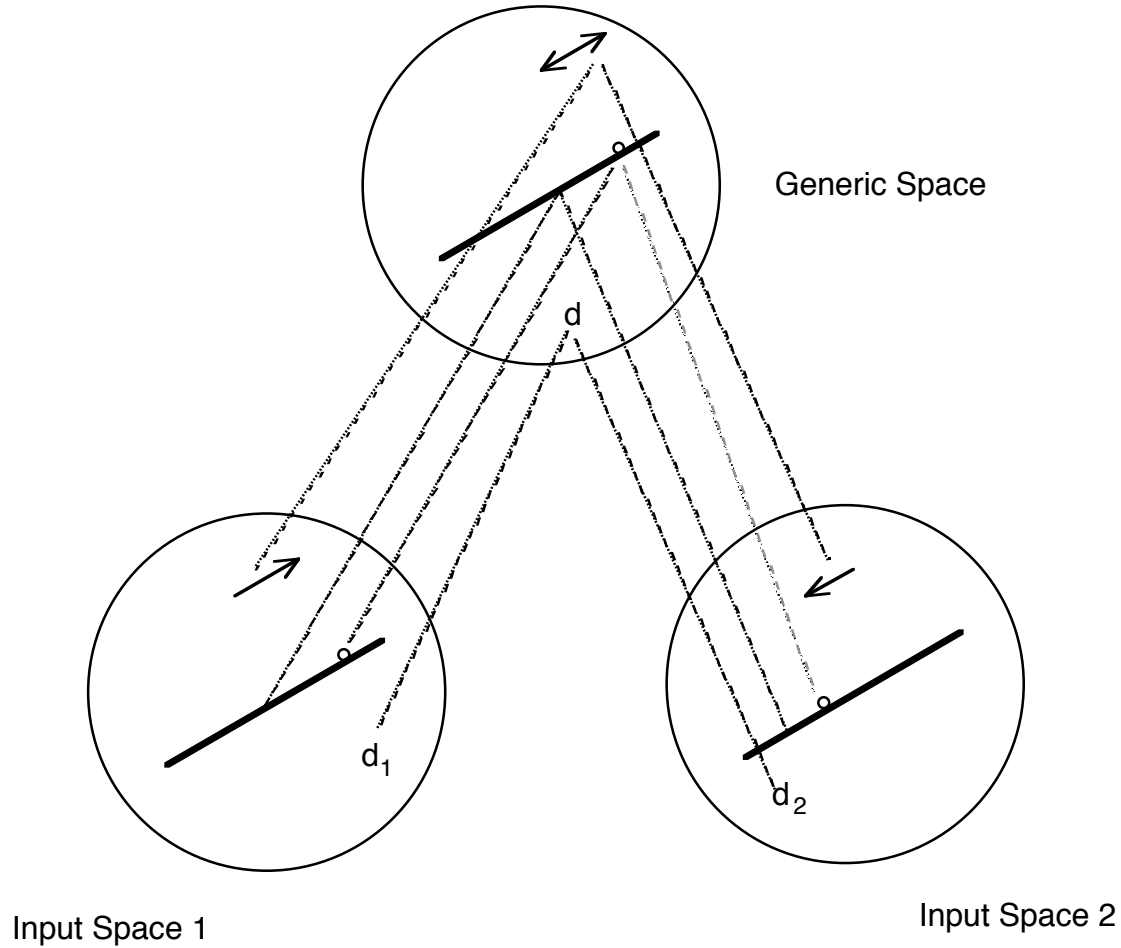


Input Space 2

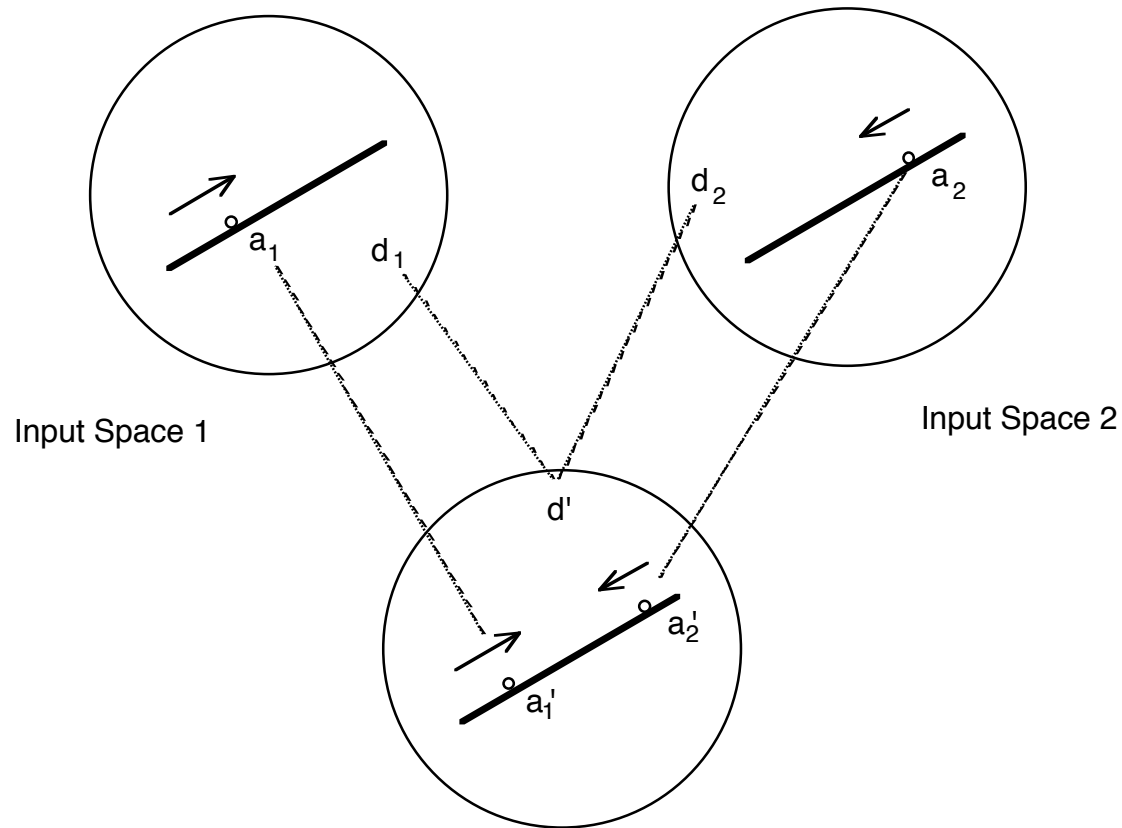
Cross-space mapping



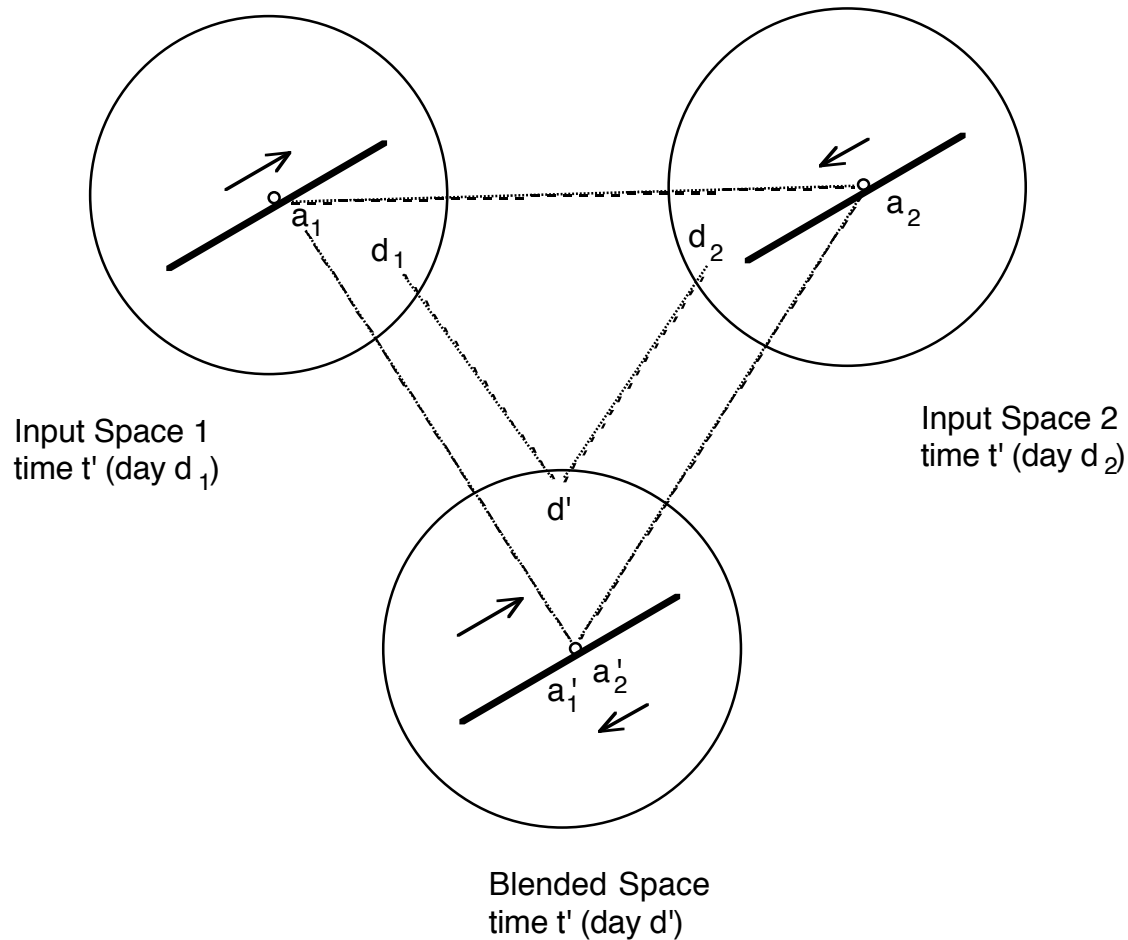
Generic space



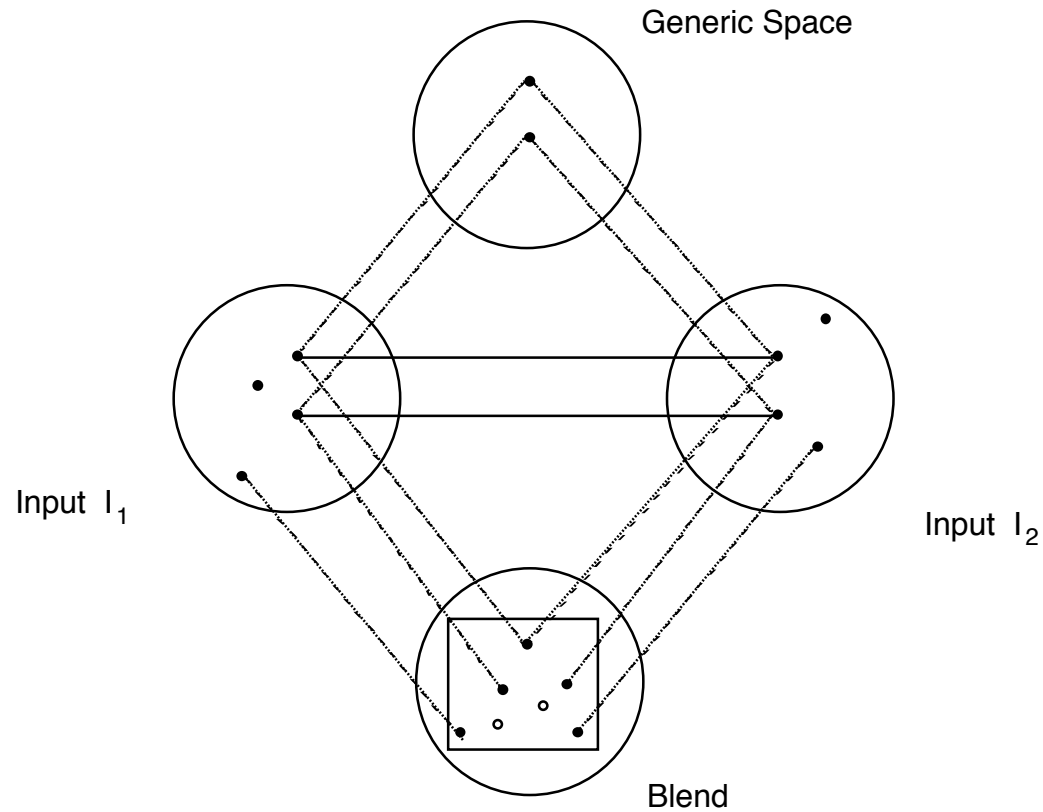
Projection to the Blended Space



Emergent Meaning in the Blended Space



A typical network



Types of Networks

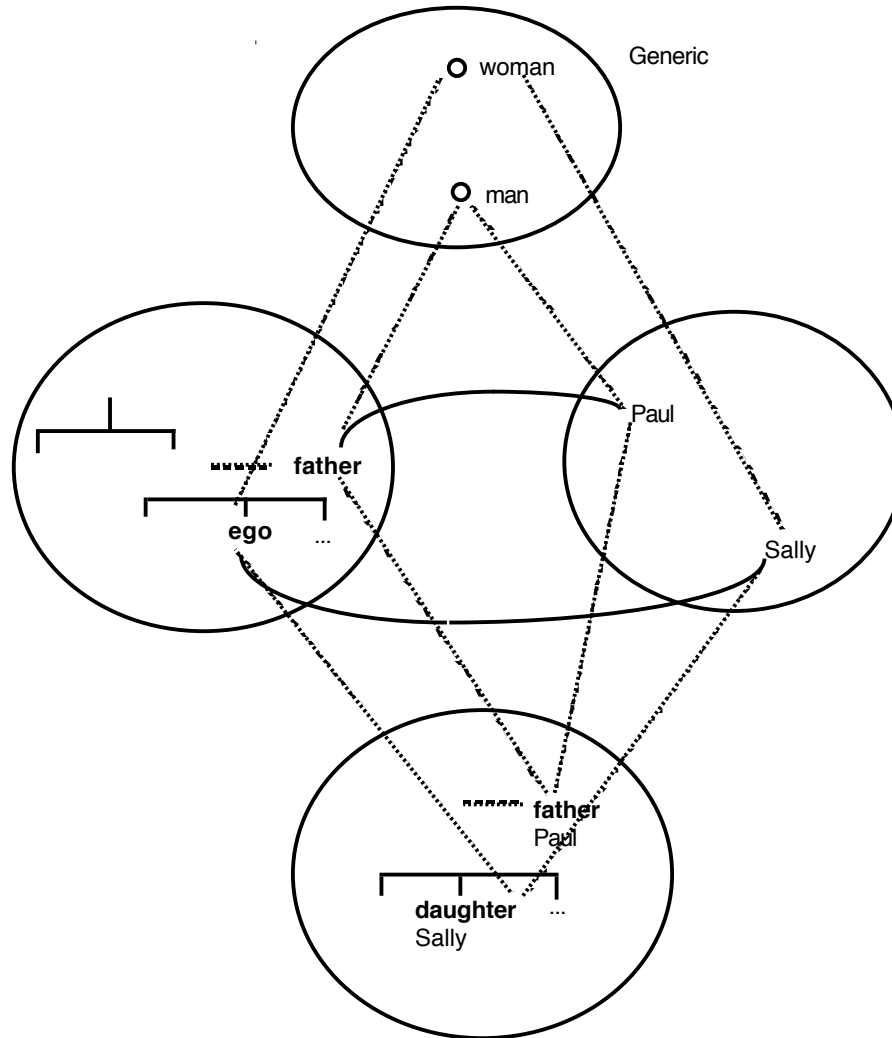
Simplex

Mirror

Single-Scope

Double-Scope

Simplex blend



Zeus was the father of Sarpedon. From Mount Olympus, he watched his mortal son die.

Zeus is the father of Athena. She was born out of his head, fully clad in armor.

Joseph was the father of Jesus.

The Pope is the father of all Catholics.

The Pope is the father of the Catholic church.

George Washington is the father of our country.

Newton is the father of physics.

Fear, father of cruelty. (Pound)

The Child is Father of the man. (Wordsworth)

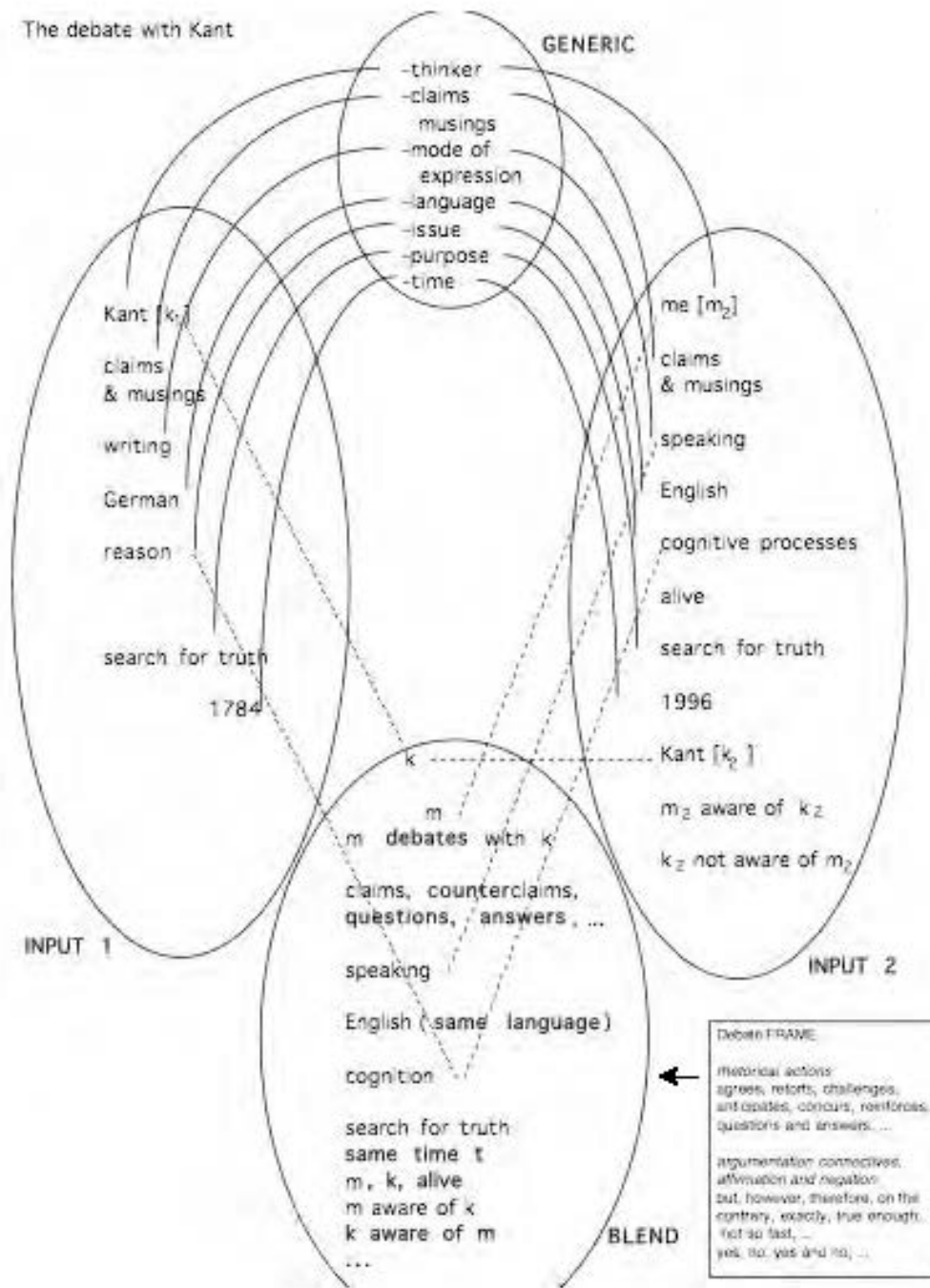
Frame-compatible Network

One way to have two framed inputs with no clash in the frames is to make those two frames identical, as in Mirror Networks. Another way is to frame anew an already-framed space without displacing the original frame. If we have frames for bicycling, or jumping frogs, or what snails do, we can blend those spaces with the frame of *sports event*, to get, for example, in the blend, *fan of bicycle racing* or *fan of frog-jumping competitions* or *fan of snail racing*. In all these cases, the blend ends up being a subframe of one of the input frames, namely *sports event*.

Another way to make a frame-compatible network is to superimpose two frames. Suppose we have a mental space for a symphony orchestra that tours Europe, and we hear "The last second violinist is always the spy." Now, the last second violinist is also framed as a spy. These two frames are fully compatible. In the blend, there is a novel frame, with new roles like *second violinist spy*.

Fictive Interaction: Debate With Kant

I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says it's innate, but I answer that that's begging the question, to which he counters, in *Critique of Pure Reason*, that only innate ideas have power. But I say to that, what about neuronal group selection? And he gives no answer.



Fictive Interaction



Abrantes, Ana Margarida. Fictive Interaction as an Instance of Theatricality in Cognition. 2009. Available at SSRN: <http://ssrn.com/abstract=1409396>



Pascual, Esther, E. Królak & Th.A.J.M. Janssen. In preparation. Do-it-yourself compounds: Scenarios set up through fictive interaction. *Cognitive Linguistics*.



Pascual, Esther. 2008. Fictive interaction blends in everyday life and courtroom settings. In A. Hougaard & T. Oakley (eds.). *Mental Spaces in Discourse and Interaction*. Amsterdam: John Benjamins.



Pascual, Esther 2008. Text for context, trial for trialogue: An ethnographic study of a fictive interaction blend. *Annual Review of Cognitive Linguistics* 6: 50-82.



Pascual, E. 2006a. Questions in legal monologues: Fictive interaction as argumentative strategy in a murder trial. *Text & Talk* 26(3): 383-402.

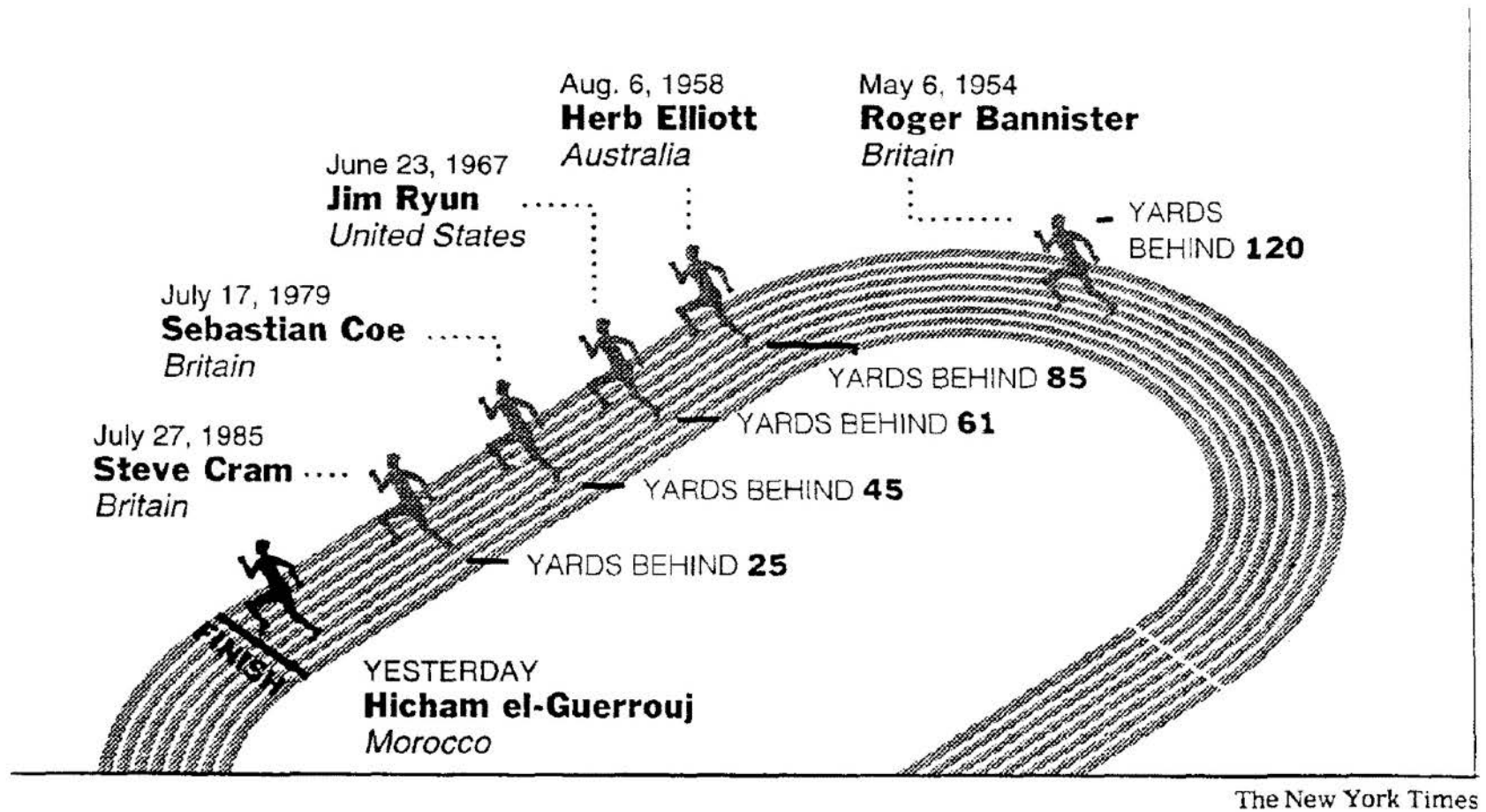


Pascual, Esther. 2006b. Fictive interaction within the sentence: A communicative type of fictivity in grammar. *Cognitive Linguistics*. Volume 17, Issue 2, Pages 245–267.

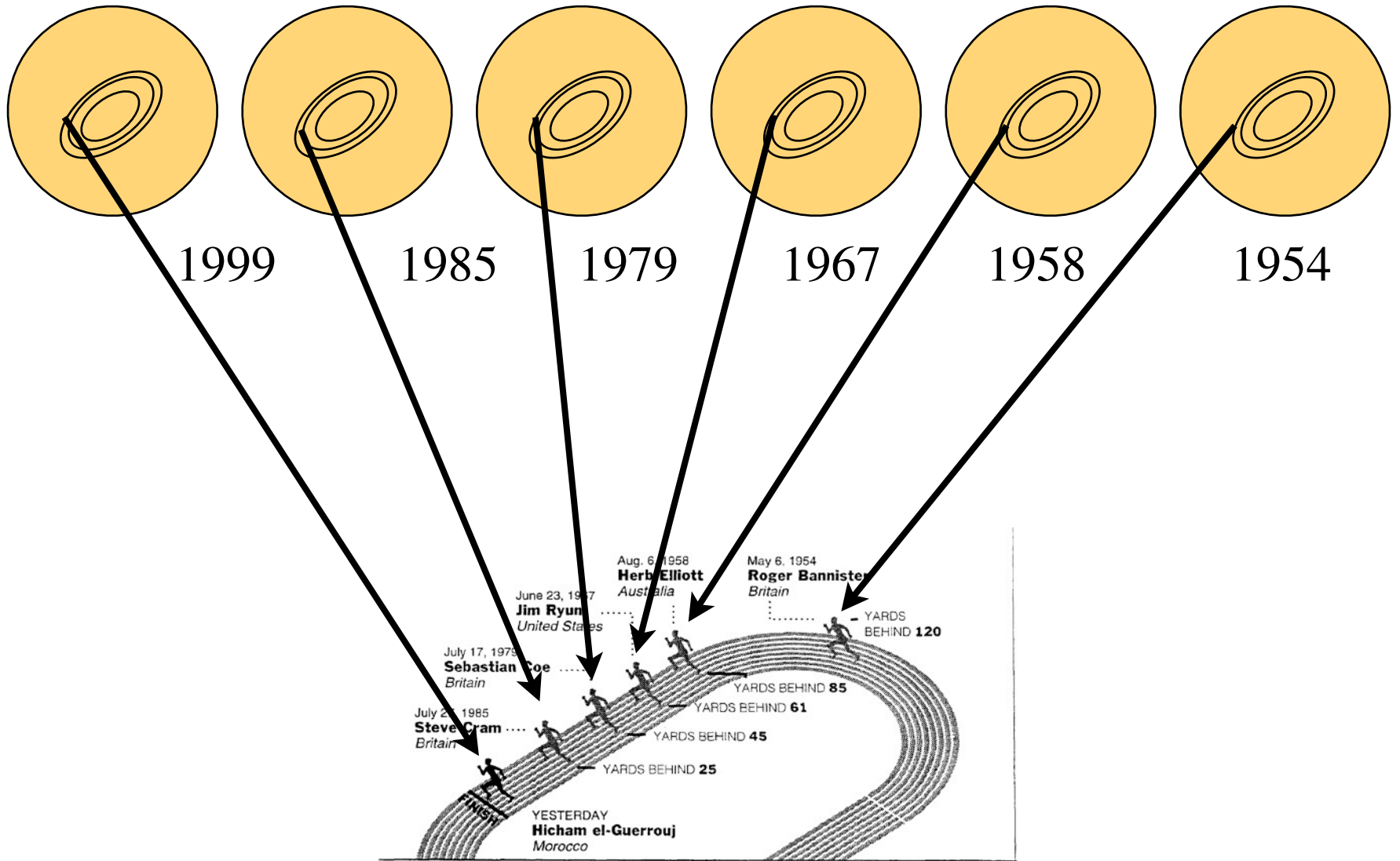


Pascual, Esther. 2002. Imaginary Trialogues: Conceptual Blending and Fictive Interaction in Criminal Courts. Utrecht: LOT Dissertation Series 68.

Mirror Network: Fictive Interaction



World Record in the Mile

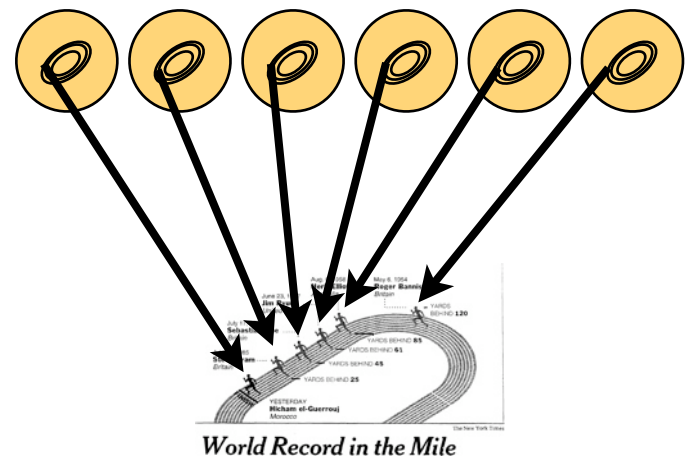


World Record in the Mile

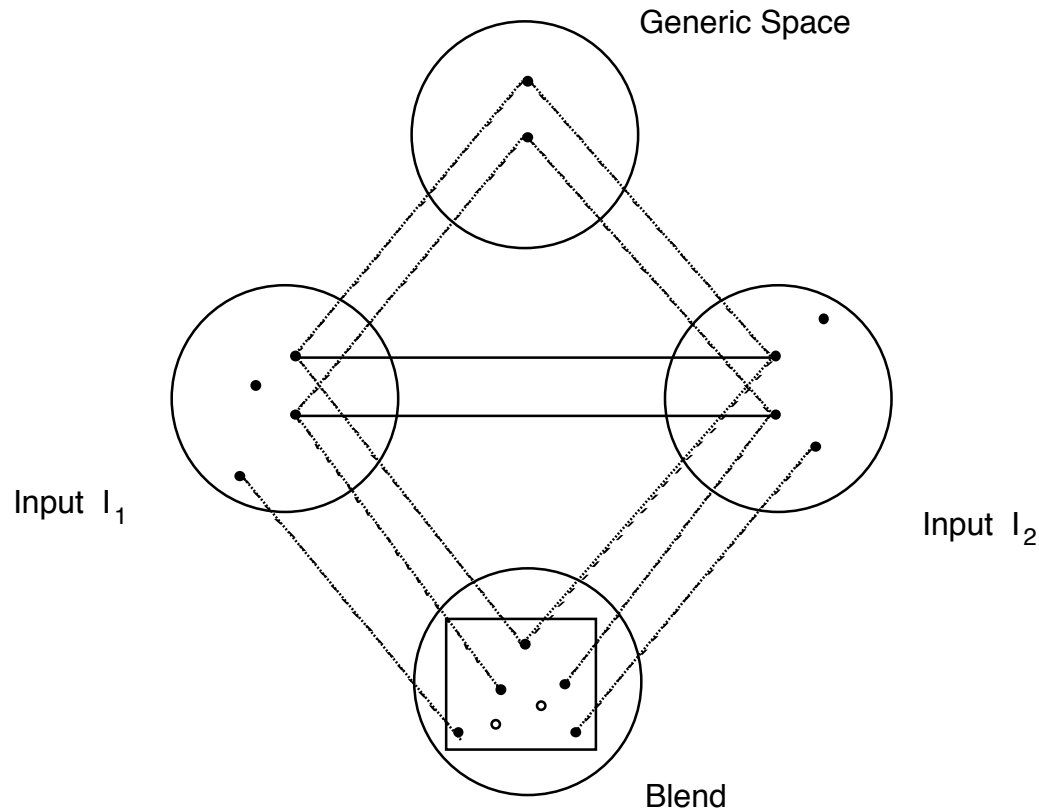
Linguistic constructions are made available by network projections

“Hicham el-Gerrouj beat Roger Bannister.”

“Hichan el-Gerrouj defeated Roger Bannister by 120 yards”

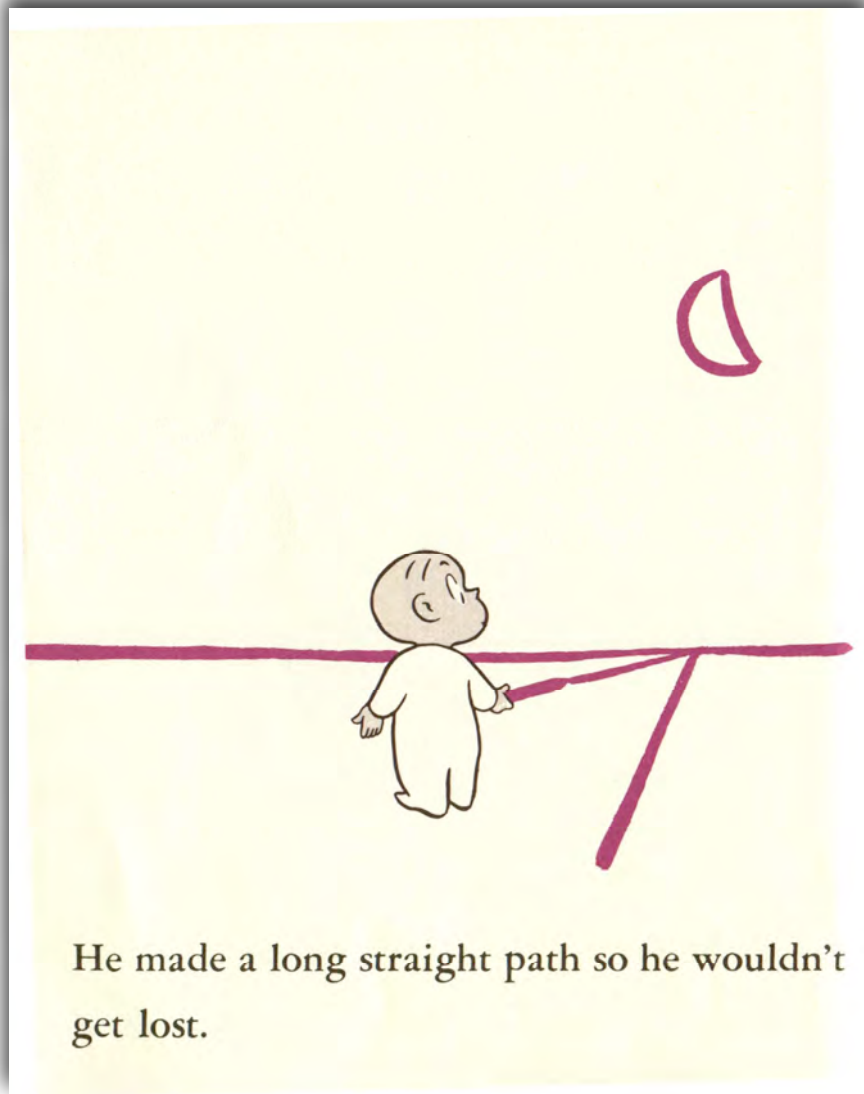


Conceptual blending: A typical network

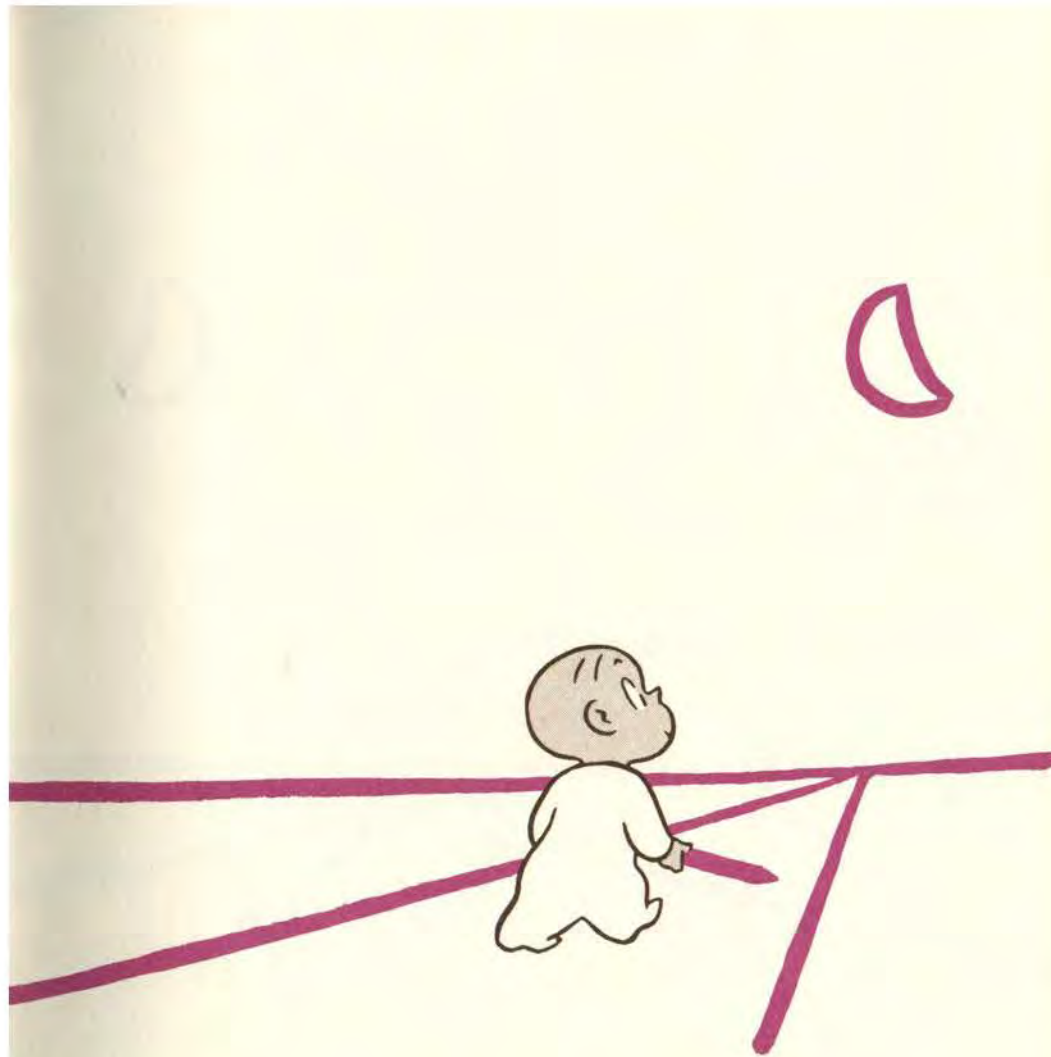


DOUBLE SCOPE NETWORKS

A double scope network has inputs with **different (and often clashing) organizing frames** and an organizing frame for the blend that includes parts of each of those organizing frames and has emergent structure of its own. In such networks, **both organizing frames make central contributions to the blend**, and their sharp differences offer the possibility of rich clashes. **Far from blocking the construction of the network, such clashes offer challenges to the imagination and the resulting blends can turn out to be highly creative.**



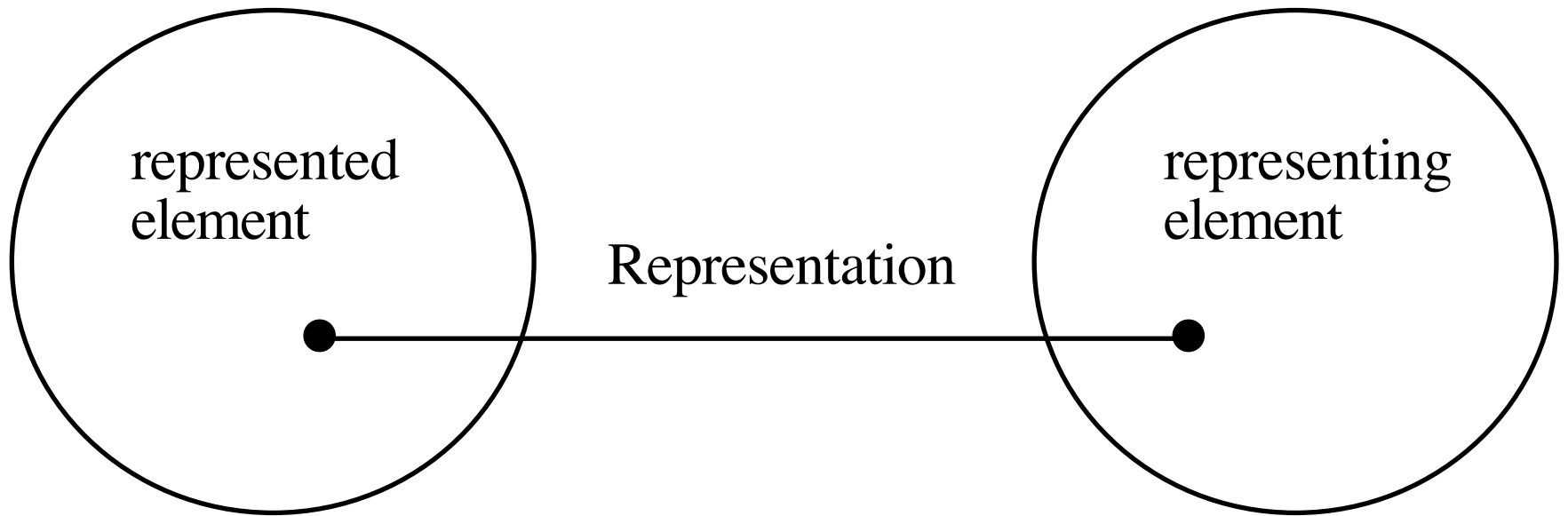
He made a long straight path so he wouldn't
get lost.

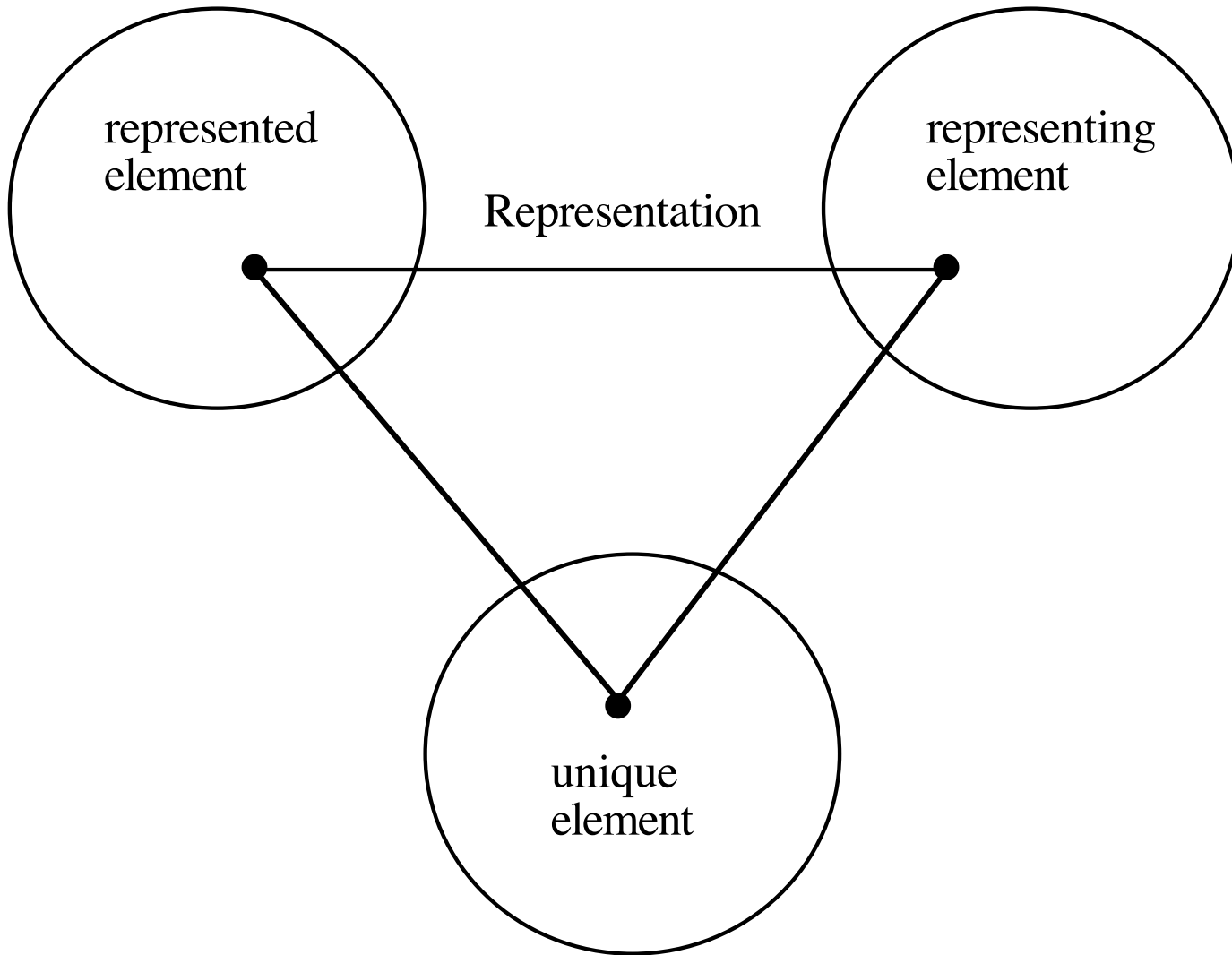


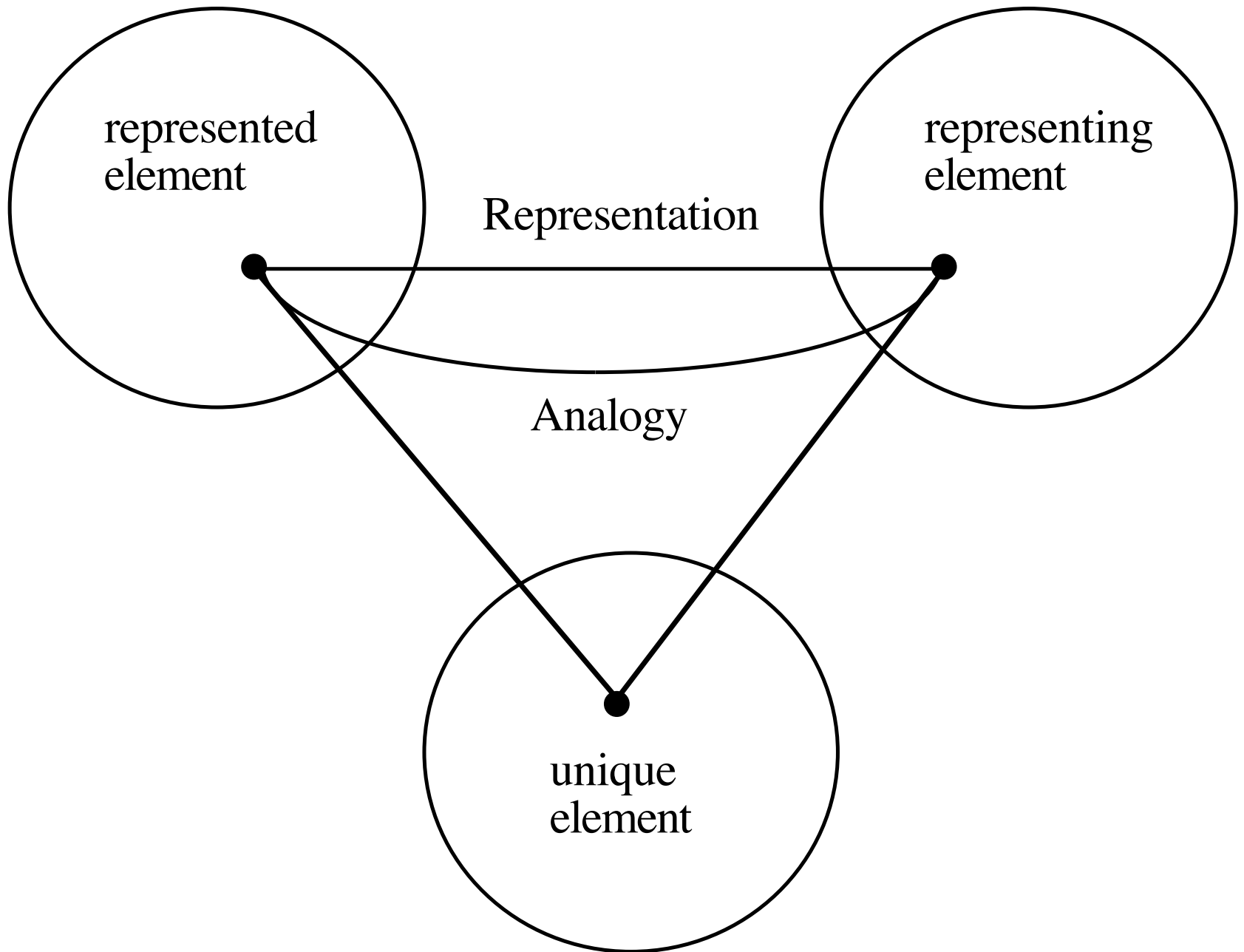
And he set off on his walk, taking his big purple crayon with him.



Tentative de l'impossible. (1928) René Magritte.







represented
element

representing
element

Representation

Analogy

unique
element

第七届中国认知语言学国际论坛



Blending is Basic



Doing Cognitive Science

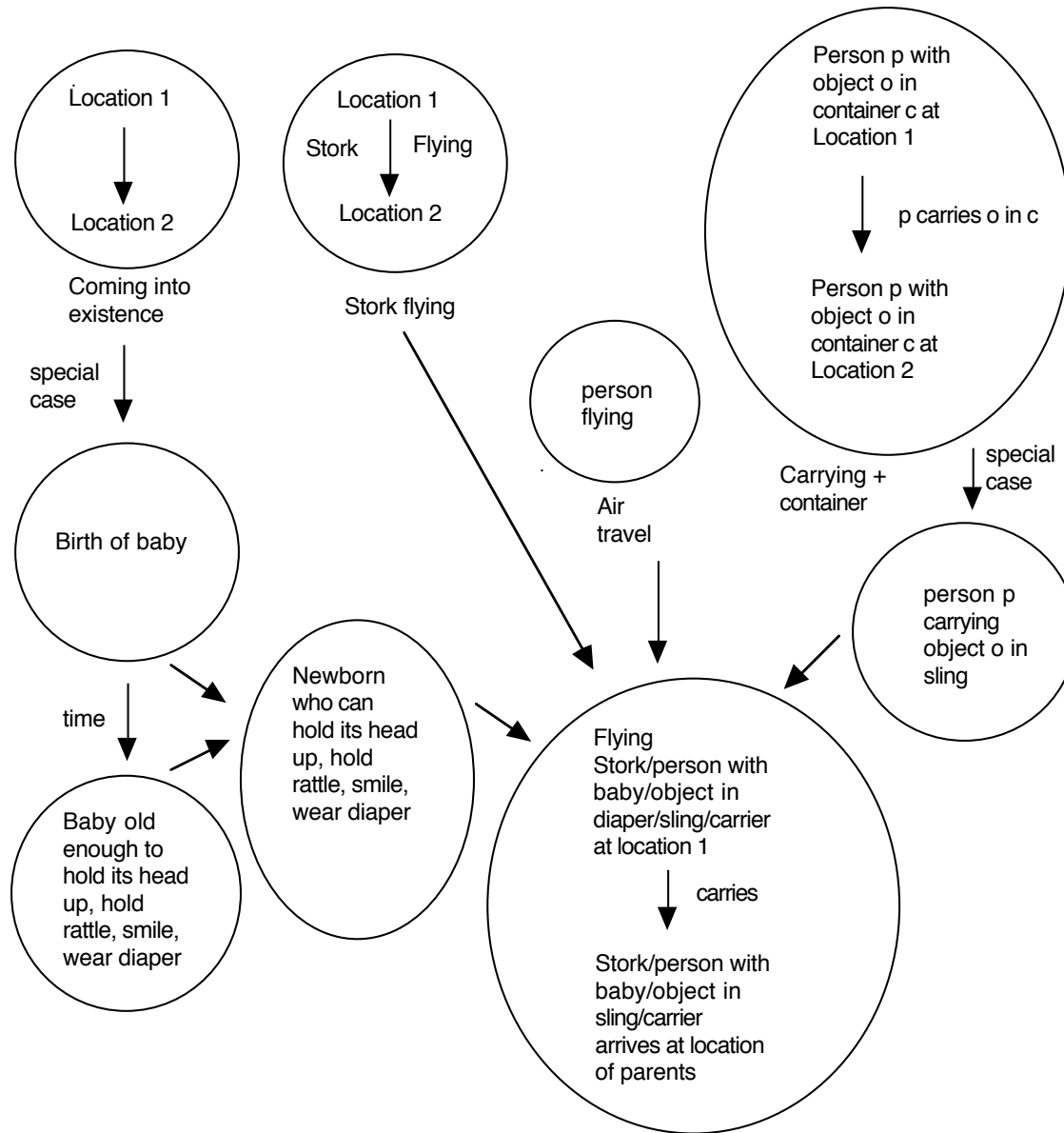


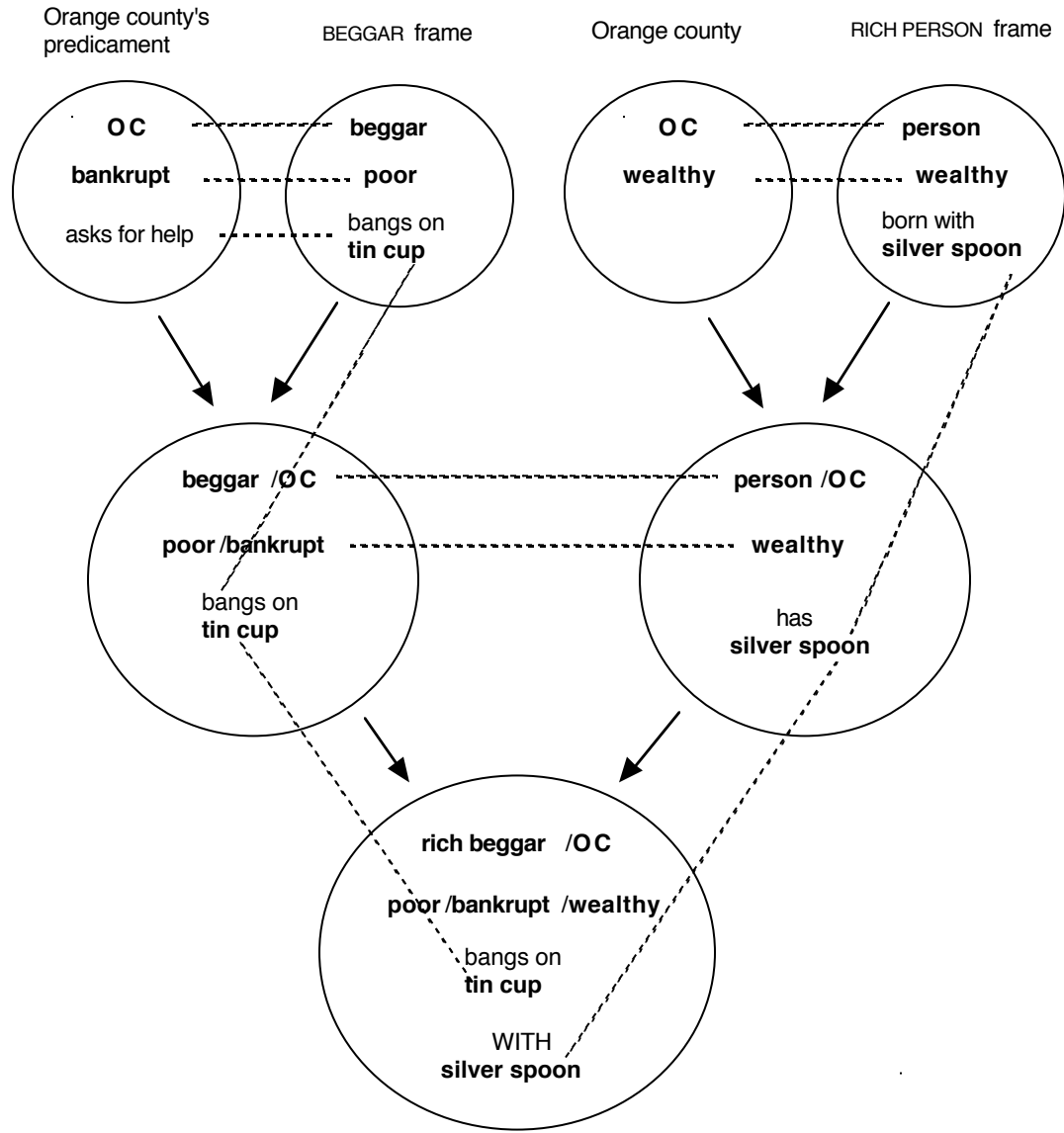
Truth, Science,
Conception, Networks,
Compression, Story

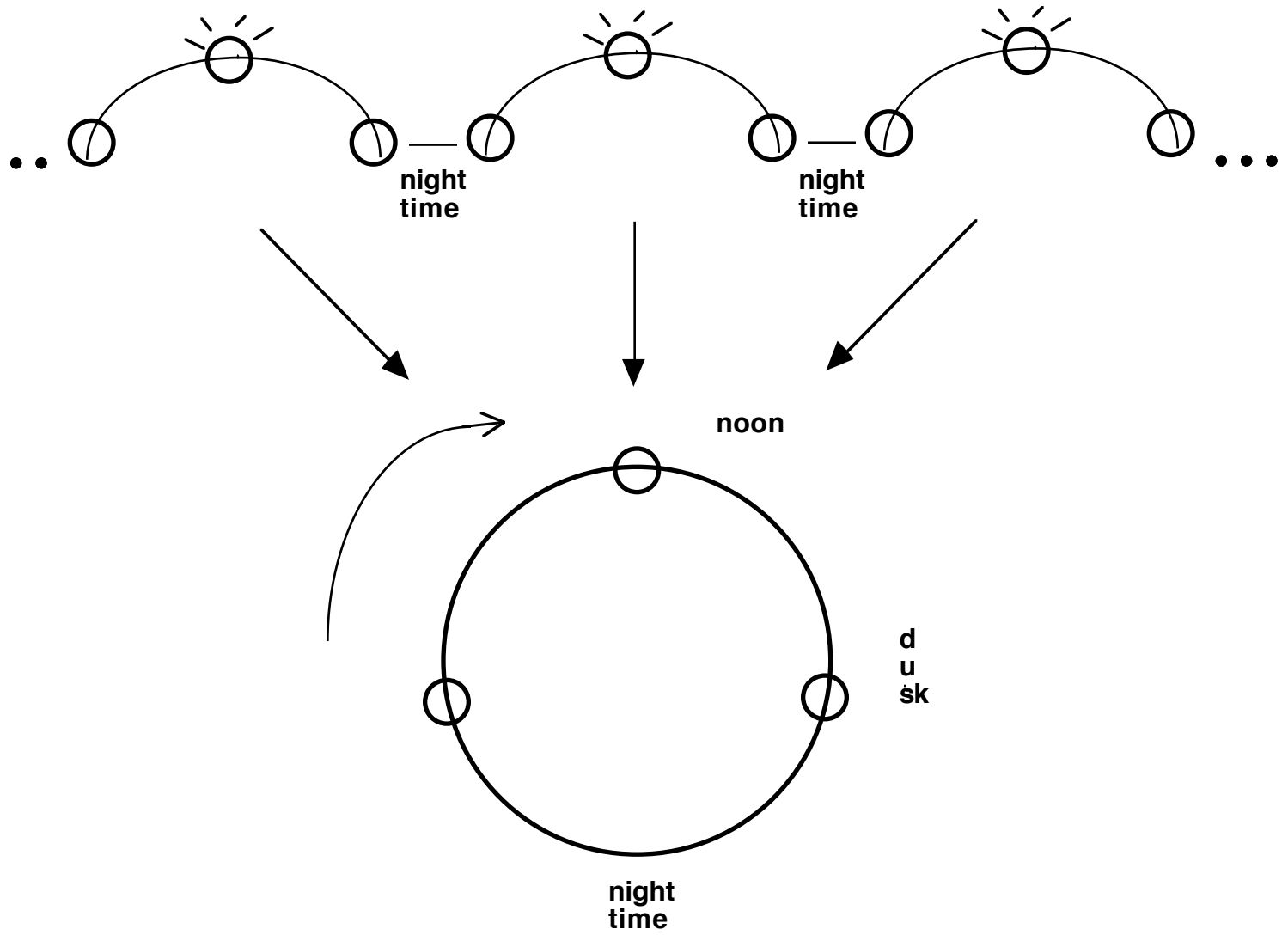


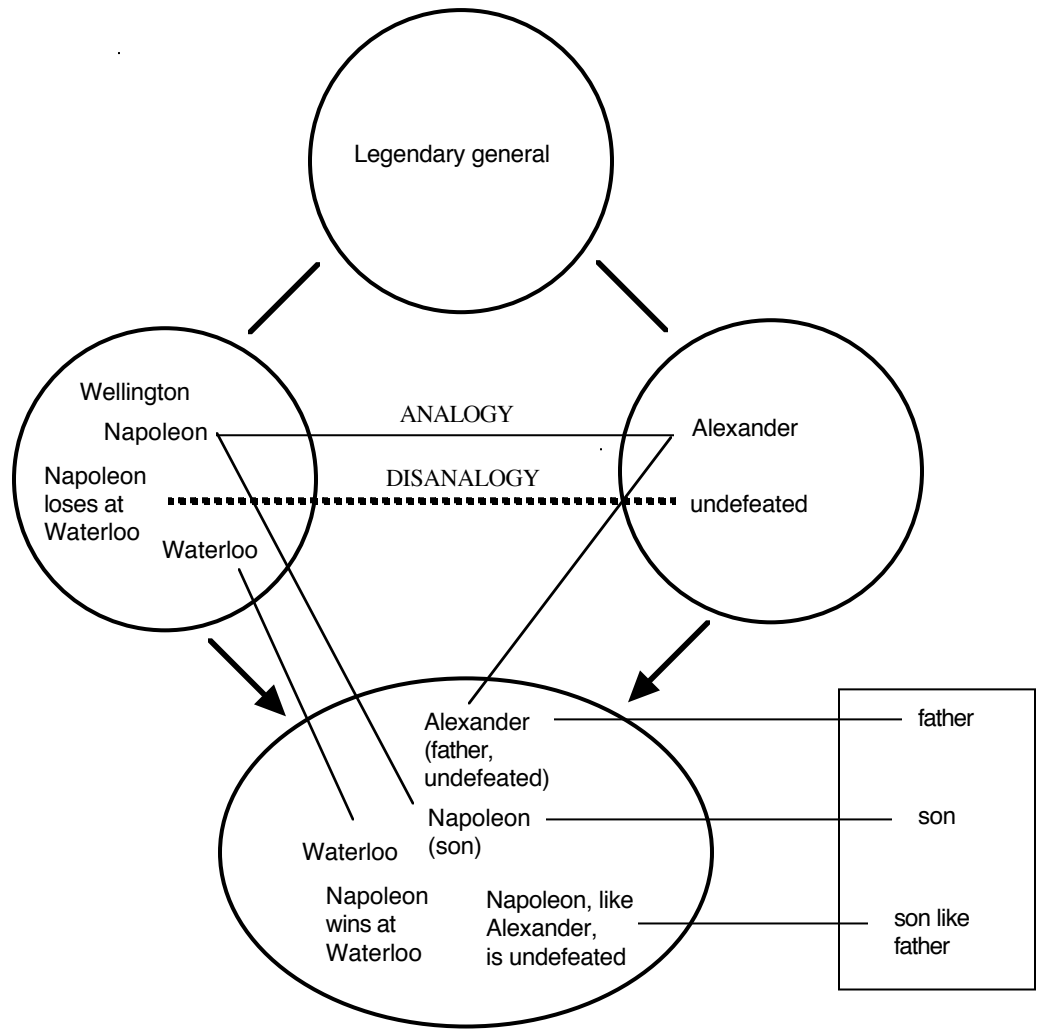
Words \neq Good Theories

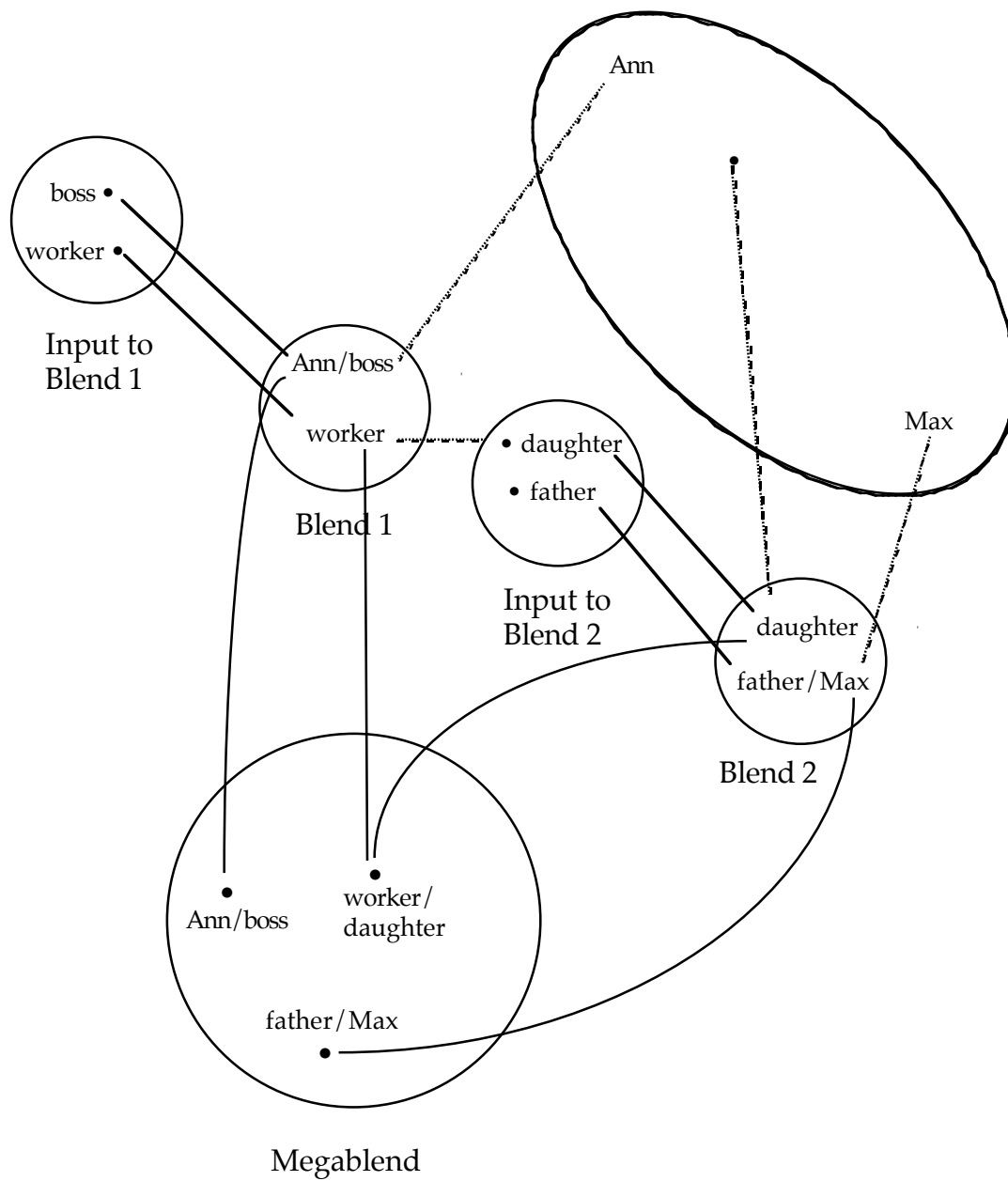
1. We find a great variety of
integration networks

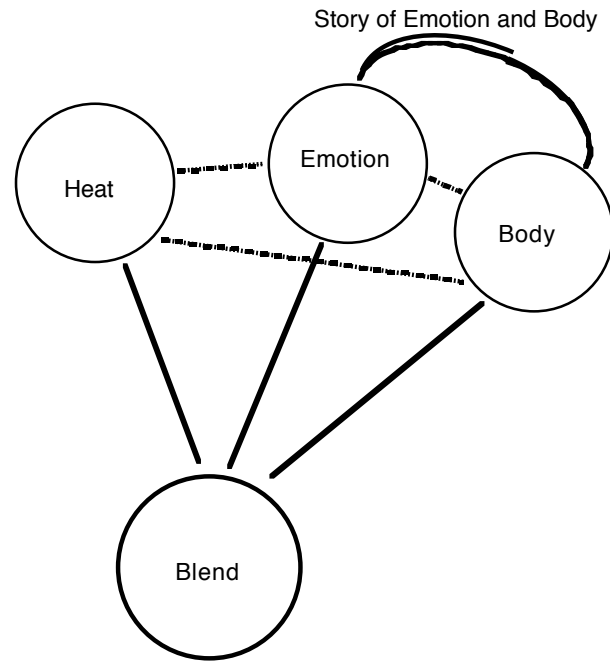
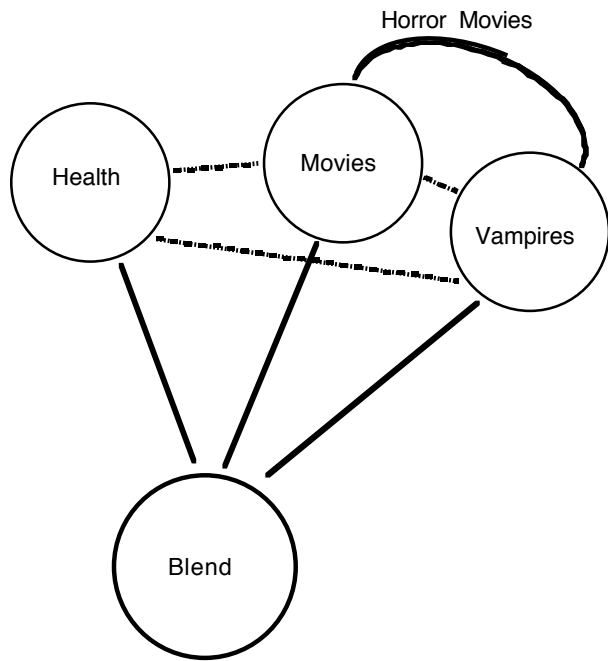








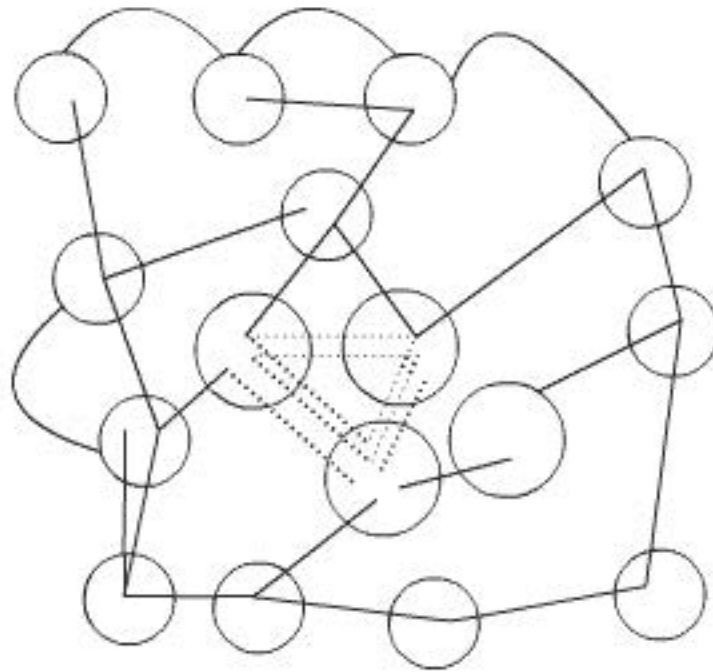




2. The focus is on the operation of blending.

For any specific example one wishes to adduce, there are other important spaces, connections, and operations.

But our focus is on the principles of the operation of blending.



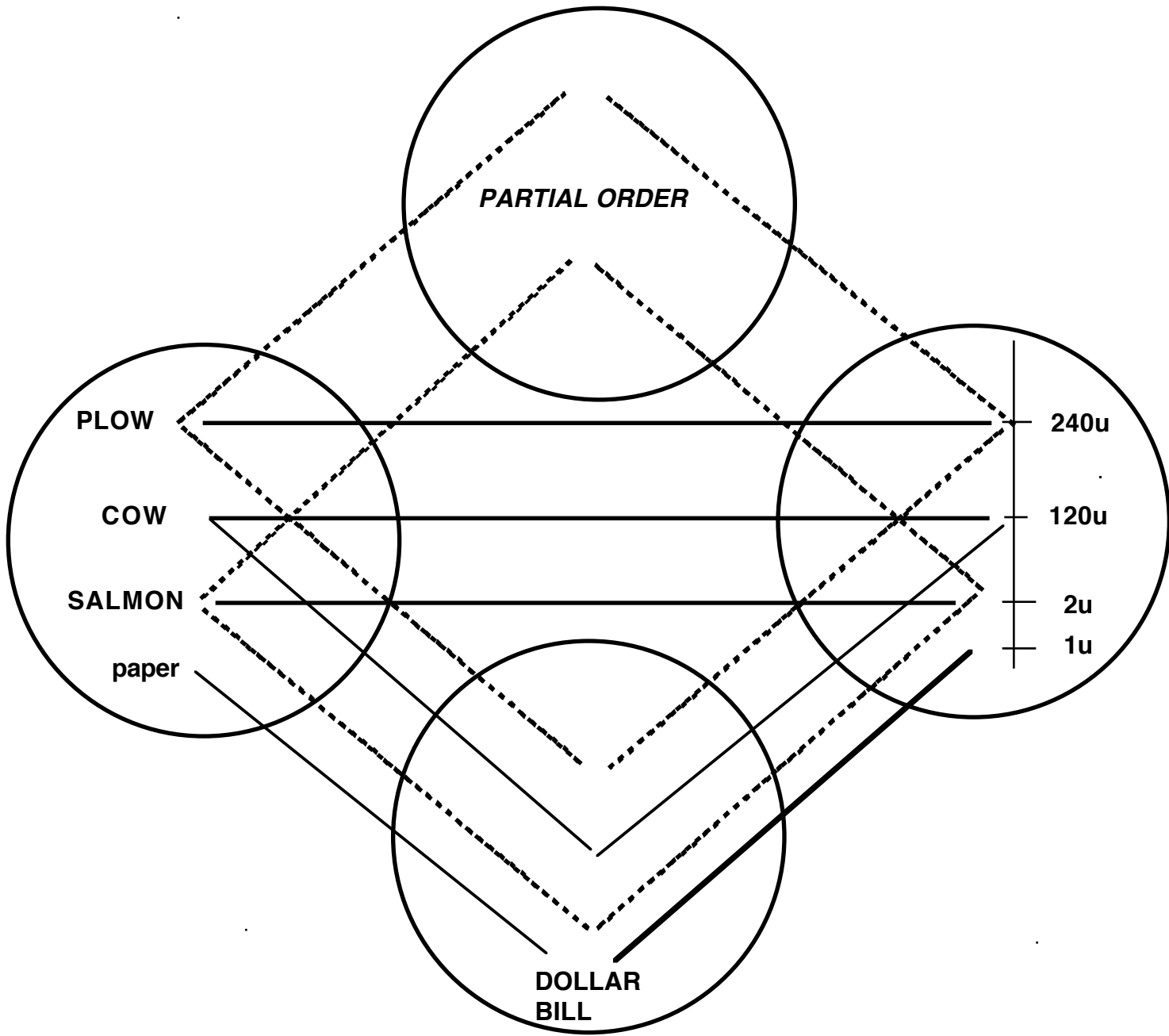
3. Anecdotal hypothesis re: spaces. We need a research program on activation of spaces.

- Human beings seem to be able to have 15-20 spaces available for work at any moment.
- But focus on 2-4 (maybe sometimes 5-7).
- Hundreds can come up during brief discourse.
- Hundreds can be bubbling partially and unconsciously.

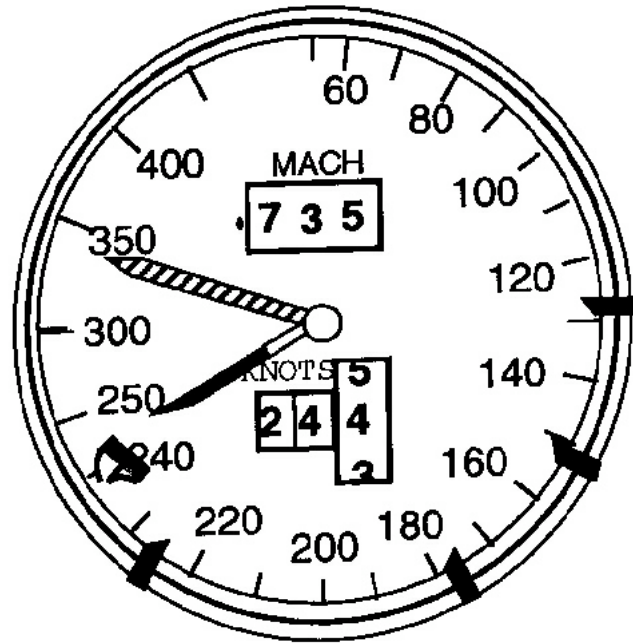
4. Continuity of principles of blending throughout human thought and action.

4. Continuity of principles of blending throughout human thought and action.





4. Continuity of principles of blending throughout human thought and action.



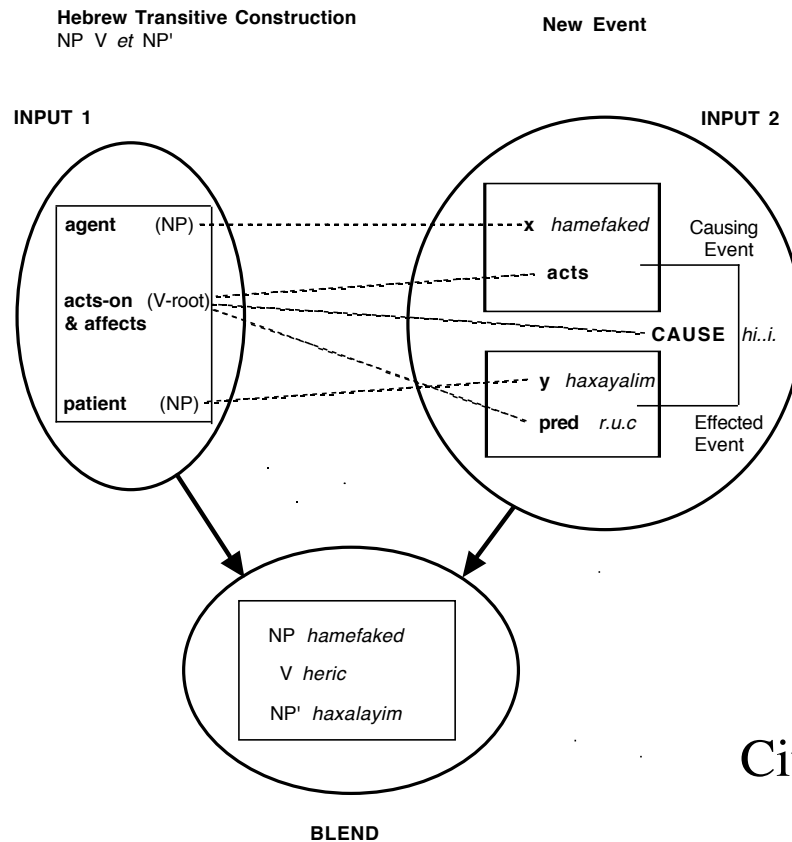
Cite: Ed Hutchins

4. Continuity of principles of blending throughout human thought and action.



Direct connection between vertical speed knob and arrow.
Cite: Barbara Holder

4. Continuity of principles of blending throughout human thought and action.



Cite: Nili Mandelblit

Fig. 17.2 Network for a Hebrew Causative Construction

4. Continuity of principles of blending throughout human thought and action.

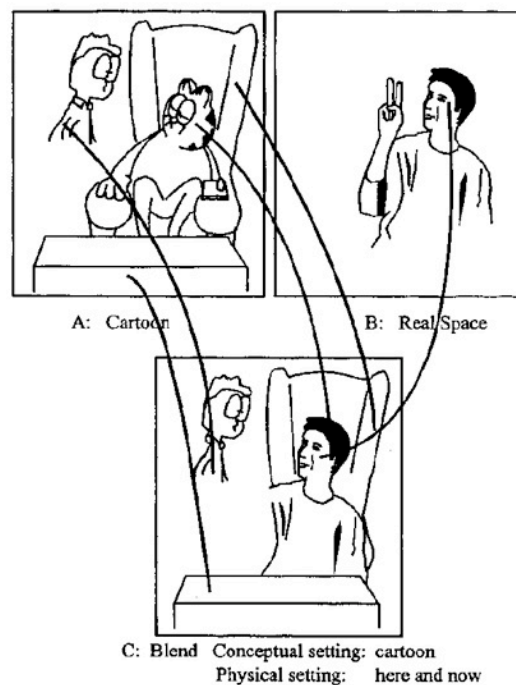


Figure 4. A blend with signer as Garfield

Cite: Scott Liddell

4. Continuity of principles of blending throughout human thought and action.



4. Continuity of principles of blending throughout human thought and action.



4. Continuity of principles of blending throughout human thought and action.



4. Continuity of principles of blending throughout human thought and action.



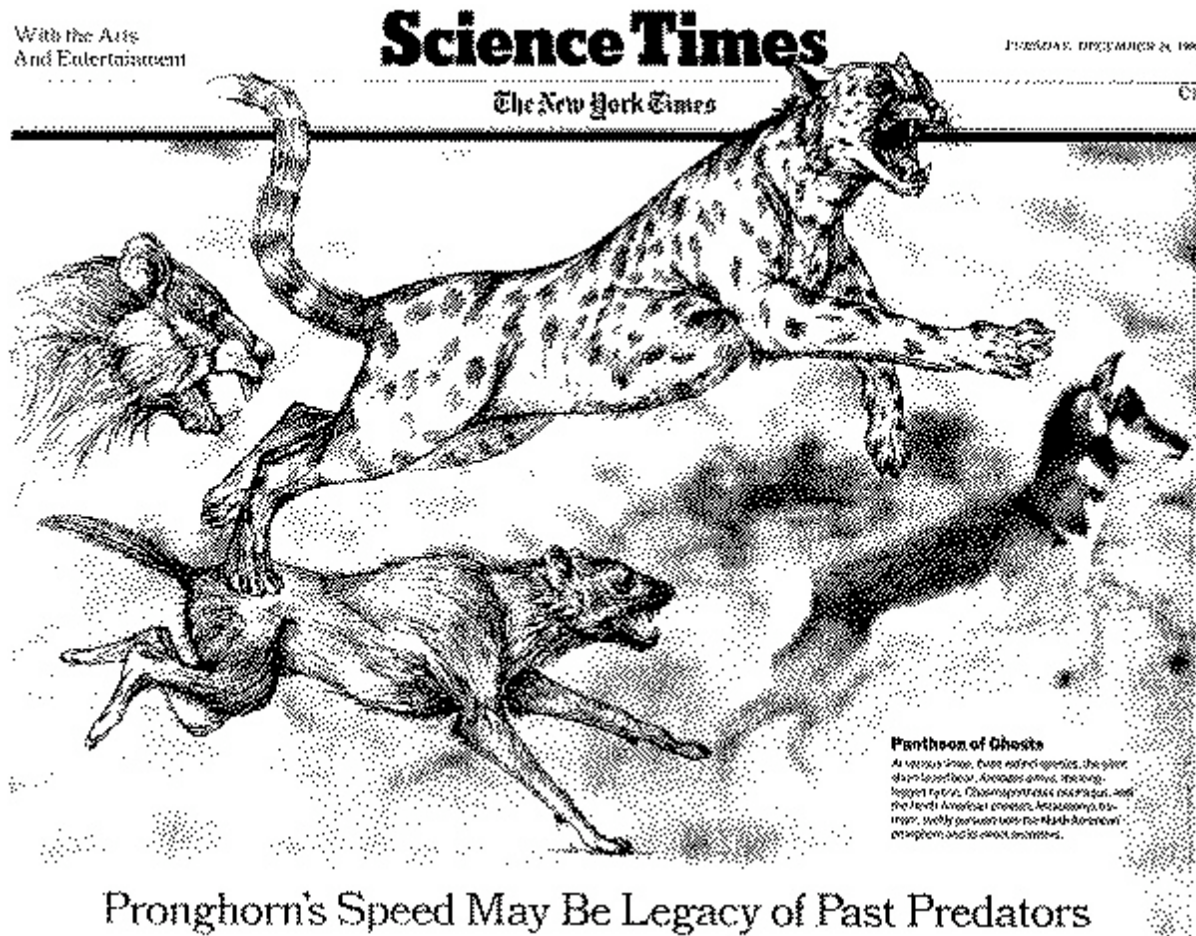
4. Continuity of principles of blending throughout human thought and action.

With the Arts
And Entertainment

Science Times

THE NEW YORK TIMES

FRIDAY, DECEMBER 2, 1995



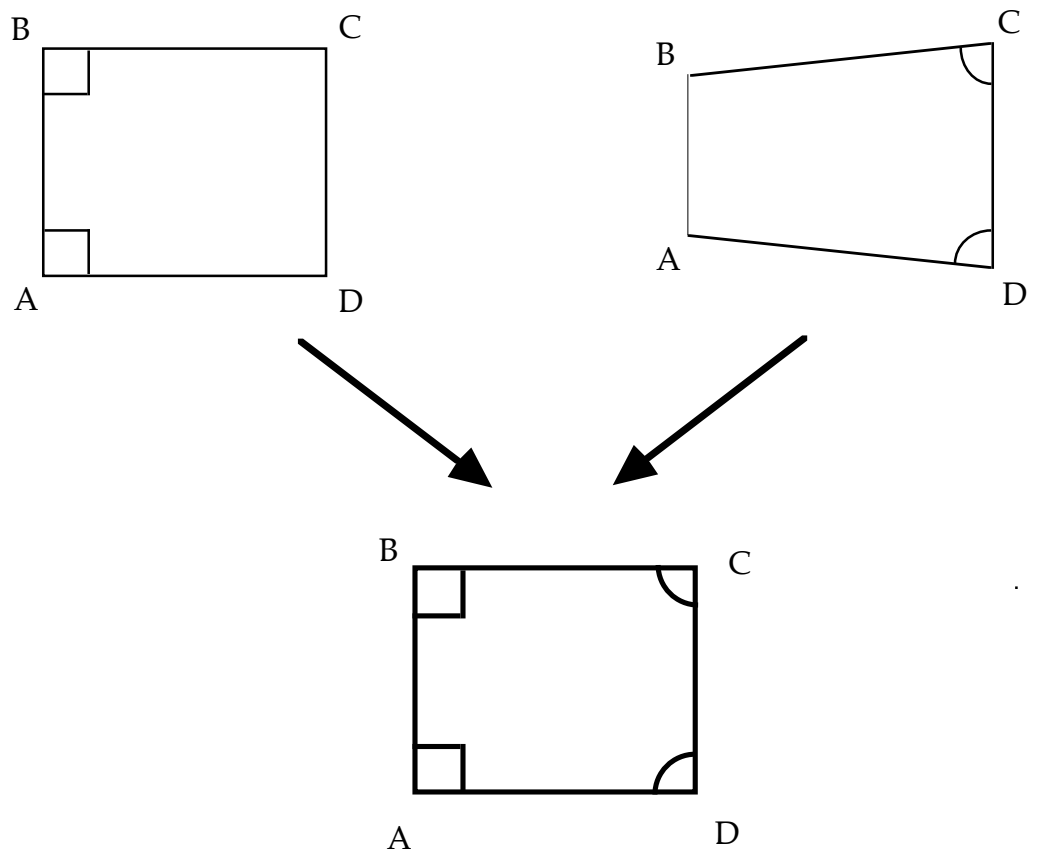
Pantheon of Ghosts
At various times, man and his species, the great
dwarf ape, Neanderthal, and his long-
legged forebears, the hominids, and
the North American mastodons, mammoths, bis-
trons, woolly mammoth, the North American
mammoth and its extinct relatives.

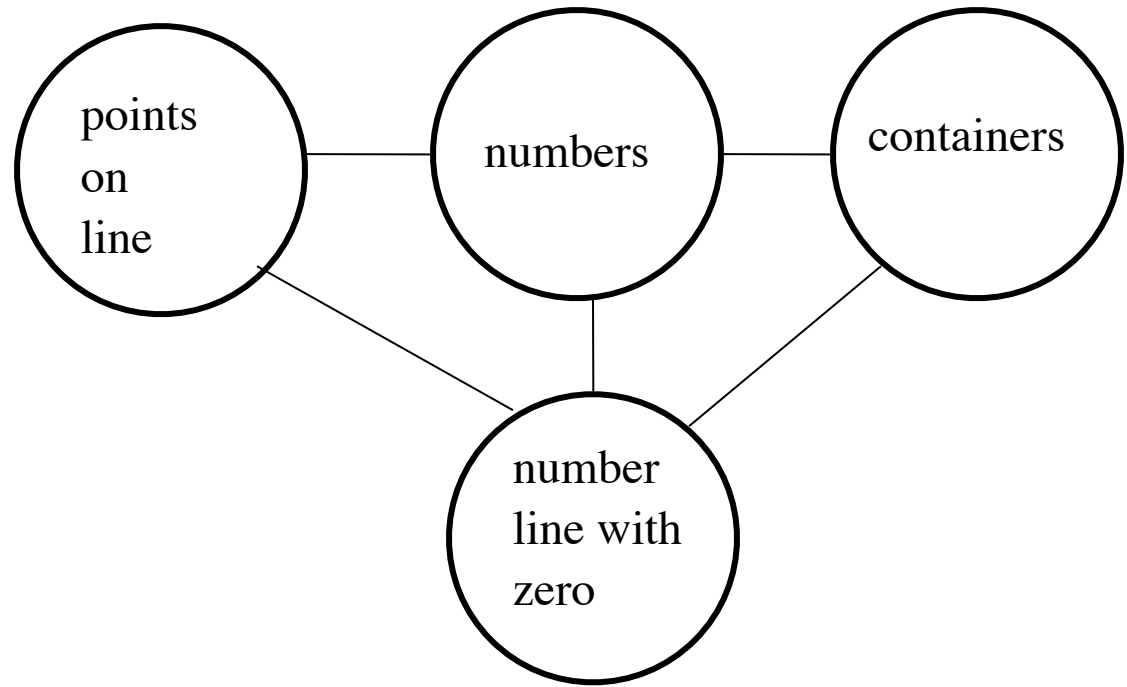
Pronghorn's Speed May Be Legacy of Past Predators

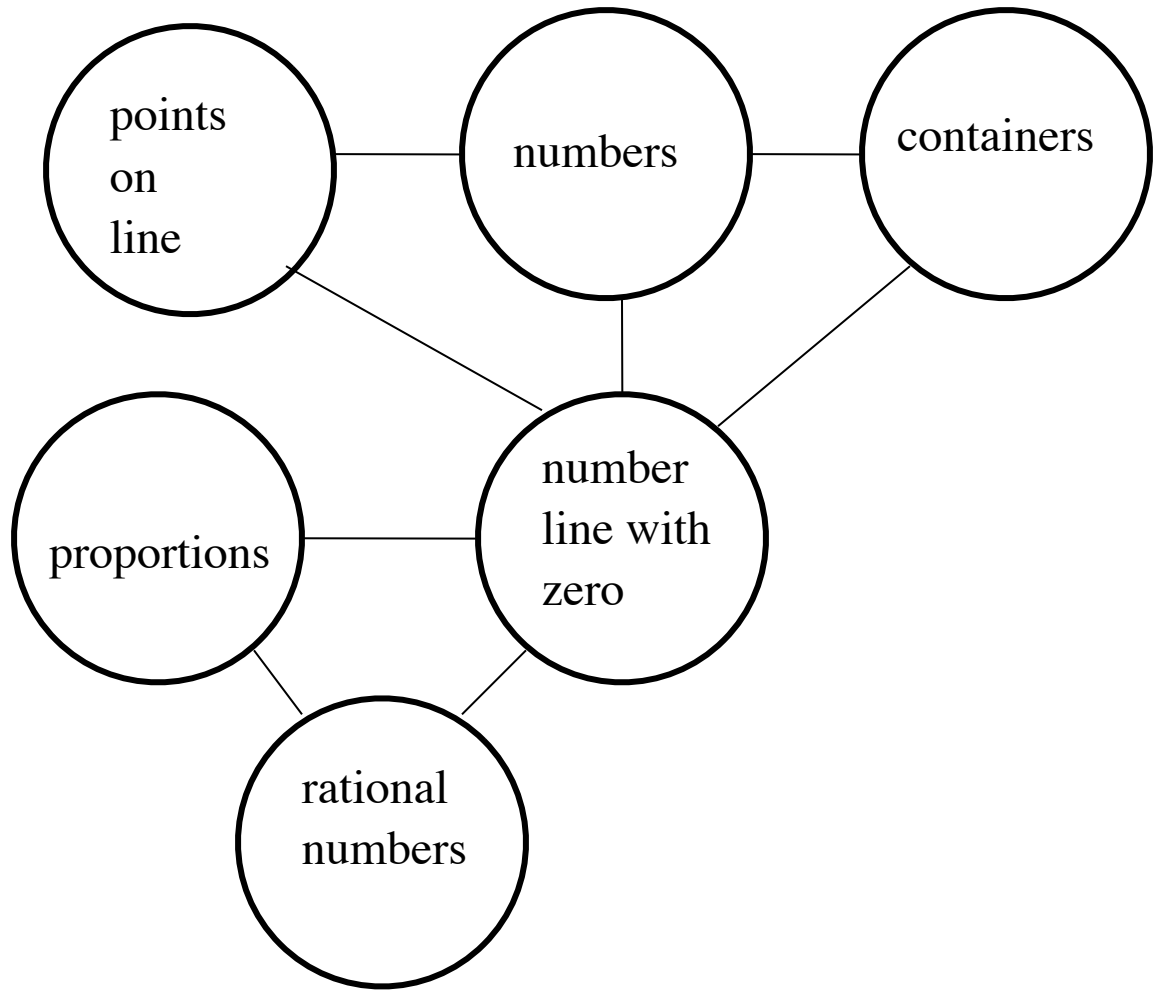
4. Continuity of principles of blending throughout human thought and action.

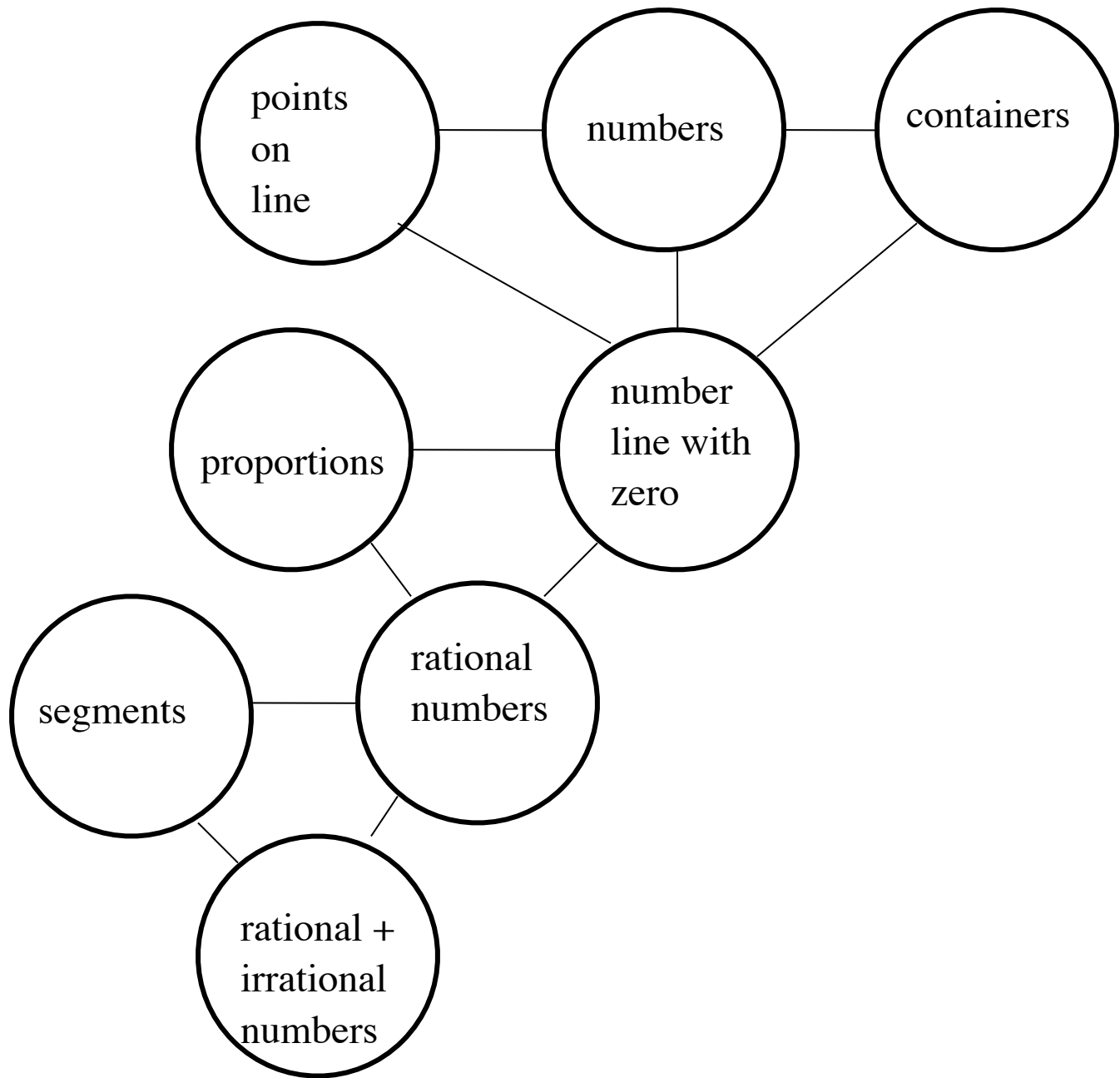


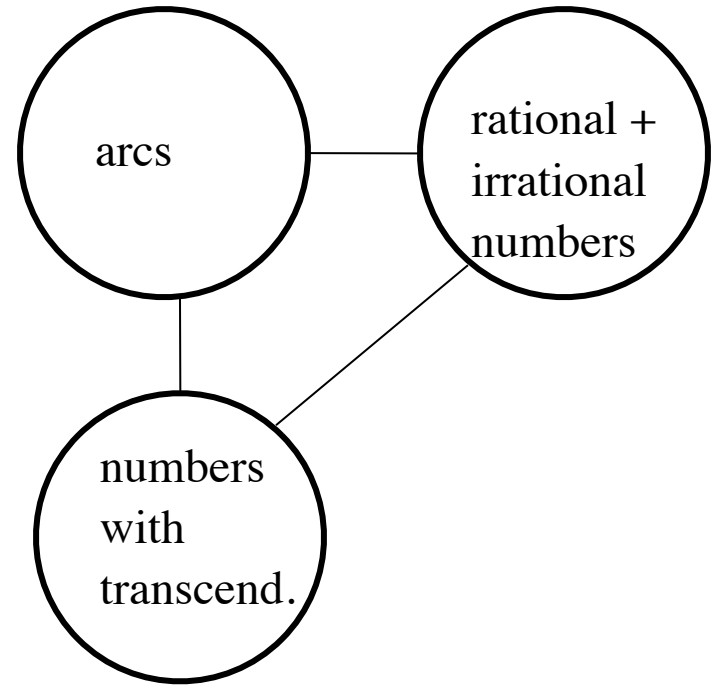
4. Continuity of principles of blending throughout human thought and action.

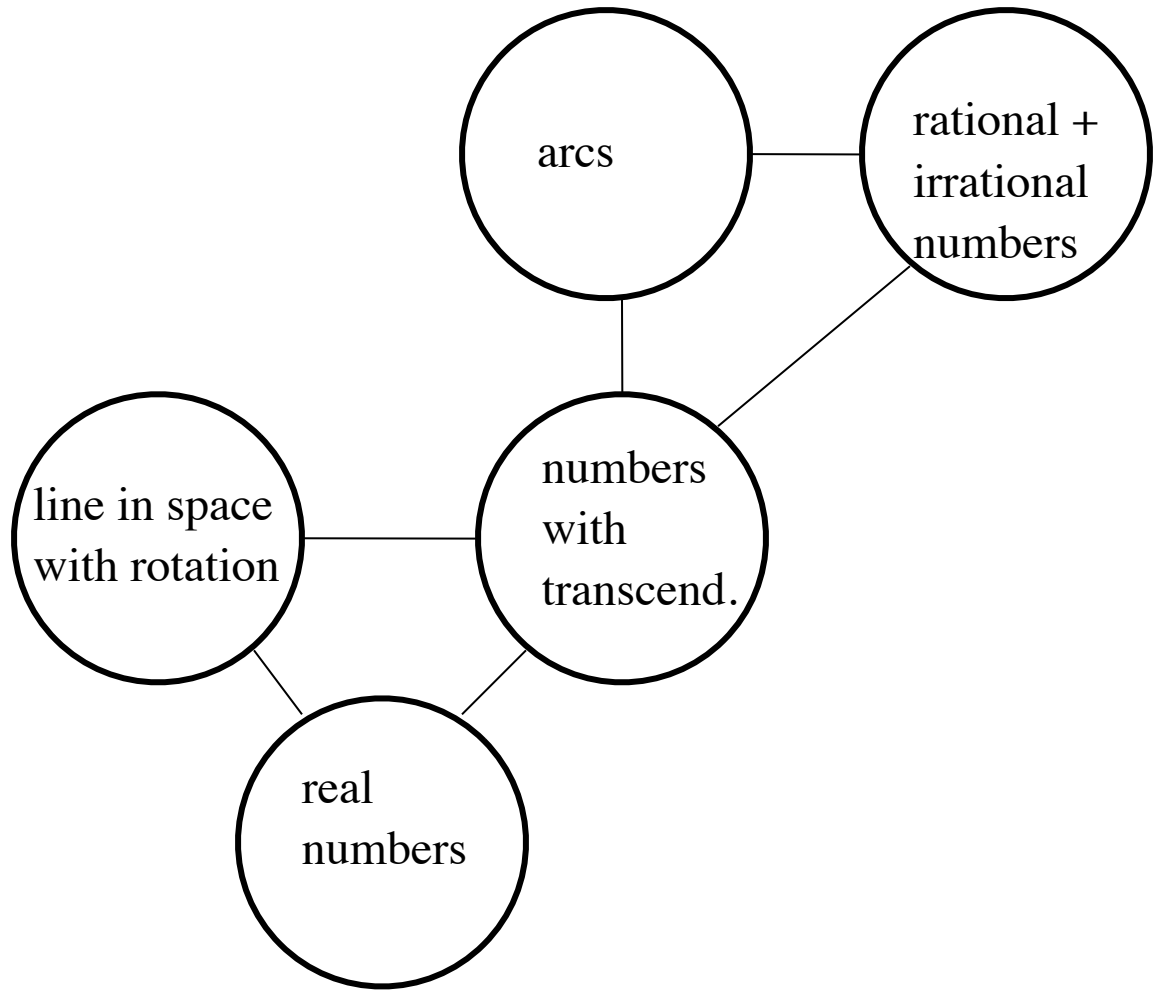


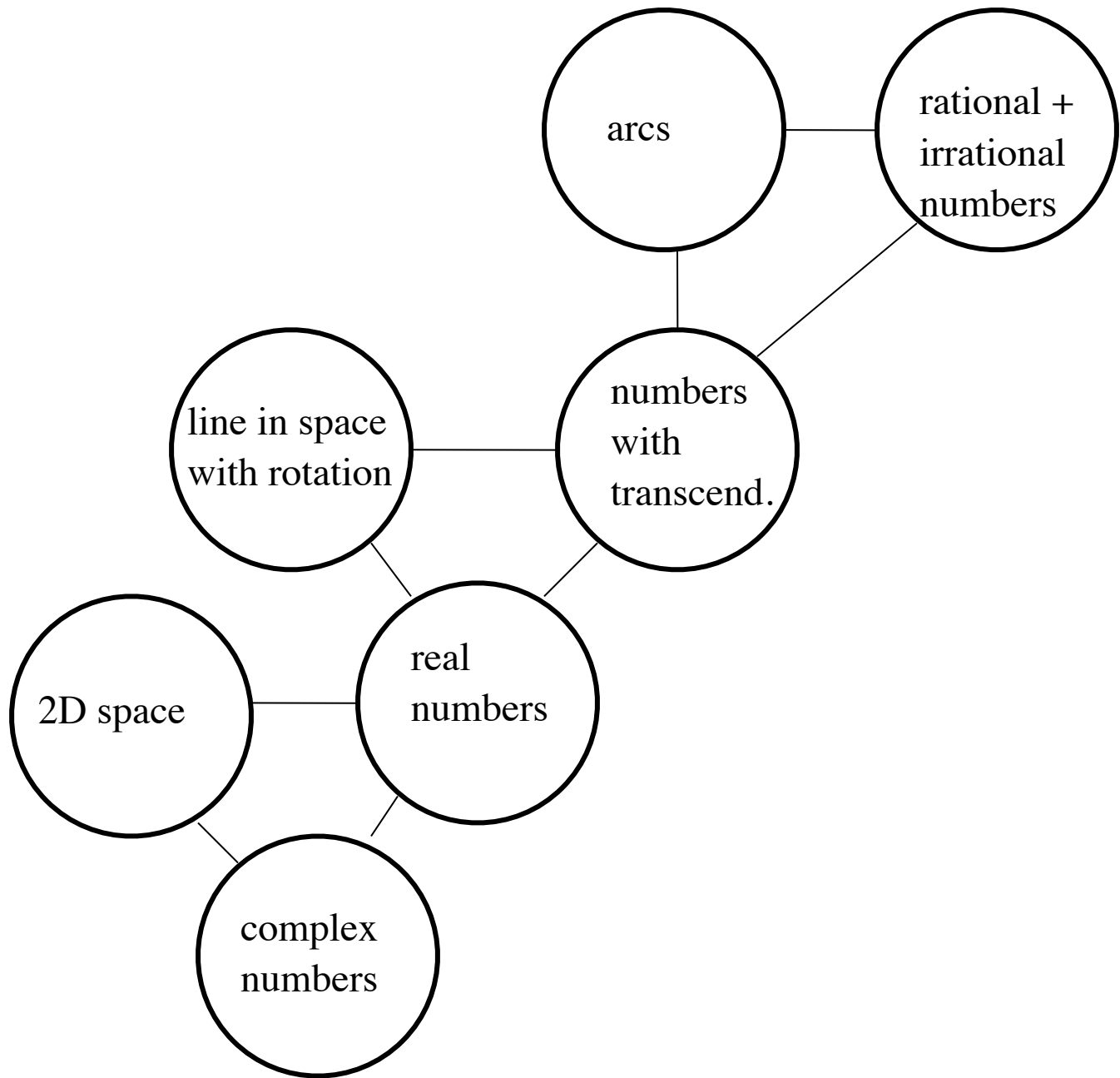










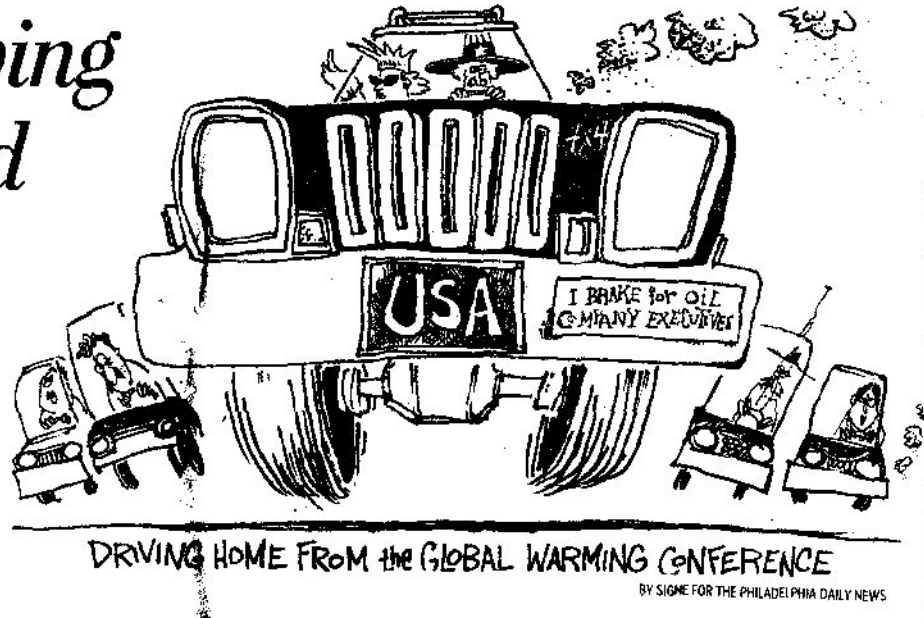


4. Continuity of principles of blending throughout human thought and action.

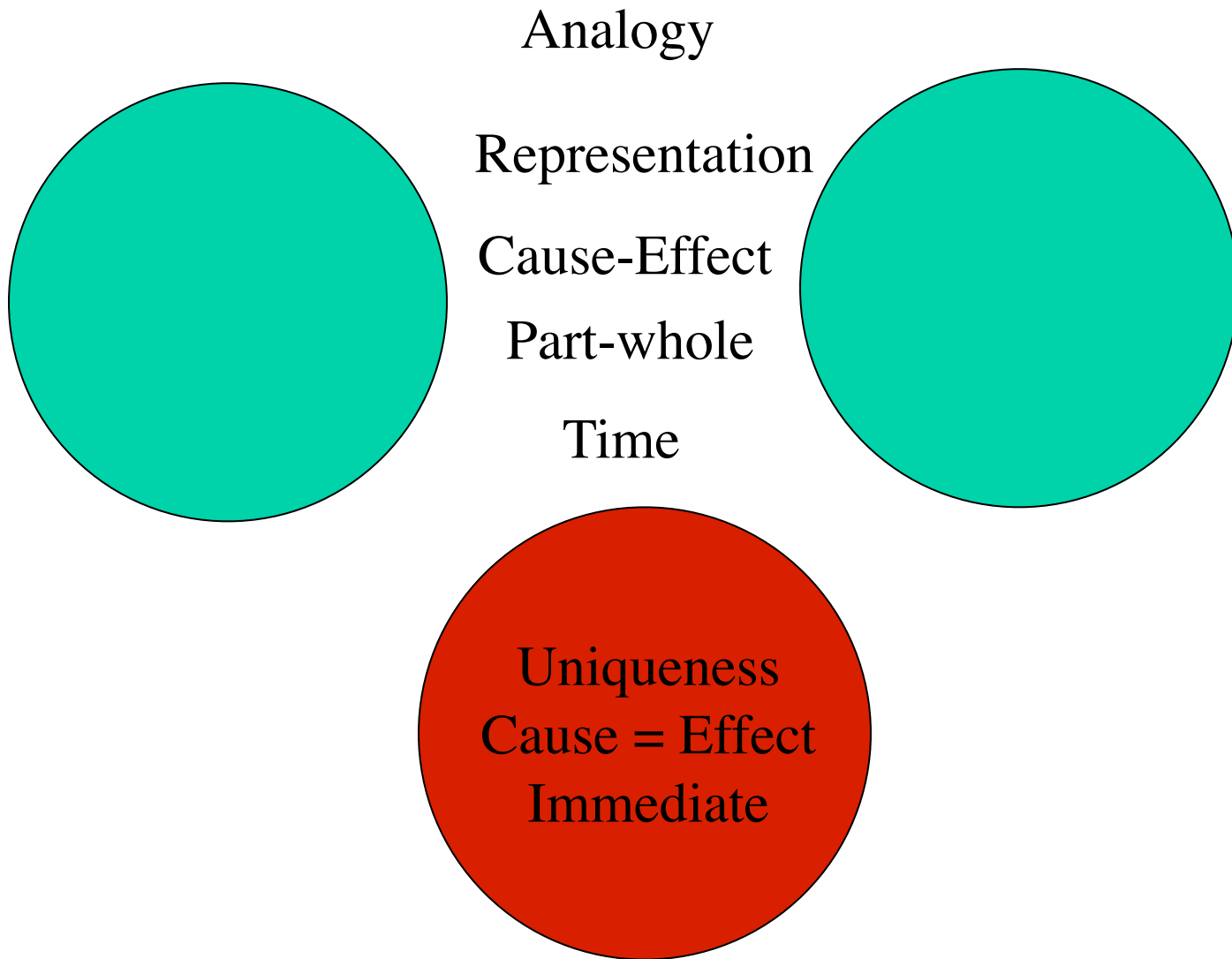
James Alexander, “Mathematical Blending.” Cognitive Science Network.

4. Continuity of principles of blending throughout human thought and action.

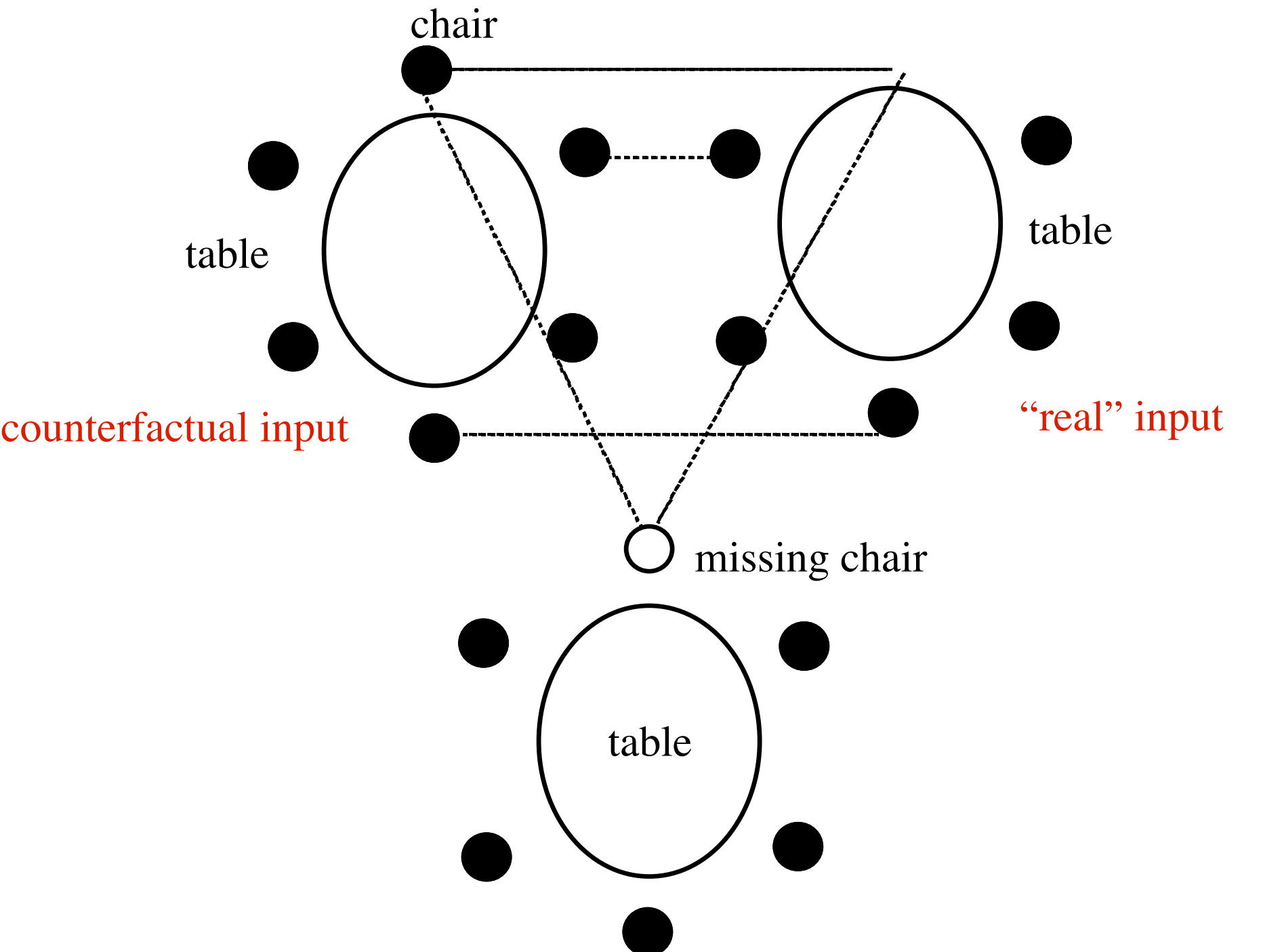
Drawing Board



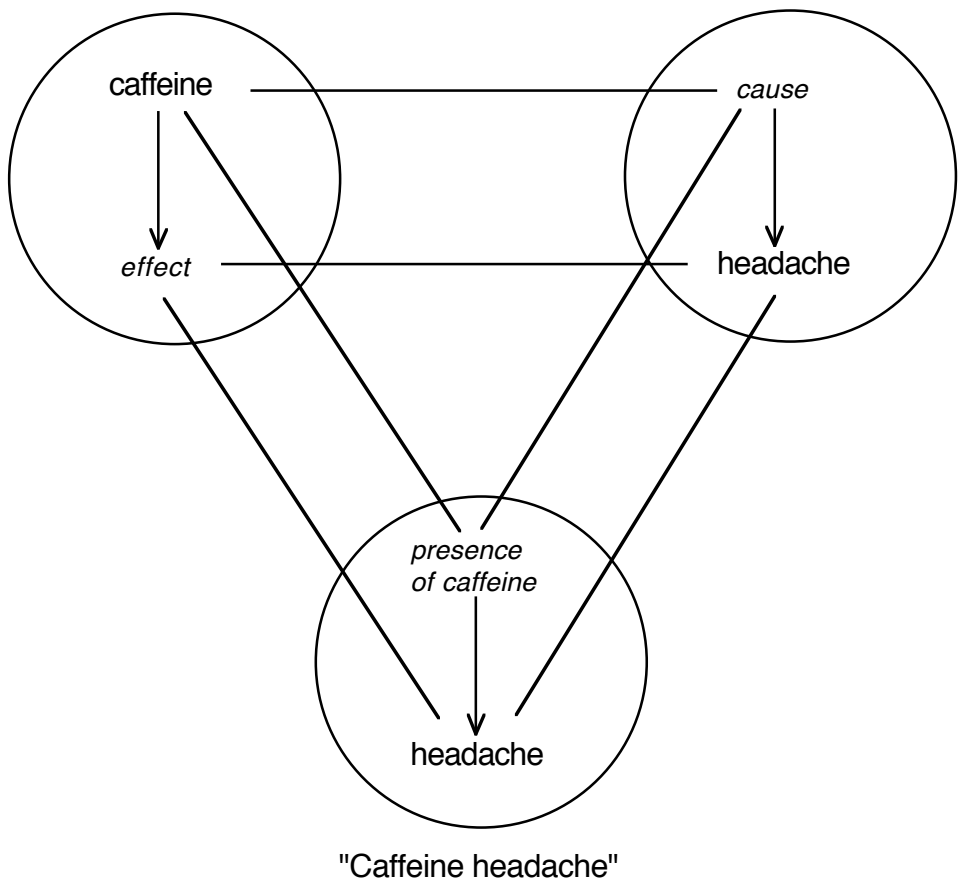
Magic, Religion, Voodoo

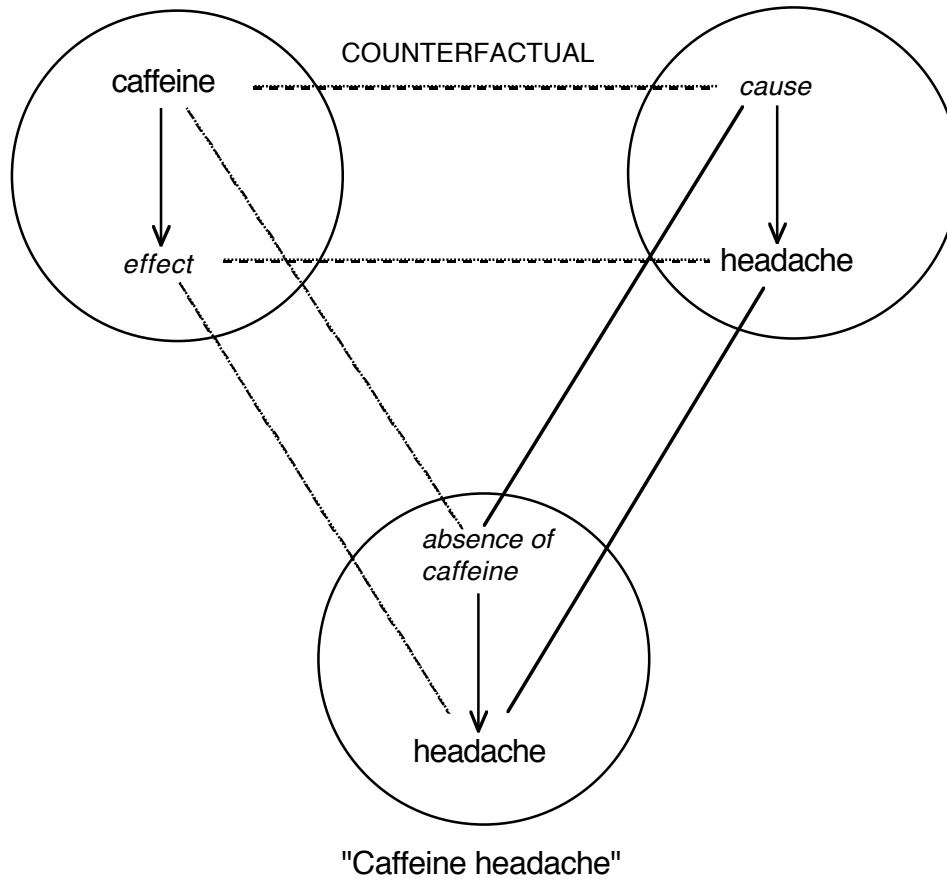


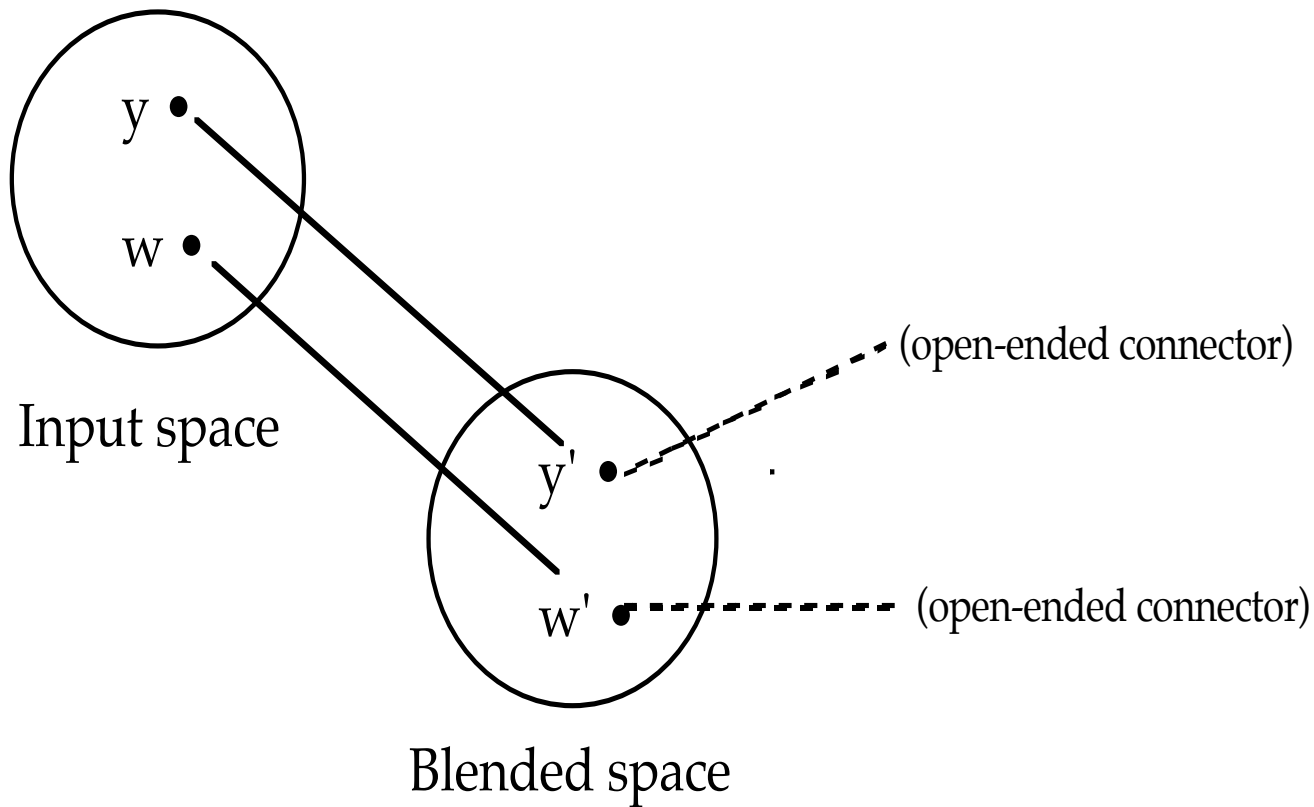
- missing chair



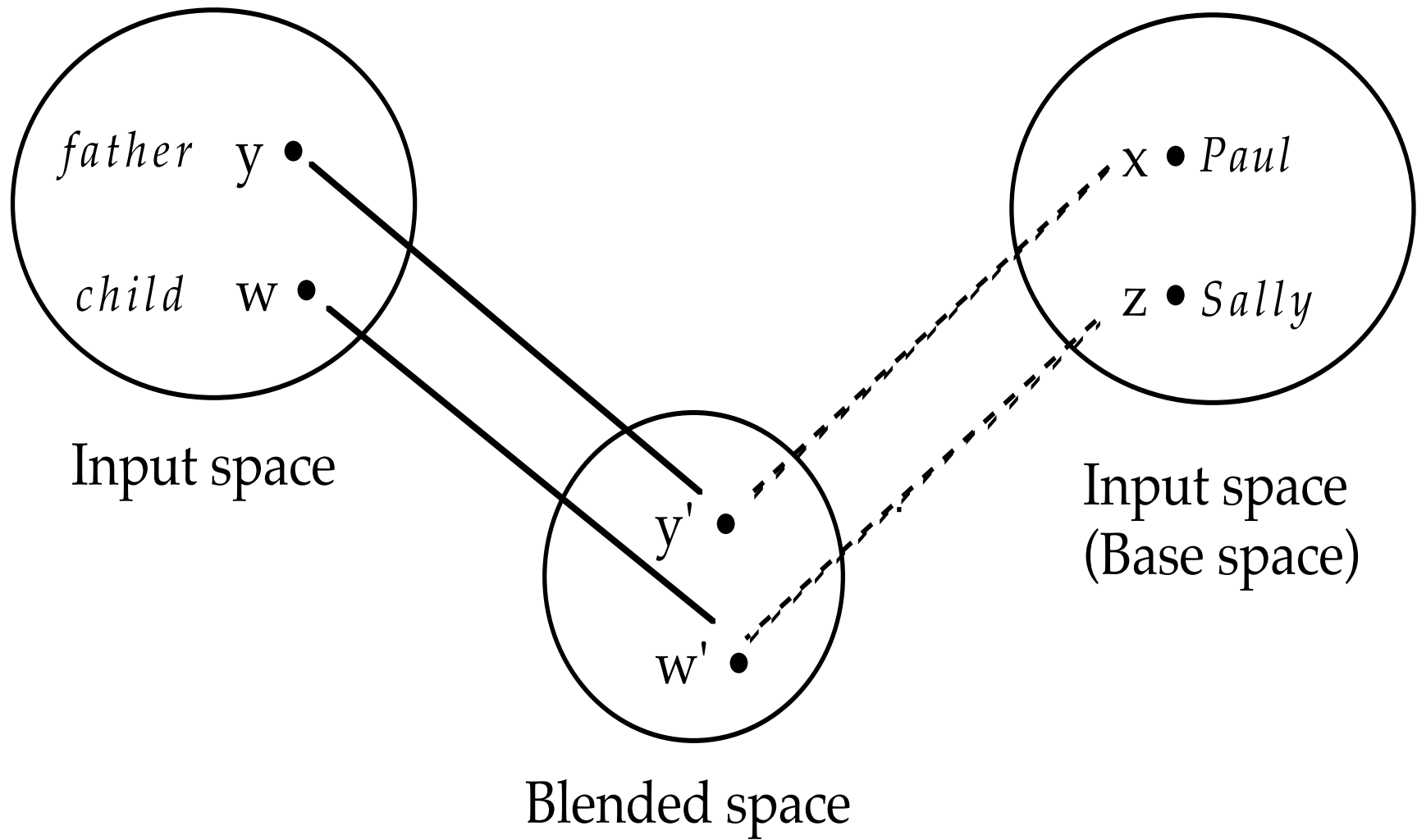
caffeine headache
money problem
nicotine fit
security problem
arousal problem
insulin coma
insulin death
food emergency
honesty crisis
rice famine

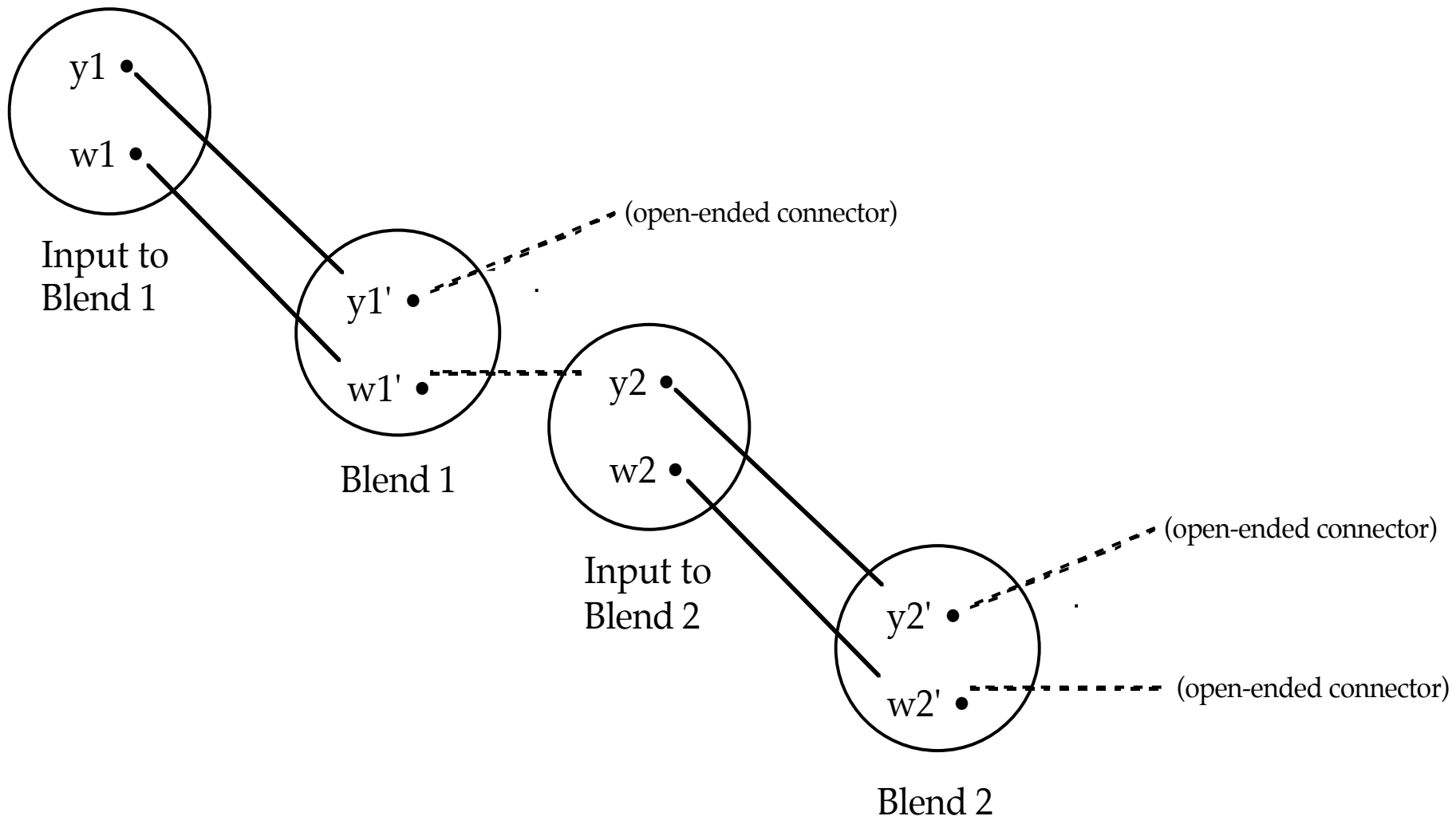


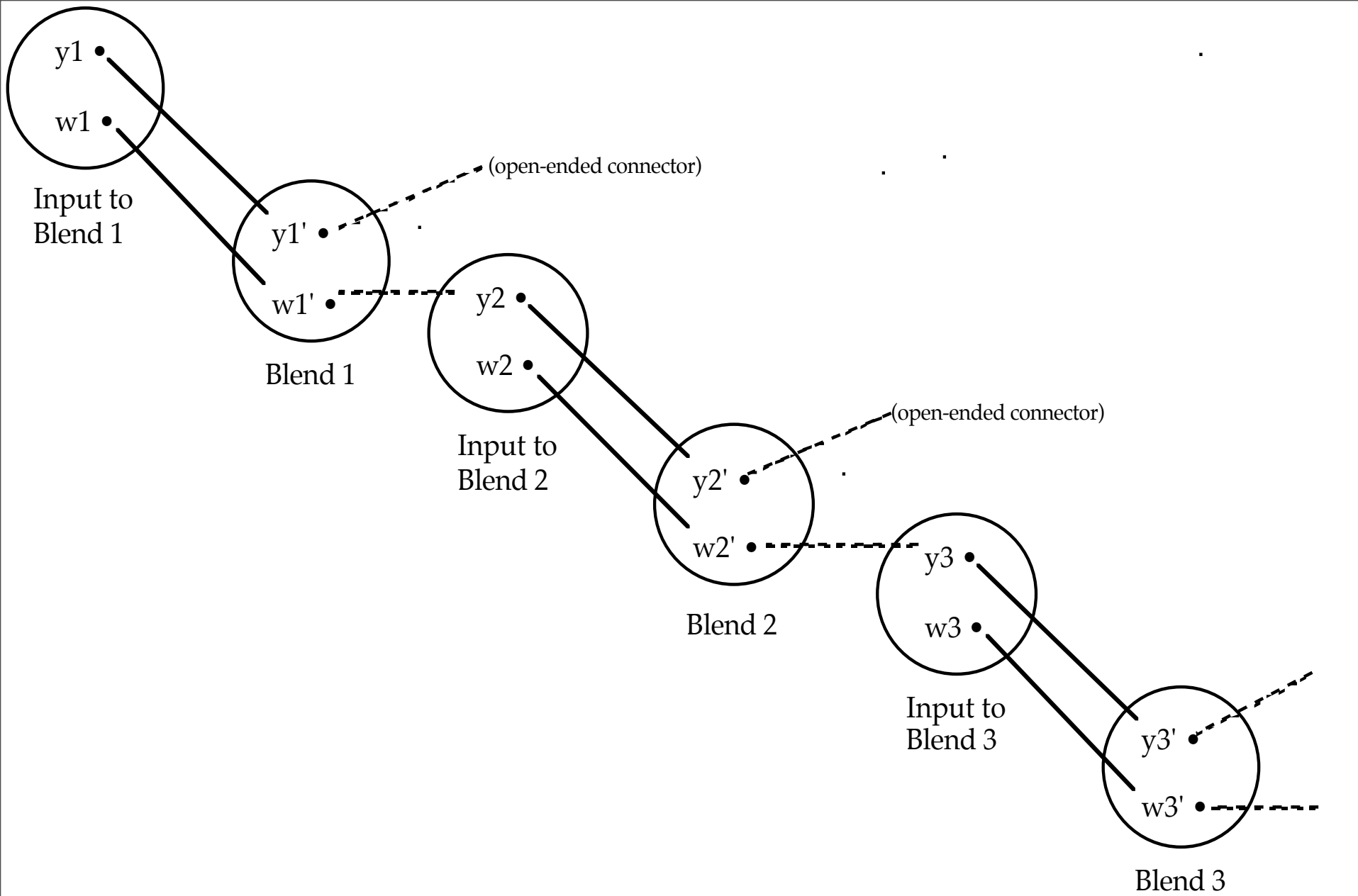


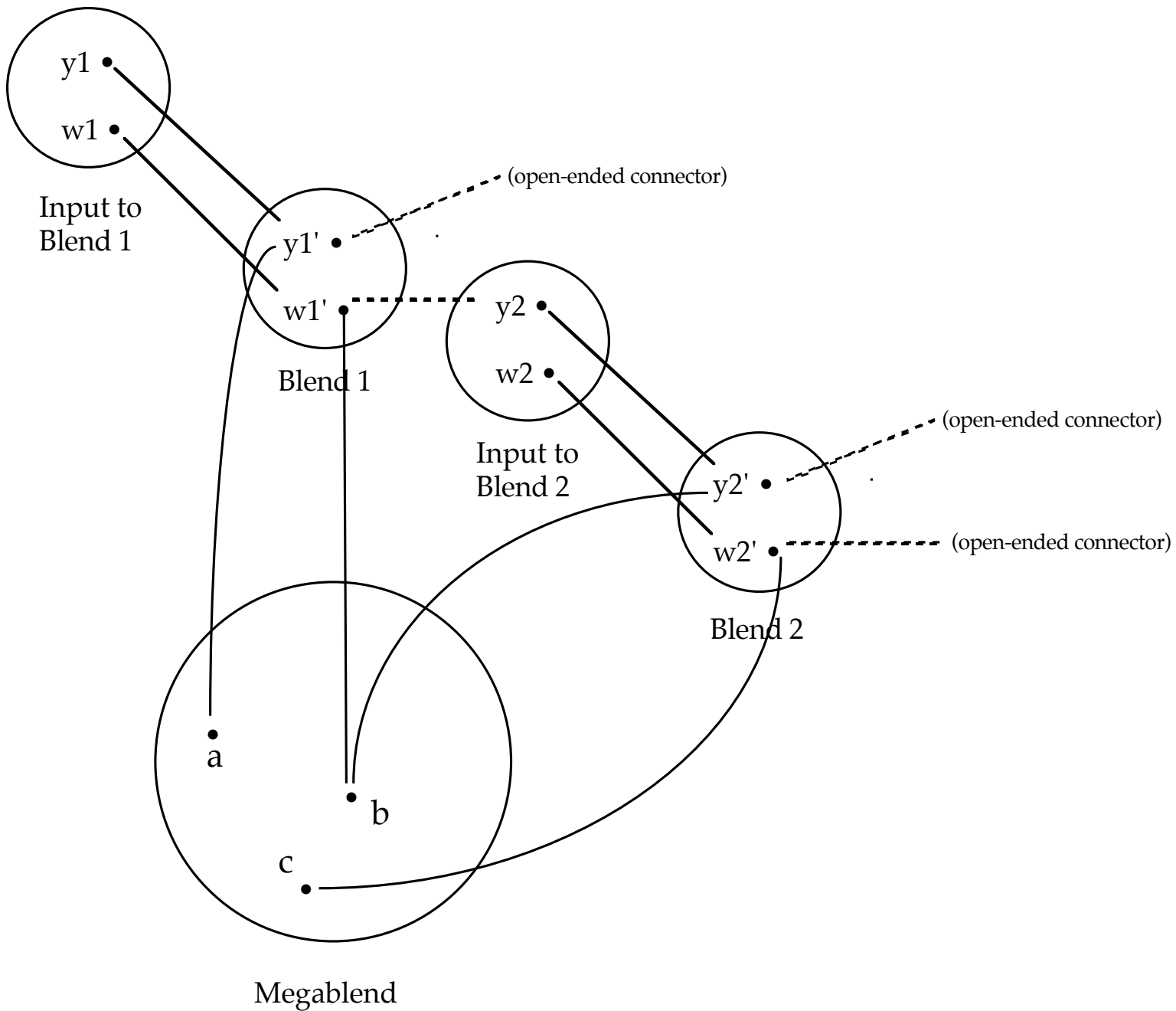


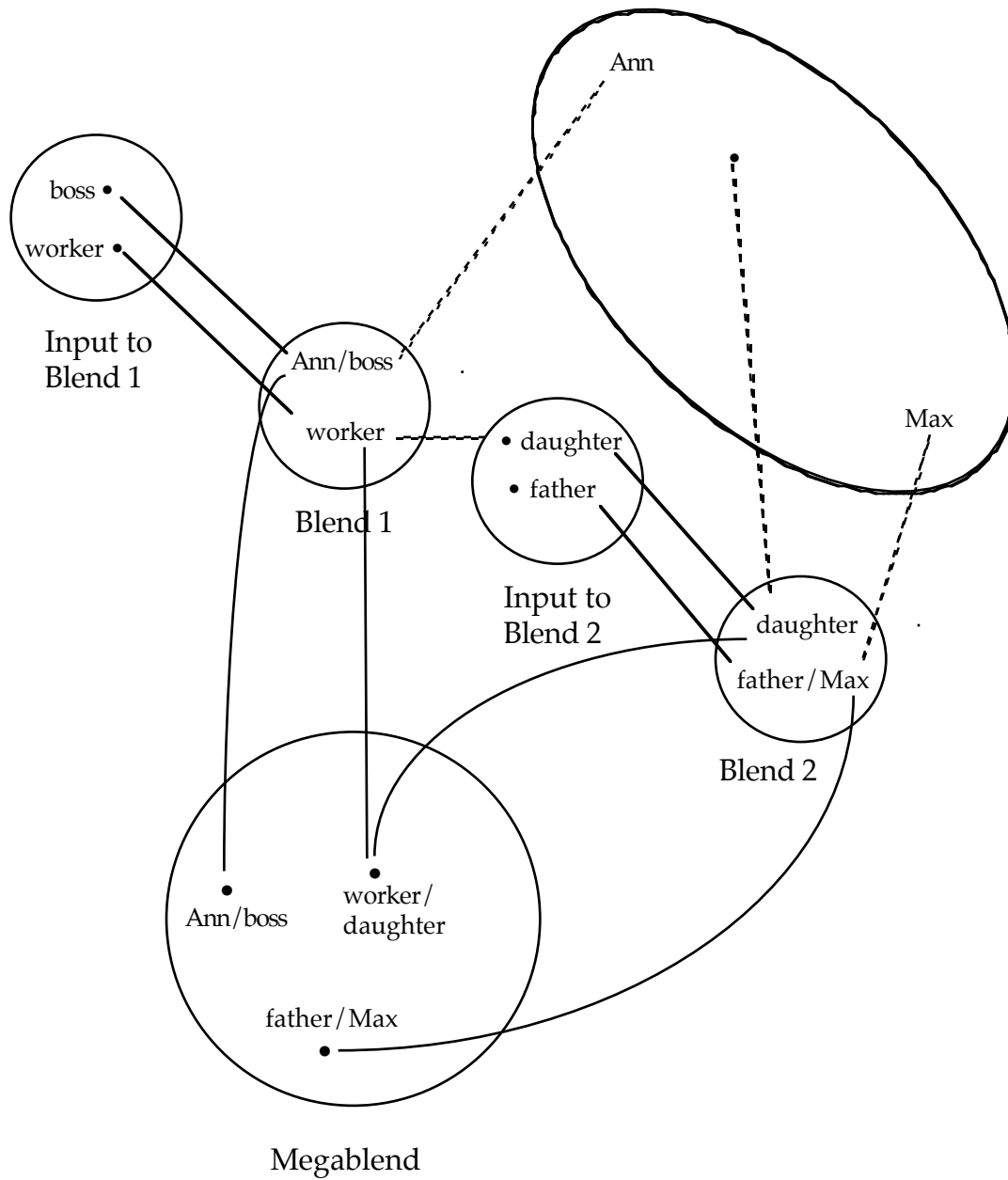
The Y-of Network

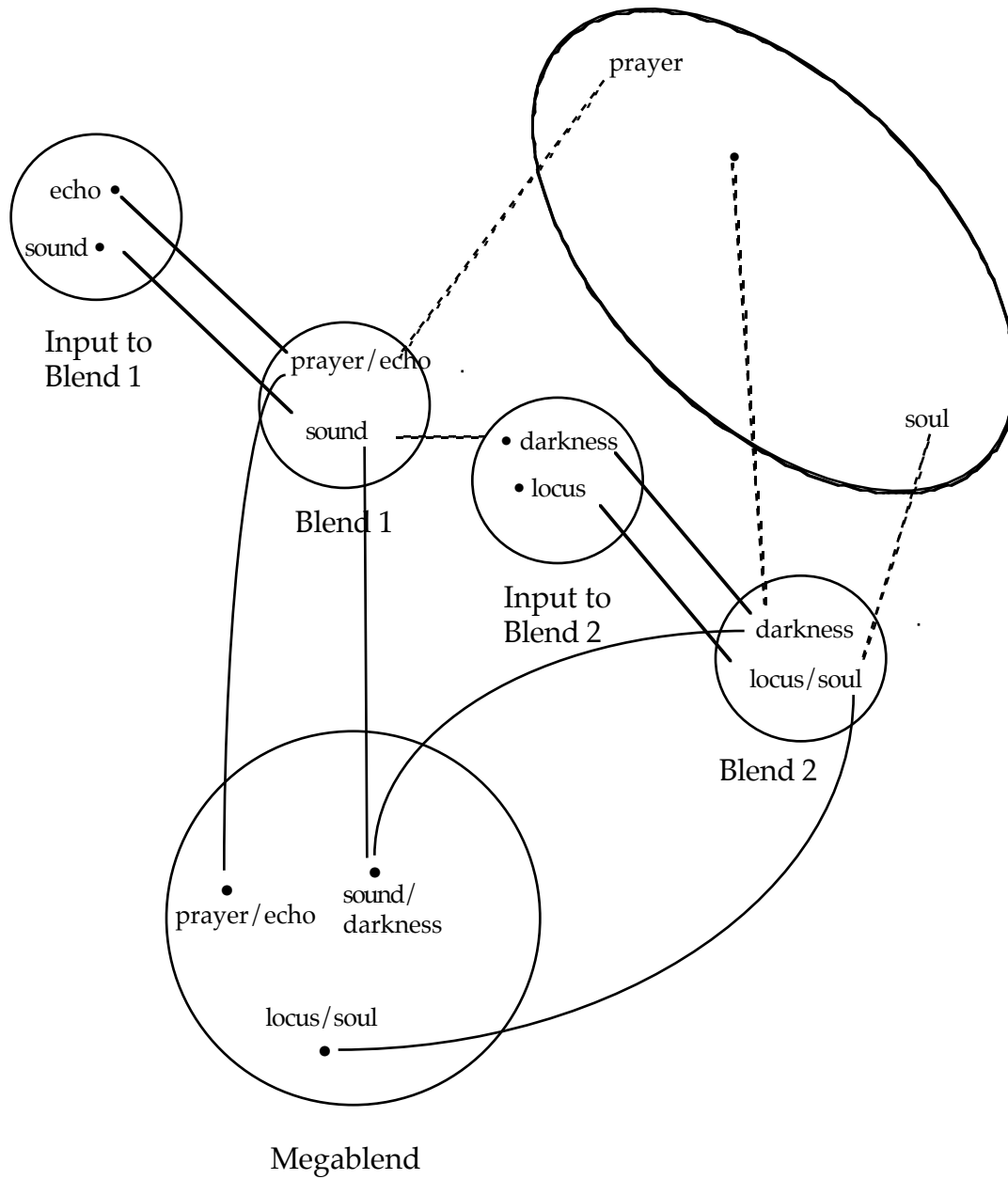






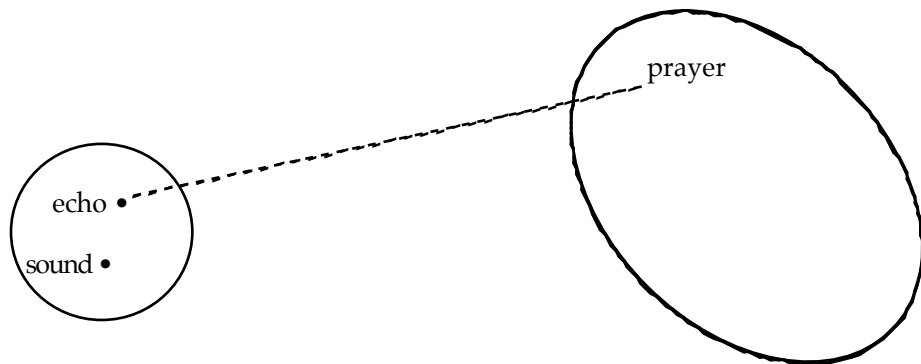


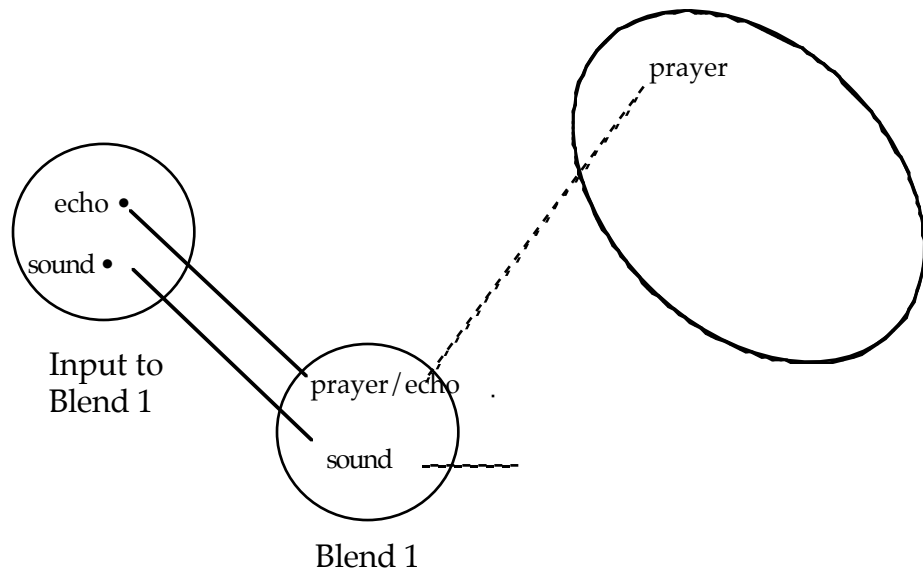


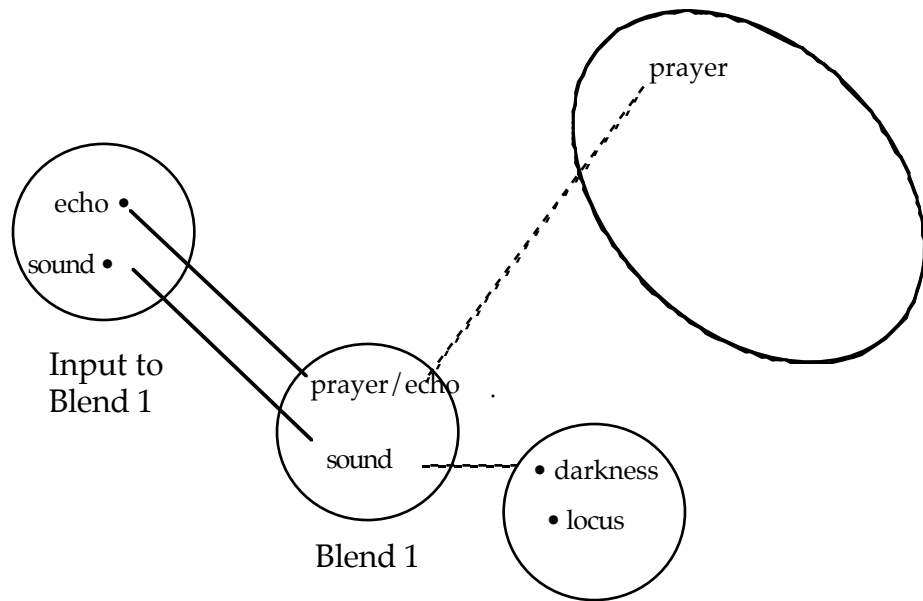


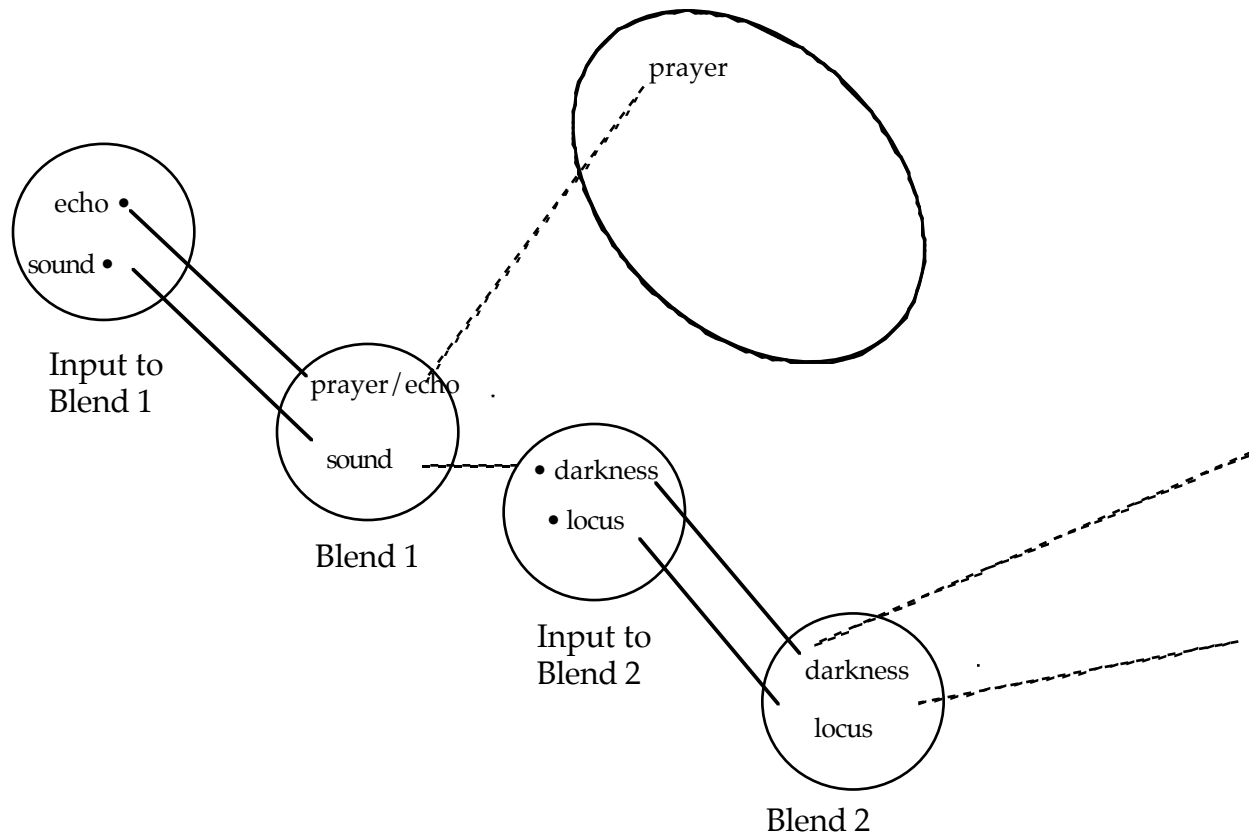


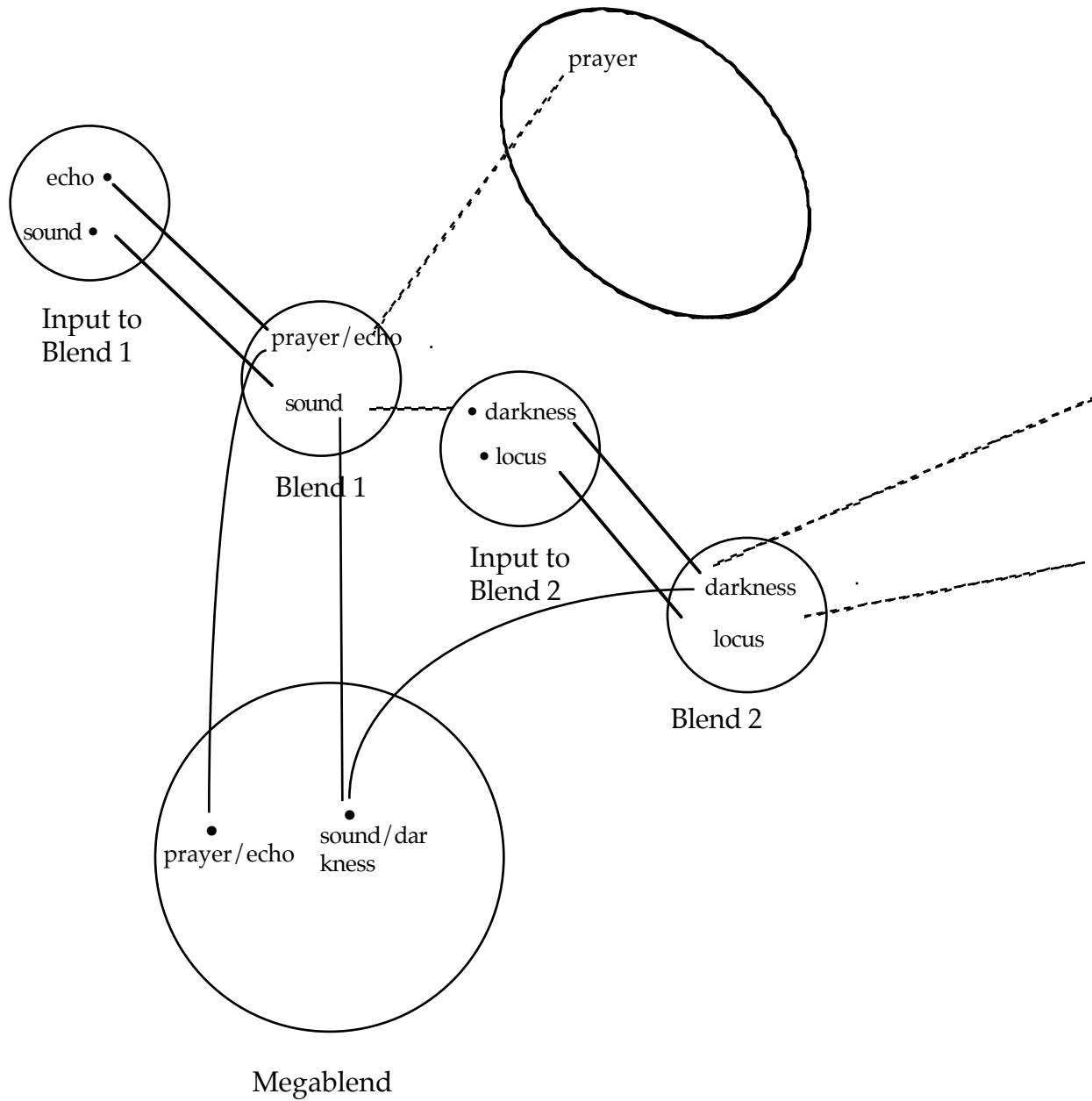
prayer

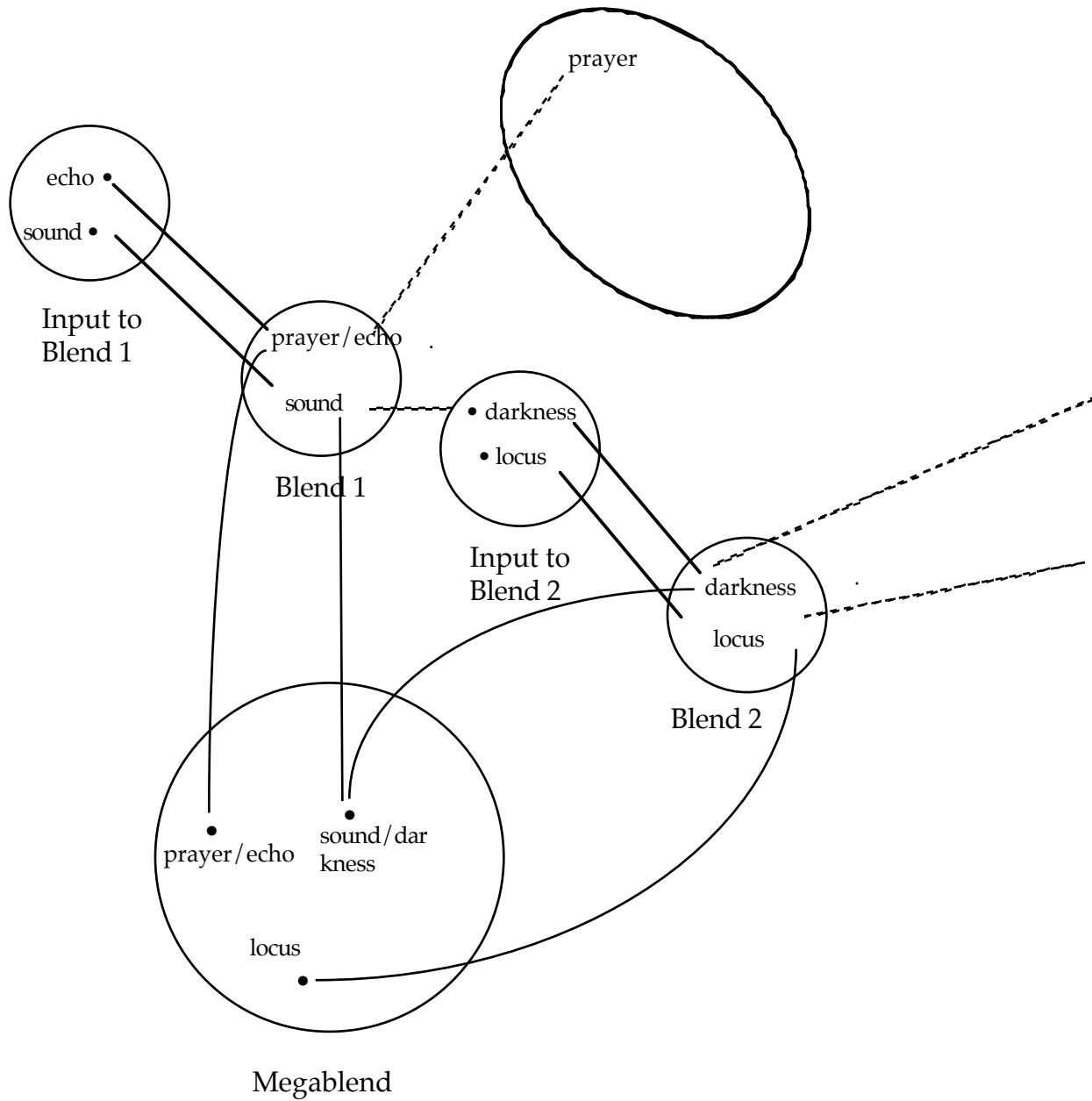


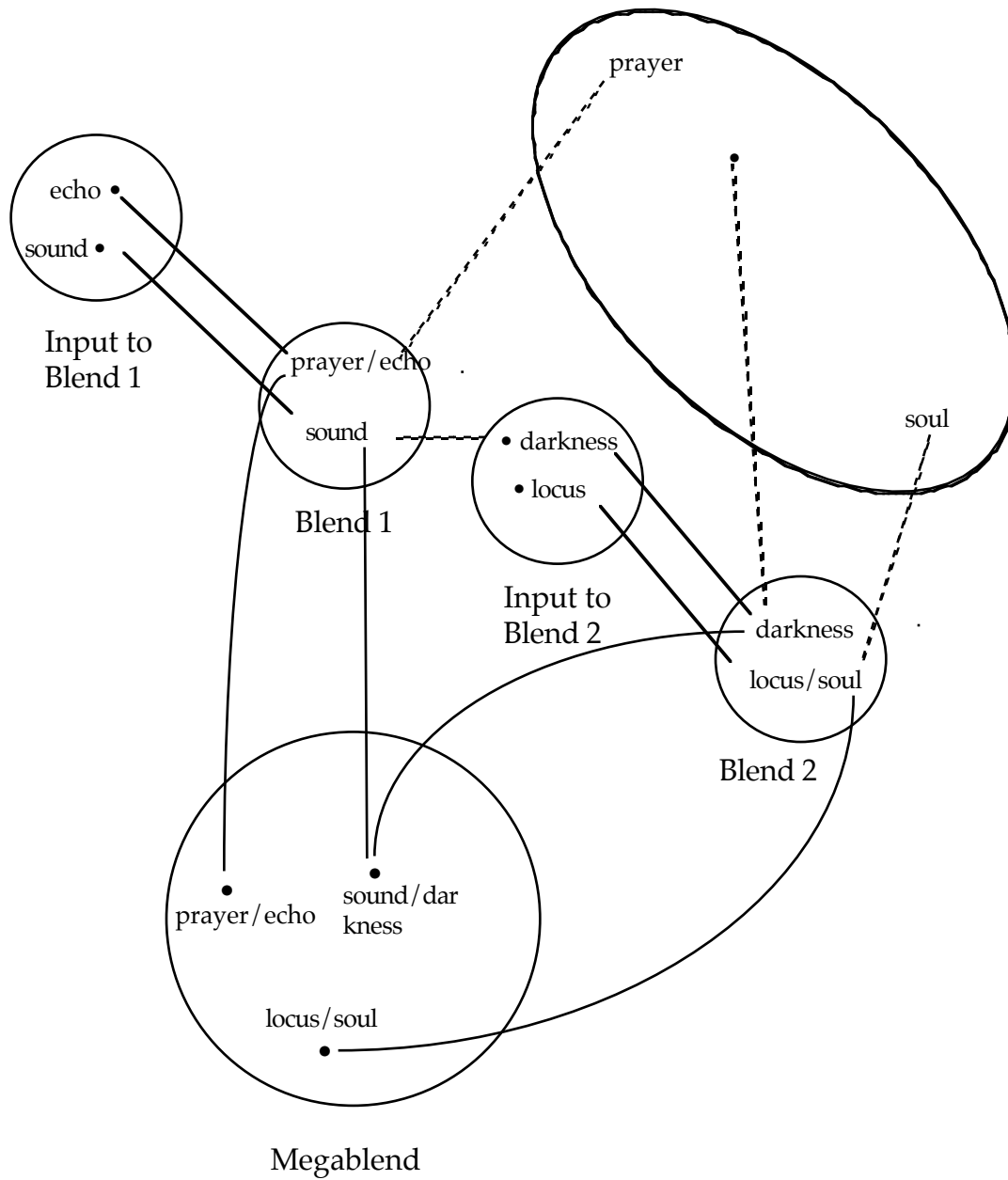












4. Continuity of principles of blending throughout human thought and action.

- Private thought
- Public doings (Balinese cock fight)
- Dreams
- Political argument
- Rational choice
- Counterfactual thought
- Construction of personal identity
- Story and parable
- Music
- Divinity
- Mathematics
- Learning of actions and concepts
- Art, Science, Religion, Advanced Tool Use, Dress, Architecture, Language . . .

5. Hypothesis about the evolution of the species

Advanced blending ability (in particular, ability to do double-scope conceptual integration) is the cognitive development that made human singularities possible: art, science, religion, advanced tool use, grammar, language, symbolic use of material anchors, . . . (*TWWT*, chapter 9 et passim). No one of them led to the others. On the contrary, blending led to all of them, and they support each other's development.

It is an open question how much and what kind of social communicative and demographic support might have been needed to make that cognitive ability fully productive.

6. Many antecedents and precursors:

E.g., Aristotle:

“The address of Gorgias to the swallow, when she had let her droppings fall on him as she flew overhead, is in the best tragic manner. He said, ‘Nay, shame, O Philomela.’ Considering her as a bird, you could not call her act shameful; considering her as a girl, you could; and so it was a good gibe to address her as what she was once and not as what she is.” —*Rhetoric*, book 3, 1406b.

7. Scientific confirmation and challenge

Cognitive fluidity.

Bisociation of matrices.

Collage theory.

Analogy theory.

Creativity theorists.

Semioticians.

Literary critics.

Philologists.

Art critics.

Linguists.

Anthropologists

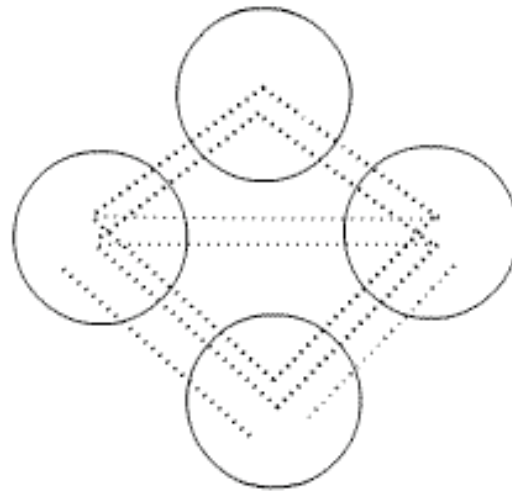
8. Work can be done anywhere in the integration network, anytime.

From our handout at the 1994 conference on CSDL:

“During blending, conceptual work may be required at any site in the conceptual array. Spaces, domains, and frames can proliferate and be modified. Blending can be applied successively during that proliferation.”

8. Work can be done anywhere in the integration network, anytime.

8. Work can be done anywhere in the integration network, anytime.



9. Blends can recruit from more stable structures. They can themselves become stable and widely-shared.

From our handout at the 1994 conference on CSDL:

“Dynamically, input spaces and blends under construction recruit structure from more stable, elaborate, and conventional conceptual structures that may have conventional connections of various sorts.”

10. Blending networks create emergent meaning. *But the emergence is not only in the blend. Emergence runs throughout the entire network.*

**There is a system to the
operation of blending.**

Blending Research in the Great Scheme of Things

Blending plays a crucial role in everything we tend to view as distinctly human, and no analysis of higher capacities will be adequate if it leaves blending out of account. A theory of language, art, mathematics, science, discourse, gesture, religion, spirituality, learning, phylogenetics, human neurobiology, cultural evolution, etc. etc. that leaves blending out of account is fundamentally flawed.

Blending Research in the Great Scheme

But in the great scheme of things, the role of blending is still *very small*. Socially, and consciously, and through language, blending phenomena are phenomena we are very aware of, and use for social distinctions, technological advances, aesthetic experience, spirituality, and so on. So we notice them. Billions of years precede the recent evolution of double-scope blending, and elaborate social and demographic work is needed to exploit the capacity fully. Yet it is easy to make the mistake of discounting all of that, through the **“Last is Everything” Fallacy** (metonymy on the last thing instead of something else).

Blending Research in the Great Scheme

In the great scheme of things, blending is just one of very many important phenomena. Blending research is not a reductionist program. There is no attempt to argue that everything is a variety of blending, or that a particular mental or social achievement is explained by blending “tout court.” Quite the contrary.

Blending Research in the Great Scheme of Things

Much of blending research will concern not so much the principles of the operation of blending but instead how blending sits inside the “Great Scheme of Things,” how it interacts with everything else.

The Future of Blending Research

Here are some obvious areas:

Learning. *TWWT*, chapter 18.

Bob Williams's dissertation.

Linguistics. Synchronic, diachronic.

Mandelblit, Sweetser, Israel, Cienki, etc.

Religious Thought.

Sorensen, Sweetser, Slingerland,

Psychoanalysis. Casonato.

Art, Rhetoric, Poetics, Narrative, Parable.

Evolution of Scientific Concept.

Núñez and Lakoff.

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Blending is Basic



Doing Cognitive Science



Truth, Science,
Conception, Networks,
Compression, Story



Words \neq Good Theories

Men



Billie Berg 1941-1942

Women



We are lucky we're not
chickens

“If we were all chickens, you, William, would be about Elizabeth’s age, you, Peyton, would be about Dad’s age, and me, Dad, and Mom would all be dead of old age. We are all five alive. We are lucky we are not chickens.”

Racine, Phèdre

PHEGRE

Oui, Prince, je languis, je brûle pour Thésée.
Je l'aime, non point tel que l'ont vu les enfers,
Volage adorateur de mille objets divers,
Qui va du Dieu des morts déshonorer la couche ;
Mais fidèle, mais fier, et même un peu farouche,
Charmant, jeune, traînant tous les coeurs après soi,
Tel qu'on dépeint nos Dieux, ou tel que je vous vois.
Il avait votre port, vos yeux, votre langage,
Cette noble pudeur colorait son visage,
Lorsque de notre Crète il traversa les flots,
Digne sujet des vœux des filles de Minos.
Que faisiez-vous alors? Pourquoi sans Hyppolyte
Des héros de la Grèce assembla-t-il l'élite?
Pourquoi, trop jeune encor, ne pûtes-vous alors
Entrer dans le vaisseau qui le mit sur nos bords?
Par vous aurait péri le monstre de la Crète,
Malgré tous les détours de sa vaste retraite.
Pour en développer l'embarras incertain,
Ma soeur du fil fatal eût armé votre main.
Mais non, dans ce dessein **je l'aurais devancée :**
L'amour m'en eût d'abord inspiré la pensée.

C'est moi, Prince, c'est moi dont l'utile secours
Vous eût du Labyrinthe enseigné les détours.
Que de soins m'eût coûté cette tête charmante!
Un fil n'eût point assez rassuré **votre amante**.
Compagne du péril qu'il vous fallait chercher,
Moi-même devant vous j'aurais voulu marcher ;
Et Phèdre, au Labyrinthe avec vous descendue,
Se serait avec vous retrouvée ou perdue.

HIPPOLYTE

Dieux! qu'est-ce que j'entends? Madame, oubliez-vous
Que Thésée est mon père et qu'il est votre époux?

PHEDRE

Et sur quoi jugez-vous que j'en perds la mémoire,
Prince? Aurais-je perdu tout le soin de ma gloire ;?

HIPPOLYTE

Madame, pardonnez. J'avoue, en rougissant,
Que j'accusais à tort un discours innocent.
Ma honte ne peut plus soutenir votre vue ;
Et je vais...

PHEDRE

Ah! cruel, tu m'as trop entendue.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Mapping between elements of the two stories. Blending two stories always involves at least a provisional mapping between them. The mapping typically involves connections of identity, analogy, similarity, causality, change, time, intentionality, space, role, part-whole, or representation. In *Phèdre*, the mapping involves analogy and time. There is a causal link as well, because Phèdre's existence in Theseus's household is a result of his earlier trip to Crete and his vanquishing of the minotaur.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Selective projection. Different elements of the stories are projected to the blended story. In *Phèdre*, we take from the historical story of the myth the scene of the labyrinth, the minotaur, and the roles of both the hero and the daughter of Minos who helps him, but now we bring Hippolytus and Phèdre in from the other story as the values of those roles. In the story of the minotaur, the daughter of Minos who helps Theseus is Ariadne, not Phèdre.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Emergent structure. In the blended story of Phèdre and Hippolytus as lovers, we have astonishing emergent structure. Now it is Hippolytus who conquers the minotaur, and it is Phèdre who helps him. Moreover, Phèdre goes into the labyrinth because of her great love. Emergent structure in integrating stories comes from three sources: composition, completion, and elaboration. Composition is putting together elements from different conceptual arrays. Completion is the filling in of partial patterns in the blend. Elaborating the blended story occurs when we develop it according to its principles. In the case of Phèdre, elaboration of the blend leads to a great range of new meaning.

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://markturner.org>

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Mental Packing and Unpacking

Cognitive Science,
Cognitive Linguistics,
and the Study of the
Distinctiveness of Human Beings

Cognitive Science, Cognitive Linguistics,
and the Study of the Distinctiveness of
Human Beings:

Cognitive Science, Cognitive Linguistics,
and the Study of the Distinctiveness of
Human Beings:

Compression and
Decompression:

Cognitive Science, Cognitive Linguistics,
and the Study of the Distinctiveness of
Human Beings:

Compression and
Decompression:

Mental Packing and Unpacking

Packing Achieves Human Scale

“Retrieval” and “Use”
versus “Generation” and “Unpacking”

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“Retrieval” and “Use” versus “Generation” and “Unpacking”

Is the shadow “there”?
It is generated or
implicit in the system,
within context, but not
retrieved or just “used.”



“Retrieval” and “Use” versus “Generation” and “Unpacking”

- Change
- Unification

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Identity & Change from Analogy & Disanalogy

“In a leap year, we add a day to February.”

“*Kick the habit*”

“*Your agent* is waiting for you.”

“The customer is always right.”

“His girlfriend gets younger every year.”

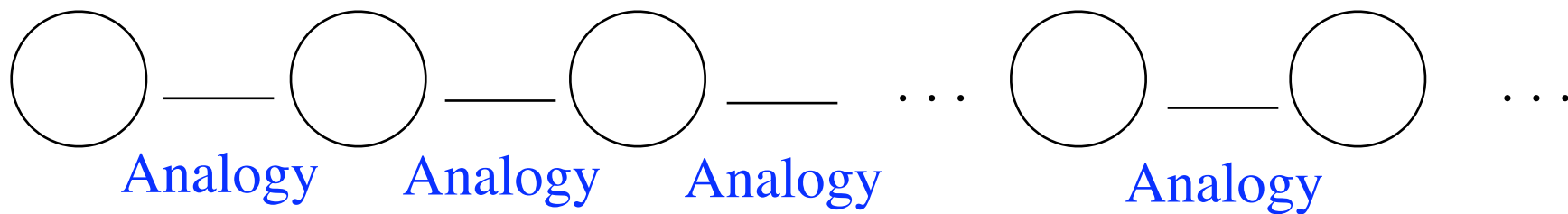
“Make this problem go away.”

“Get your tennis serve back.”

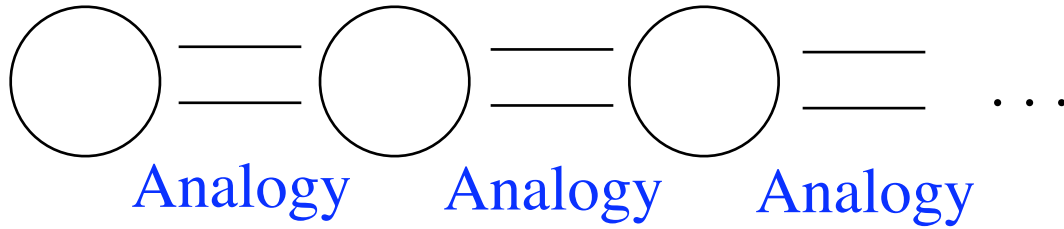
“Your French has disappeared.”

Identity & Change from Analogy & Disanalogy

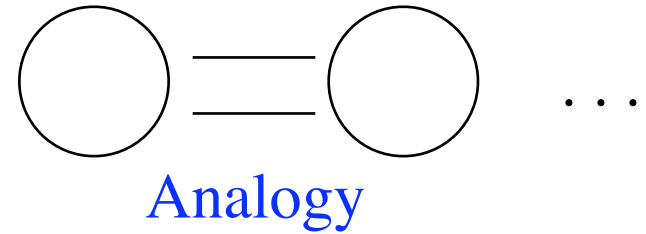
“Make this envelope disappear”



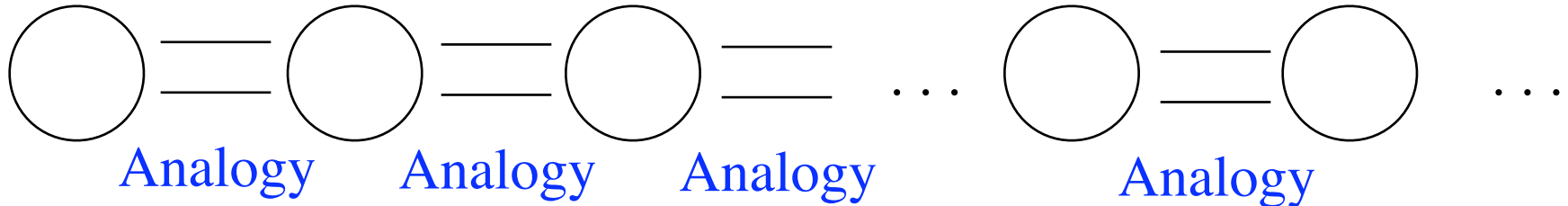
Disanalogy Disanalogy Disanalogy



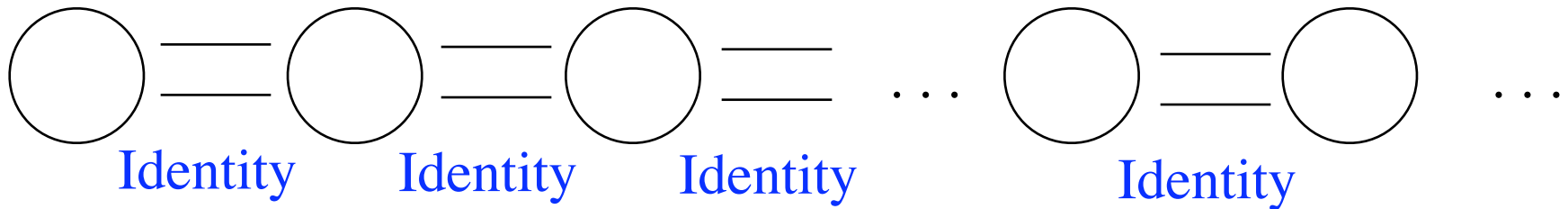
Disanalogy



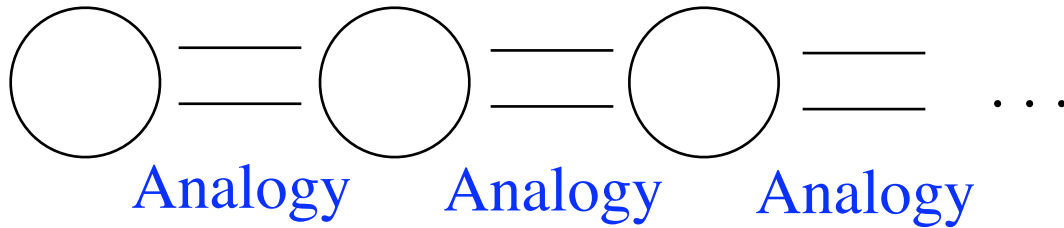
Disanalogy Disanalogy Disanalogy



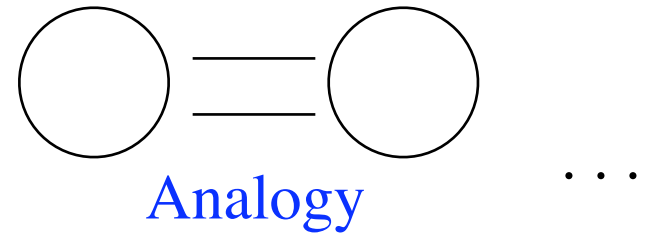
Change Change Change



Disanalogy Disanalogy Disanalogy



Disanalogy

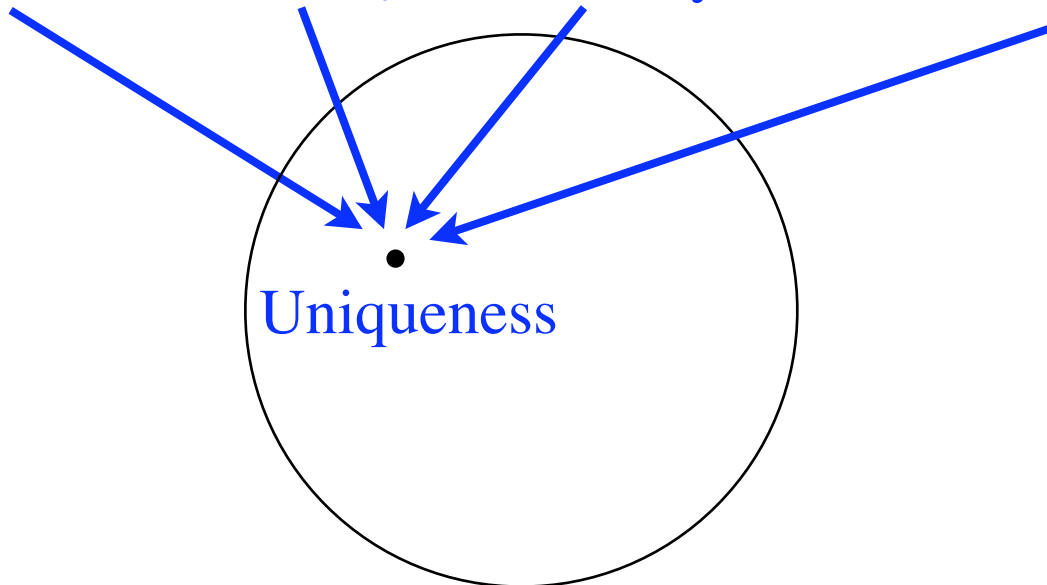
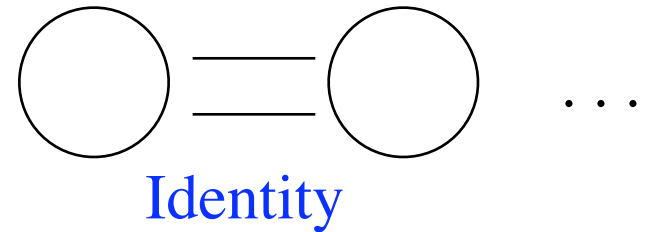
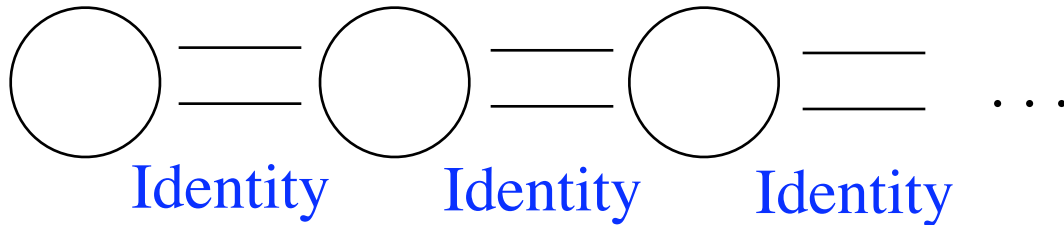


Change

Change

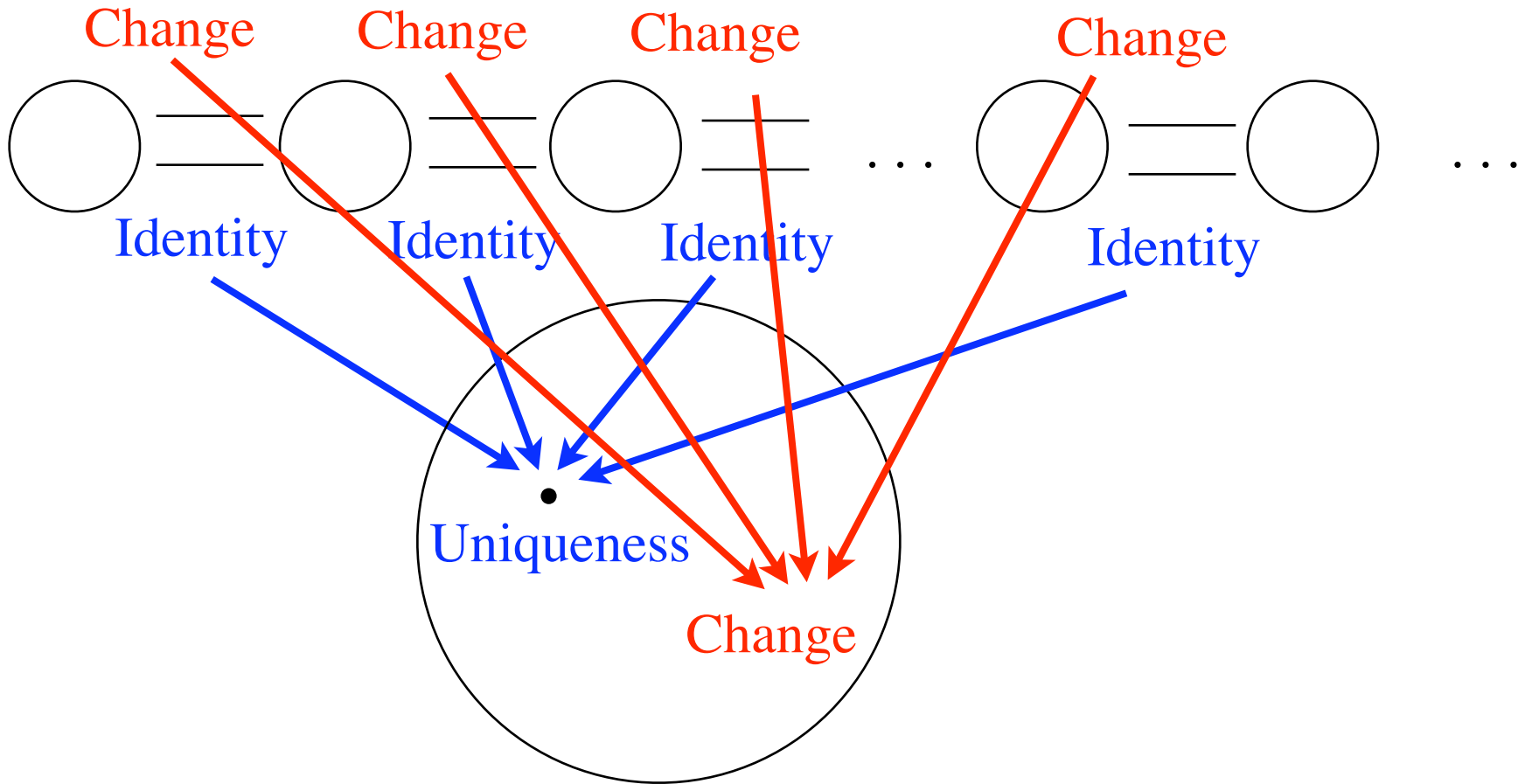
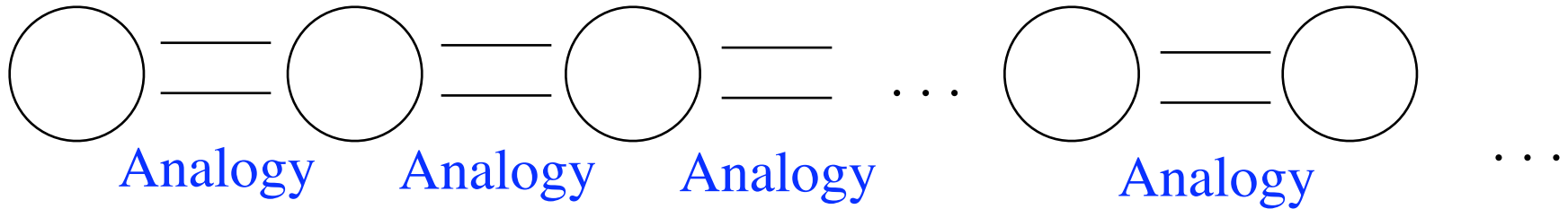
Change

Change



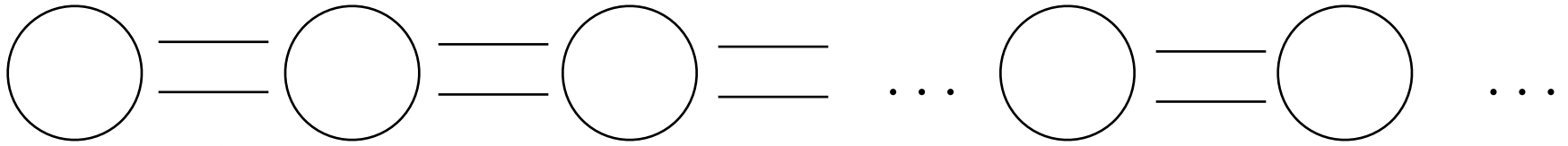
Disanalogy Disanalogy Disanalogy

Disanalogy



Disanalogy Disanalogy Disanalogy

Disanalogy

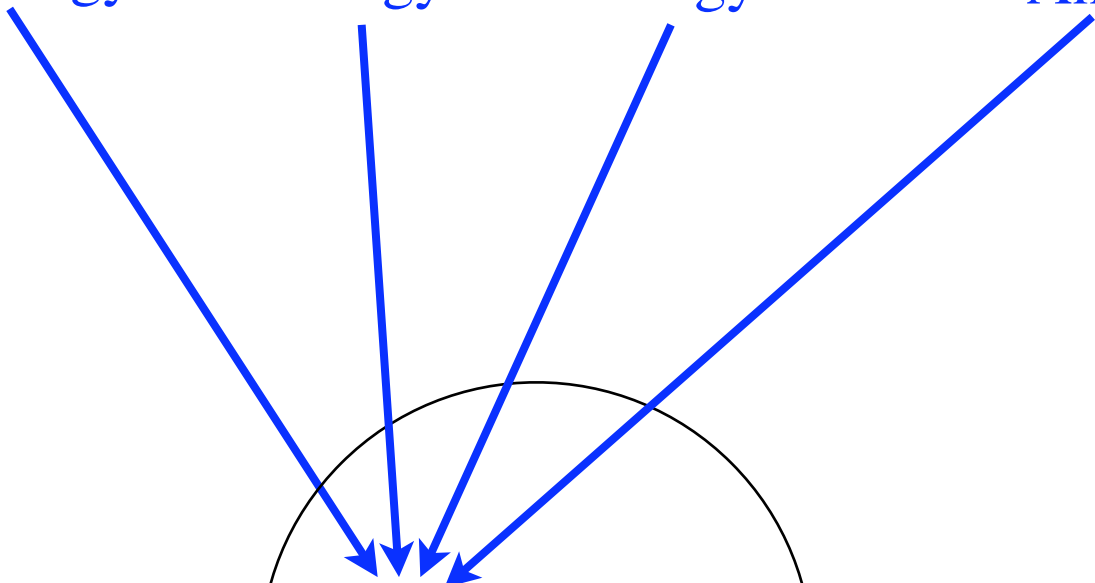
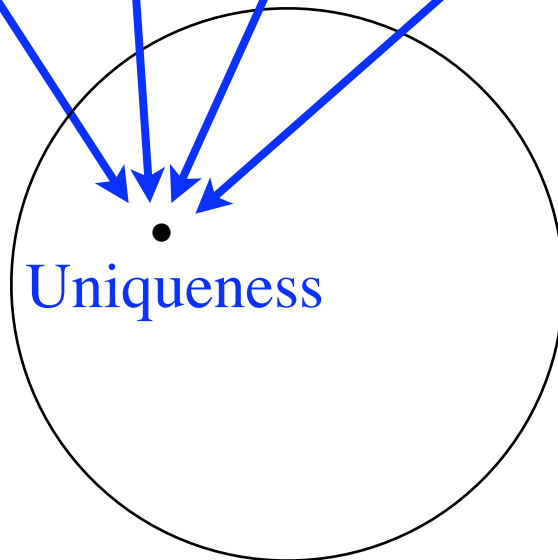


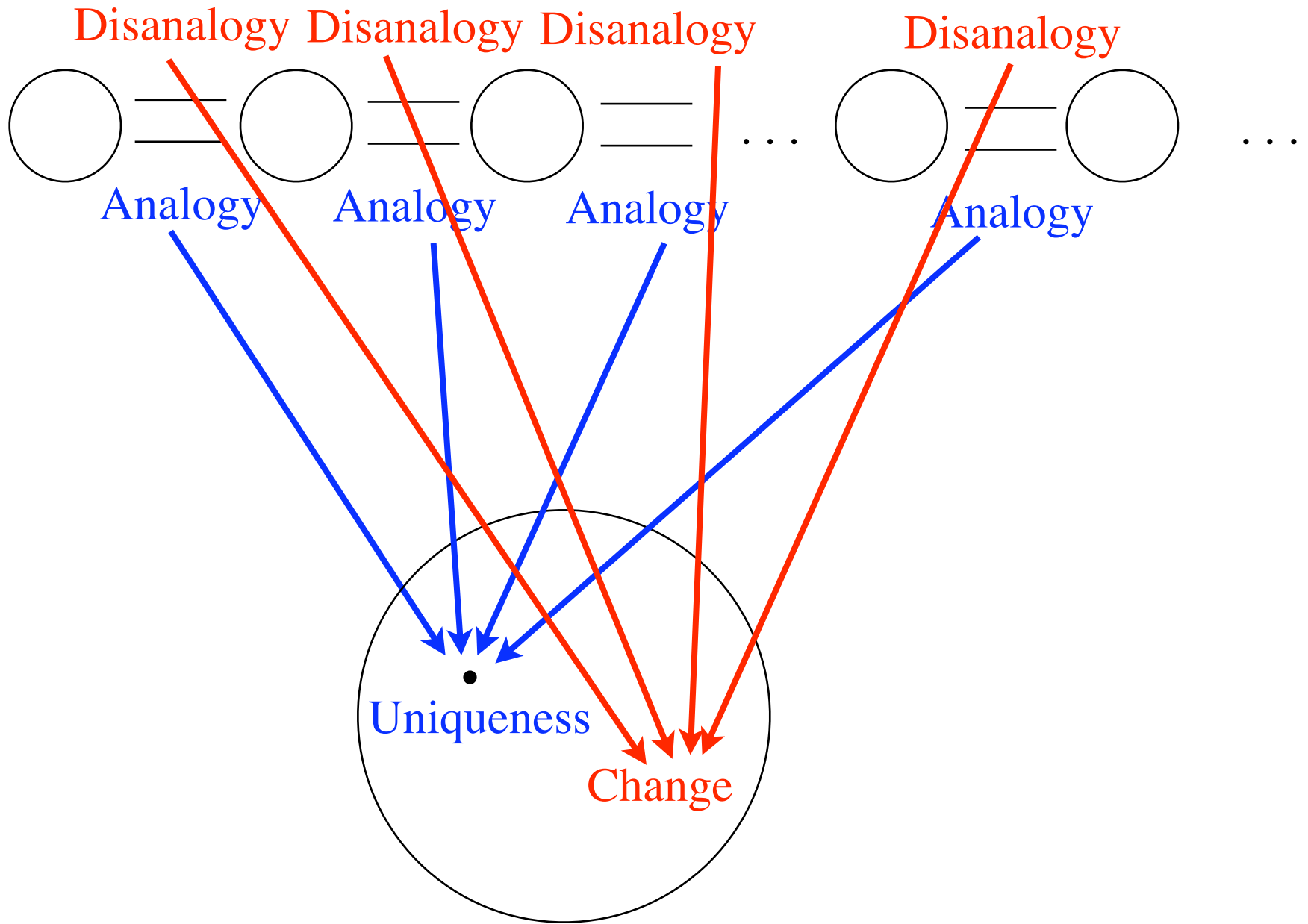
Analogy

Analogy

Analogy

Analogy



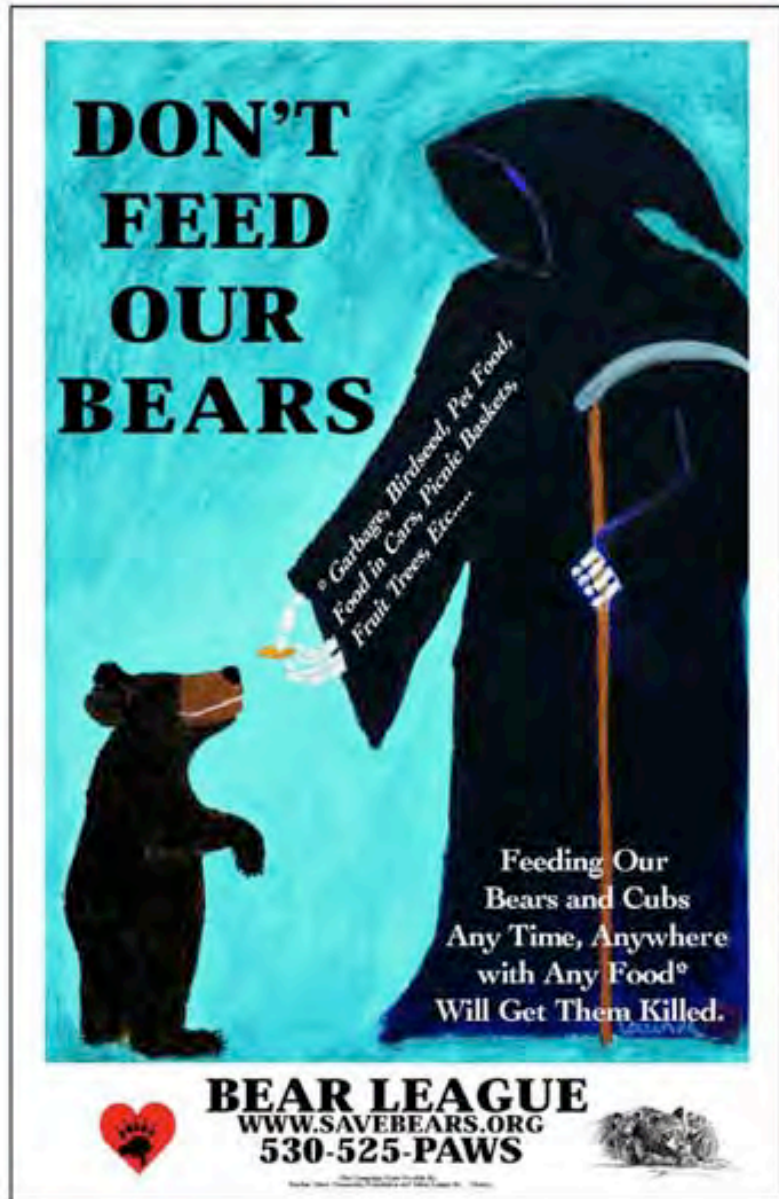


“The cars get three feet bigger when you enter Pacific Heights,” (Sweetser 1997)

“The fences get taller as you move westward across the United States,” (Sweetser 1997)

“The paint gets darker as you move down the wall.” (Sweetser 1997)

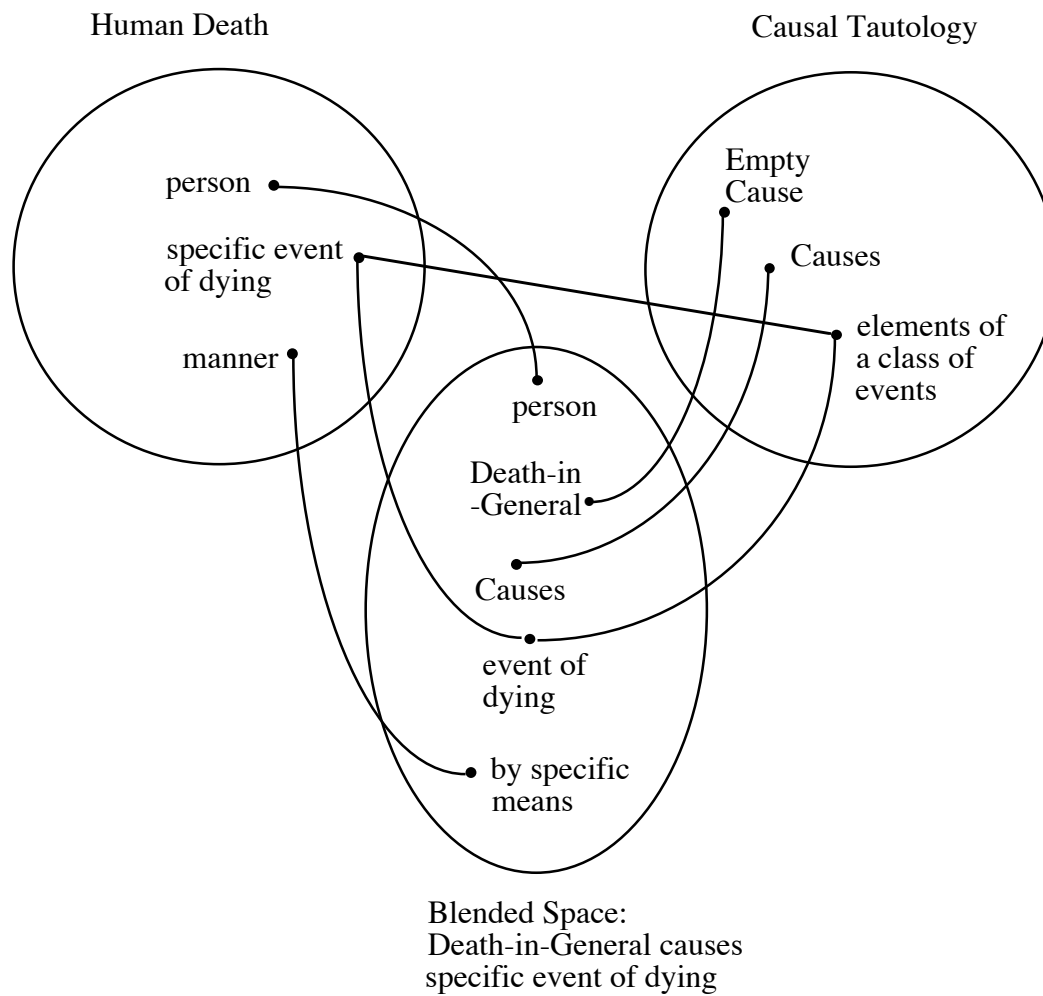
Packing to Human Scale Through Blending

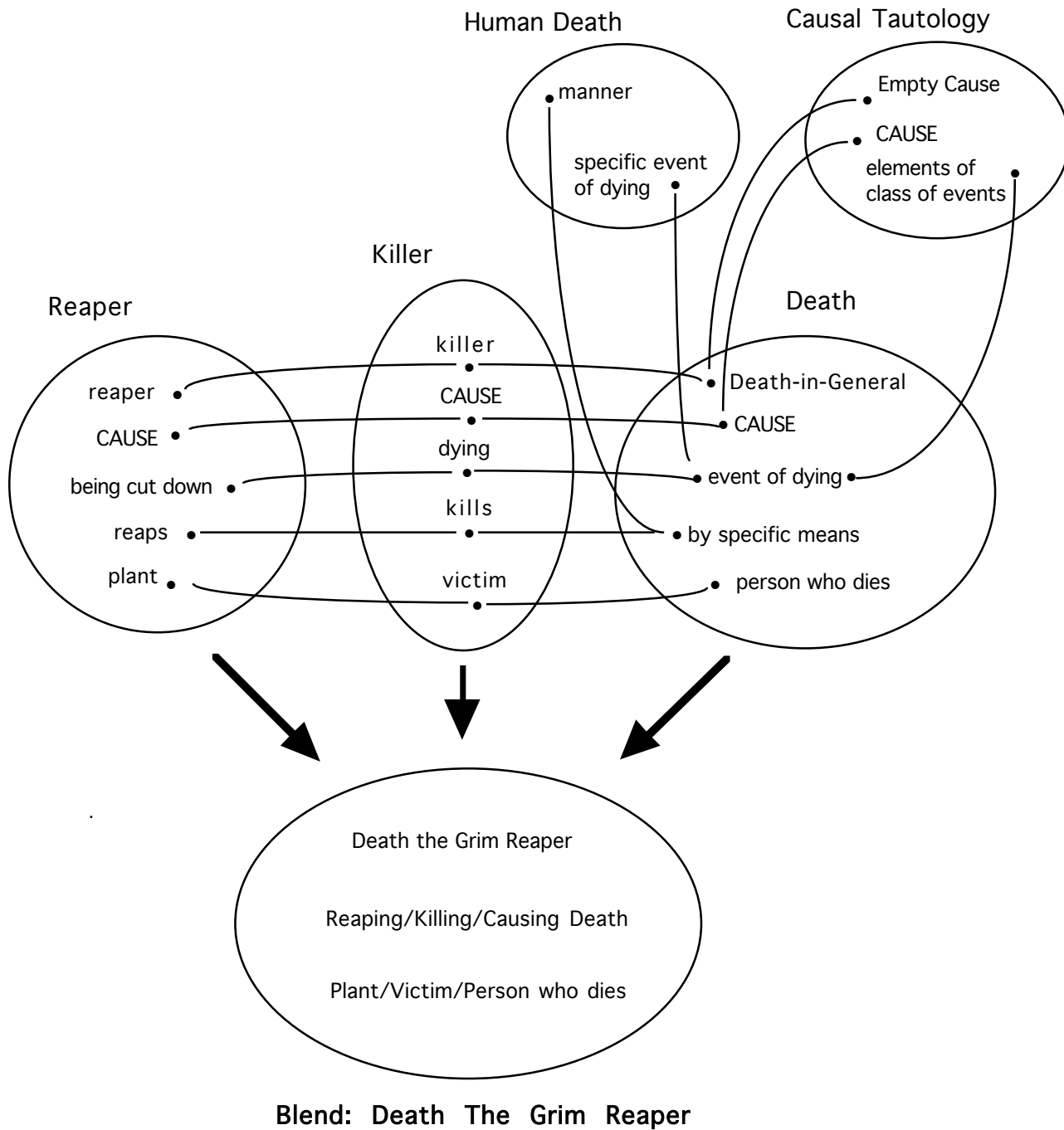


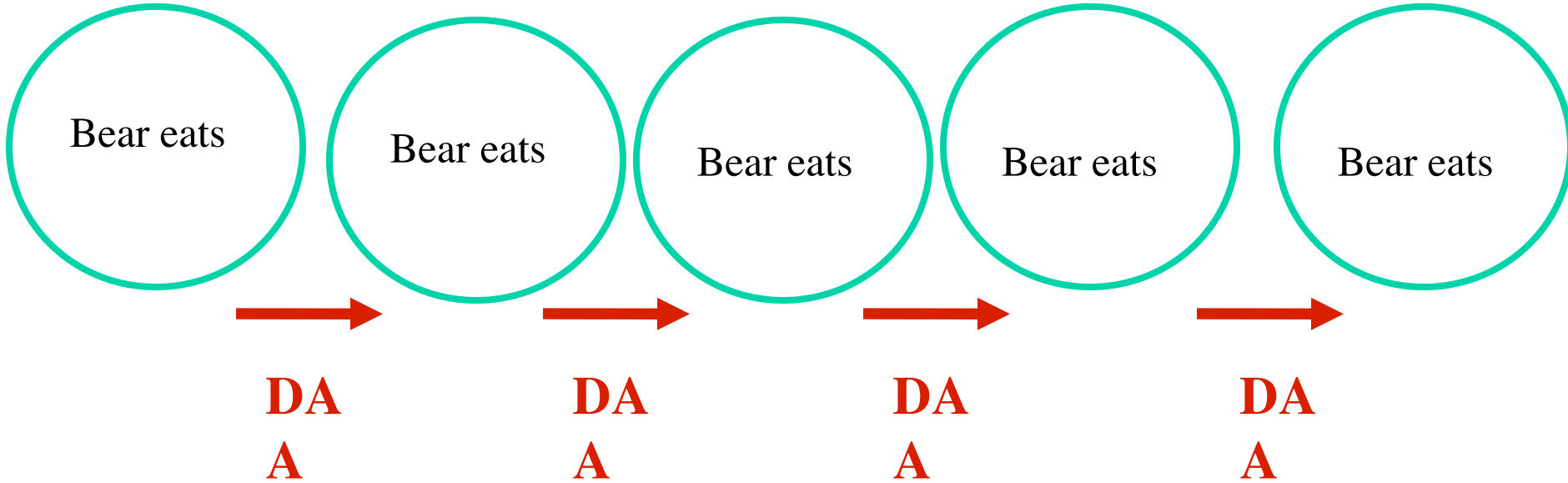
“A fed bear is a dead bear”

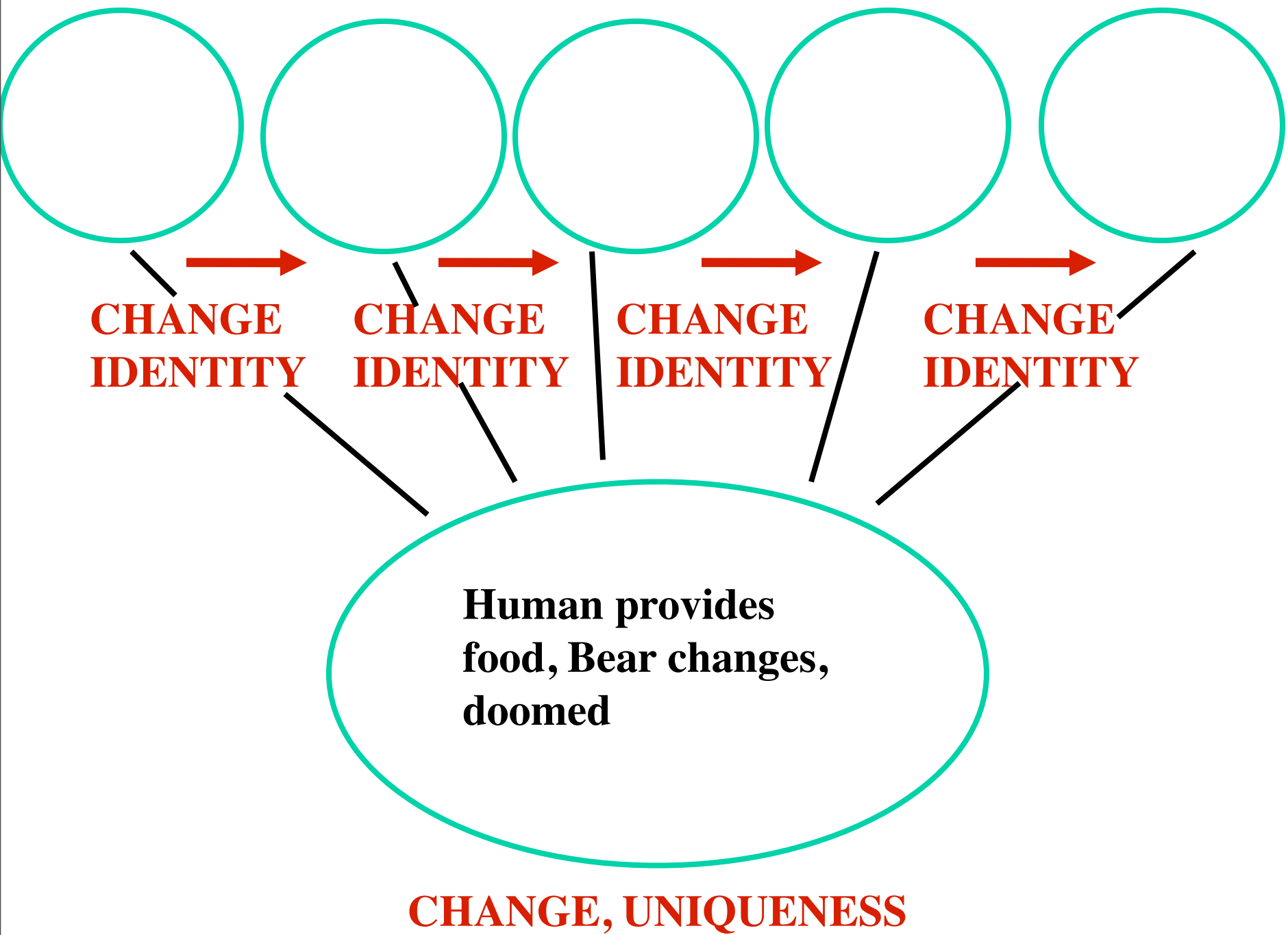
**Garbage, Birdseed, Pet Food,
Food in Cars, Picnic Baskets,
Fruit Trees, Etc . . .**

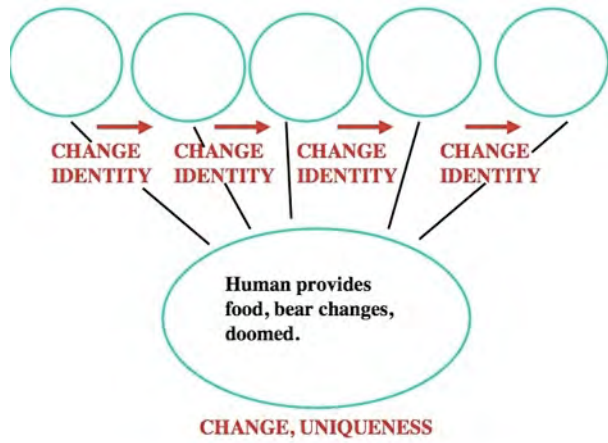
**Feeding Our Bears and Cubs Any
Time, Anywhere, with Any Food
Will Get Them Killed.**









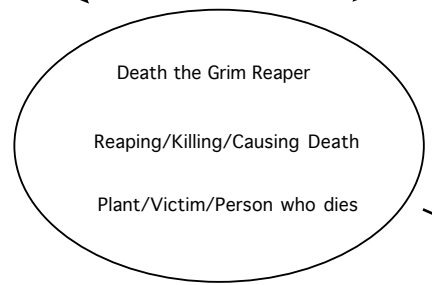
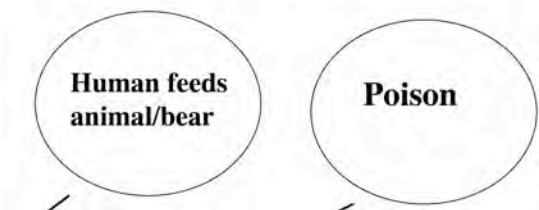
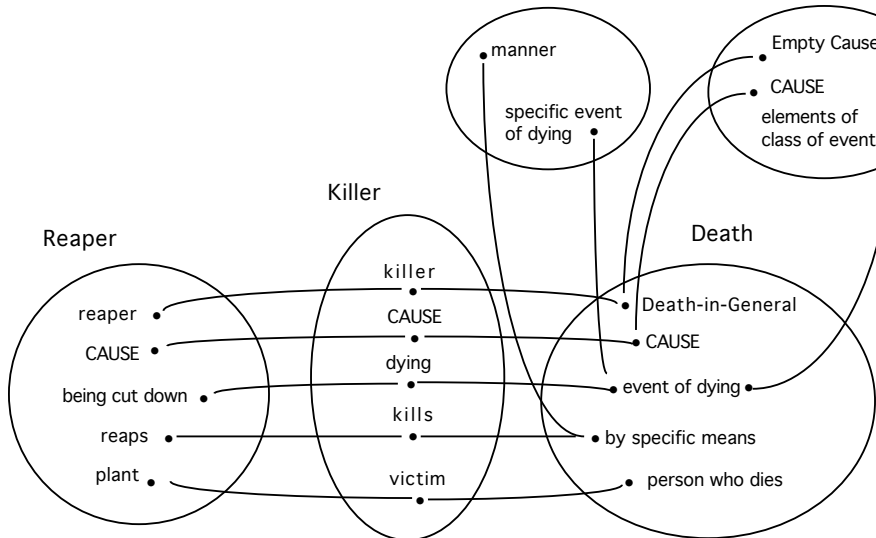
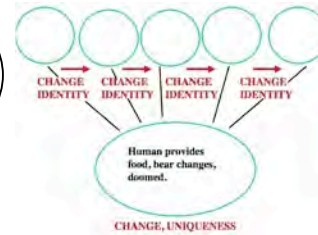


**Human feeds
animal/bear**

Poison

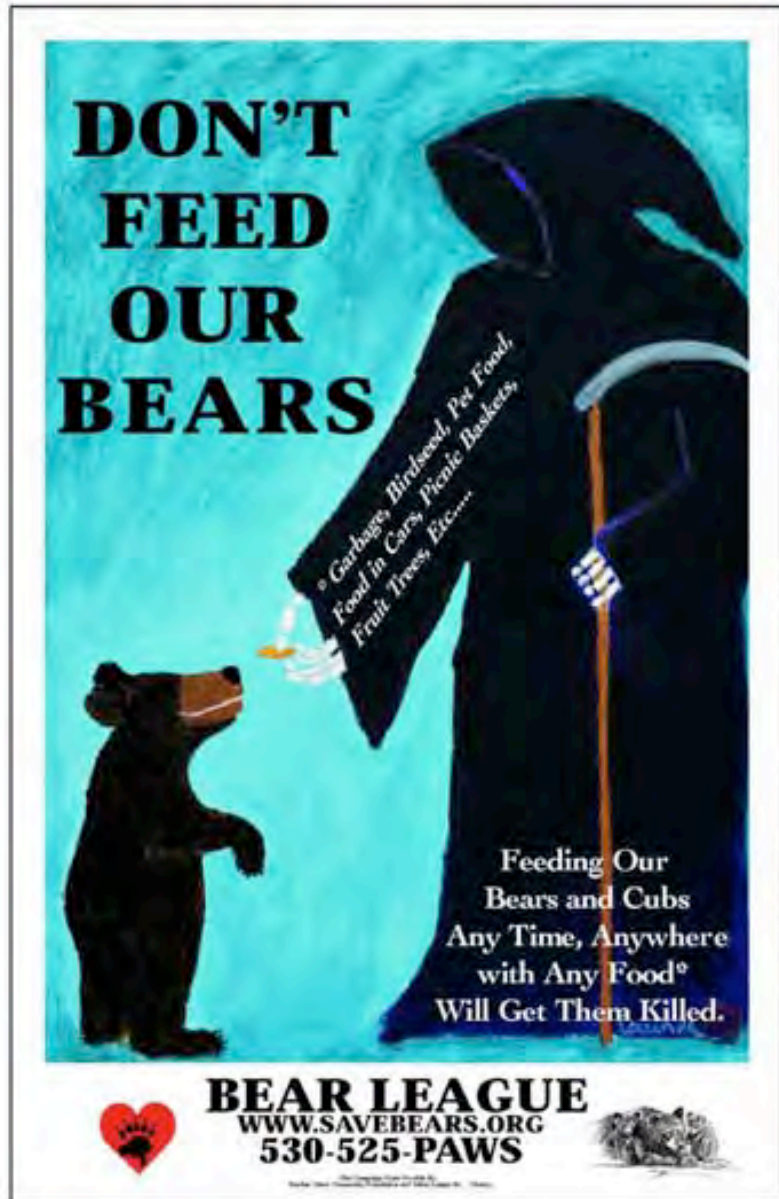
**Person/We
Feeds/Kills
Bear/Bears**

Human Death Causal Tautology



Blend: Death The Grim Reaper





“A fed bear is a dead bear”

**Garbage, Birdseed, Pet Food,
Food in Cars, Picnic Baskets,
Fruit Trees, Etc . . .**

**Feeding Our Bears and Cubs Any
Time, Anywhere, with Any Food
Will Get Them Killed.**

The Cognitive Science of Rhyme
Rhyme is a compression scheme

“A fed bear is a dead bear”

Form and Meaning

**"At what altitude do the deer
turn into elk?"**

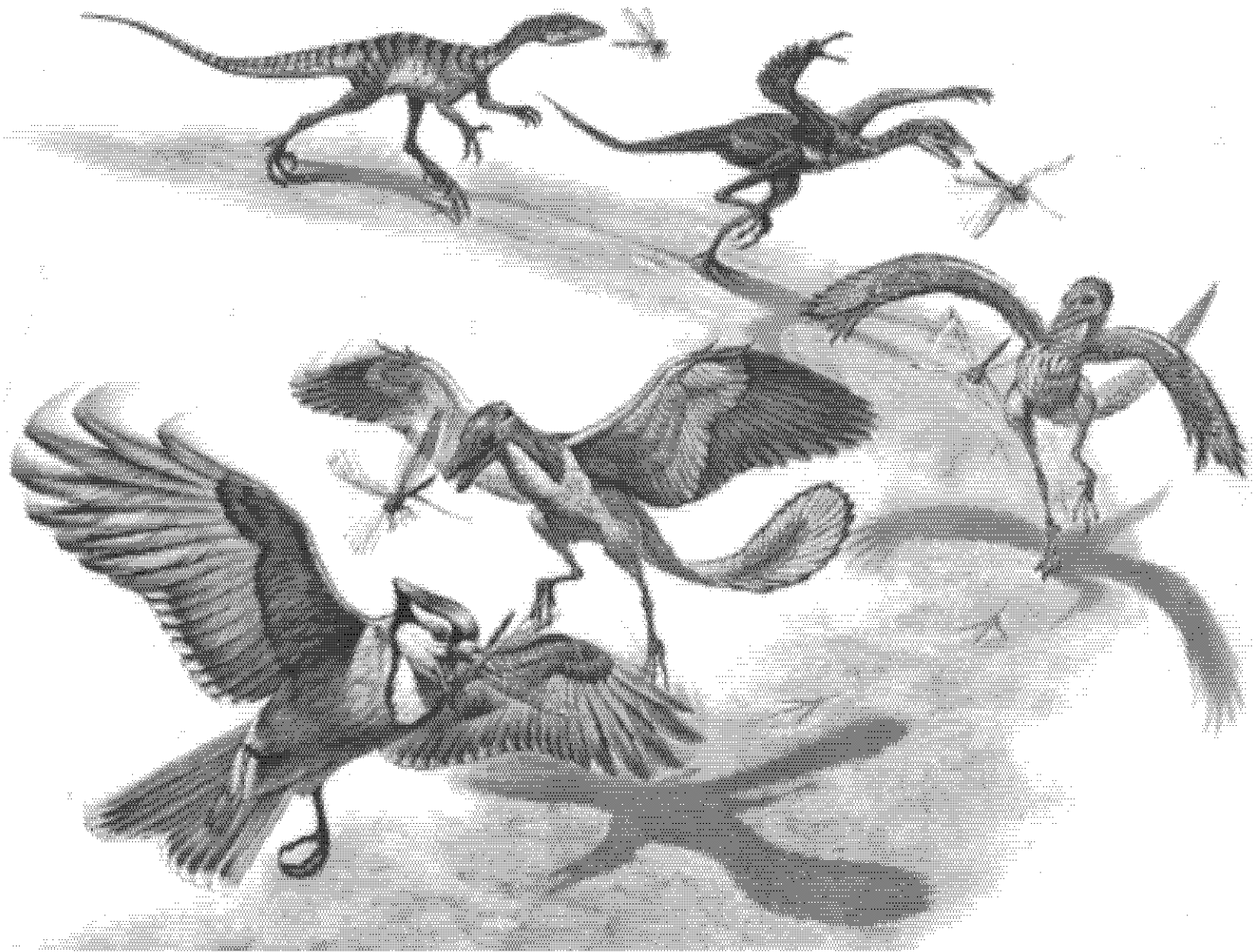
**"The new theory is that dinosaurs
turned into birds."**

**"My tax bill gets bigger every
year." (Fauconnier)**

**"The President changes every four
years" (Fauconnier 1994 [1985])**

Identity & Change from Analogy & Disanalogy

- Dinosaurs evolved into birds
- Dinosaurs turned into birds
- Dinosaurs became birds





DA
A

DA
A

DA
A

DA
A



DA

DA

DA

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A

A

A

A



**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**



**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**



CHANGE, UNIQUENESS, INTENTIONALITY

Packing to Human Scale Through Blending



Chappatte, Patrick. 2008. "World Food Crisis," editorial cartoon, *The International Herald Tribune*, 11 April 2008.

INPUT 1

NP

agent

a

V

causal action

e

means

manner

motion

NP

object

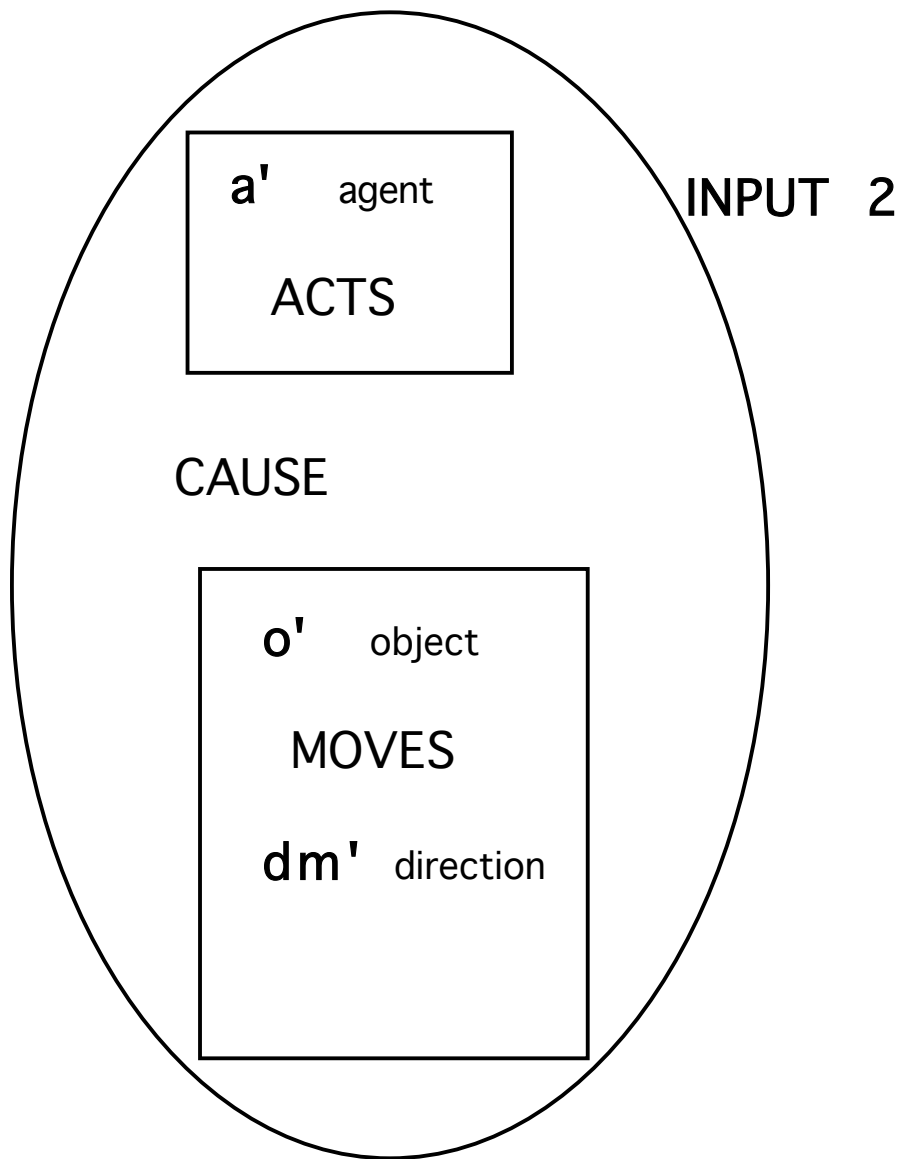
o

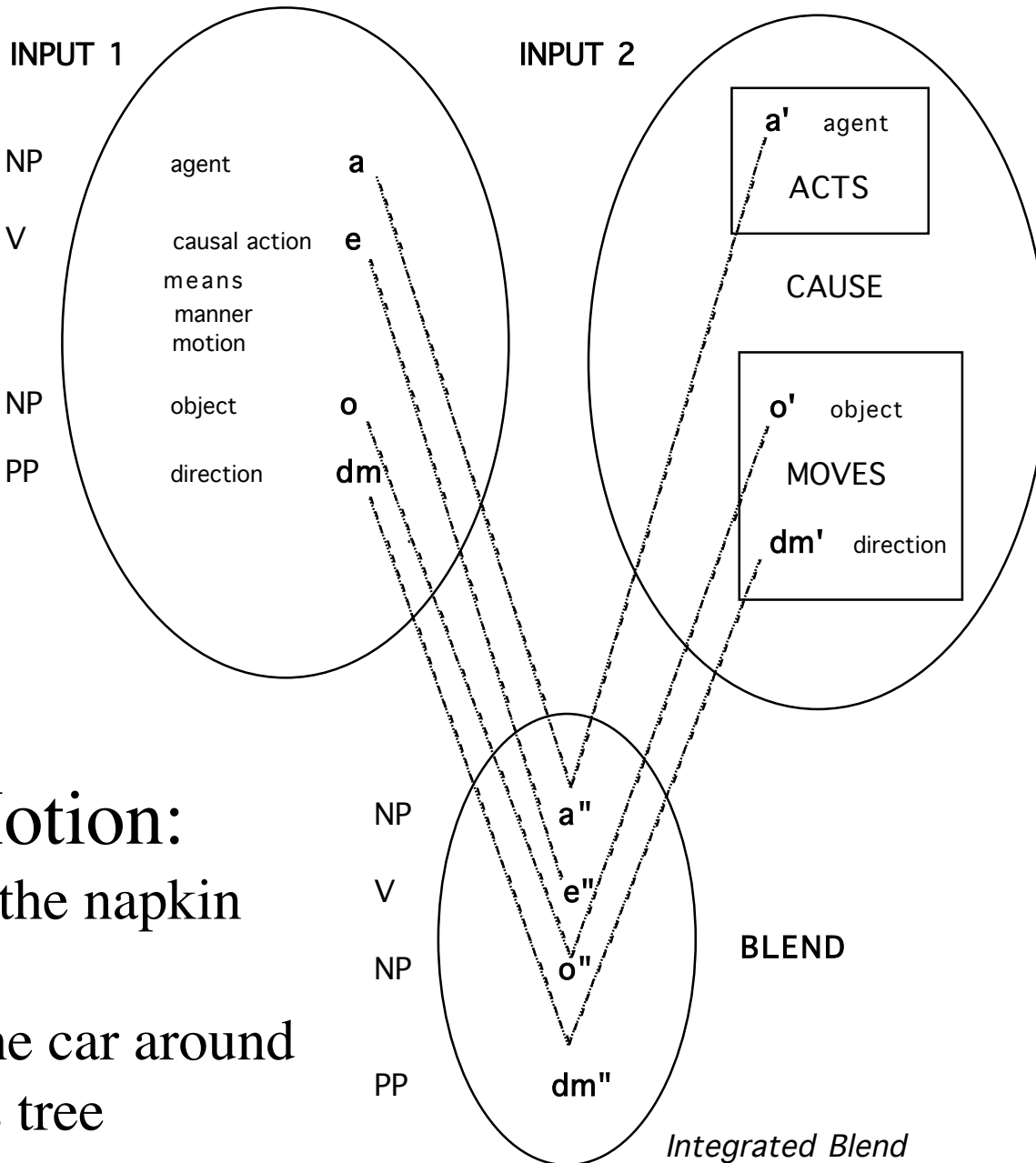
PP

direction

dm

Caused-Motion:



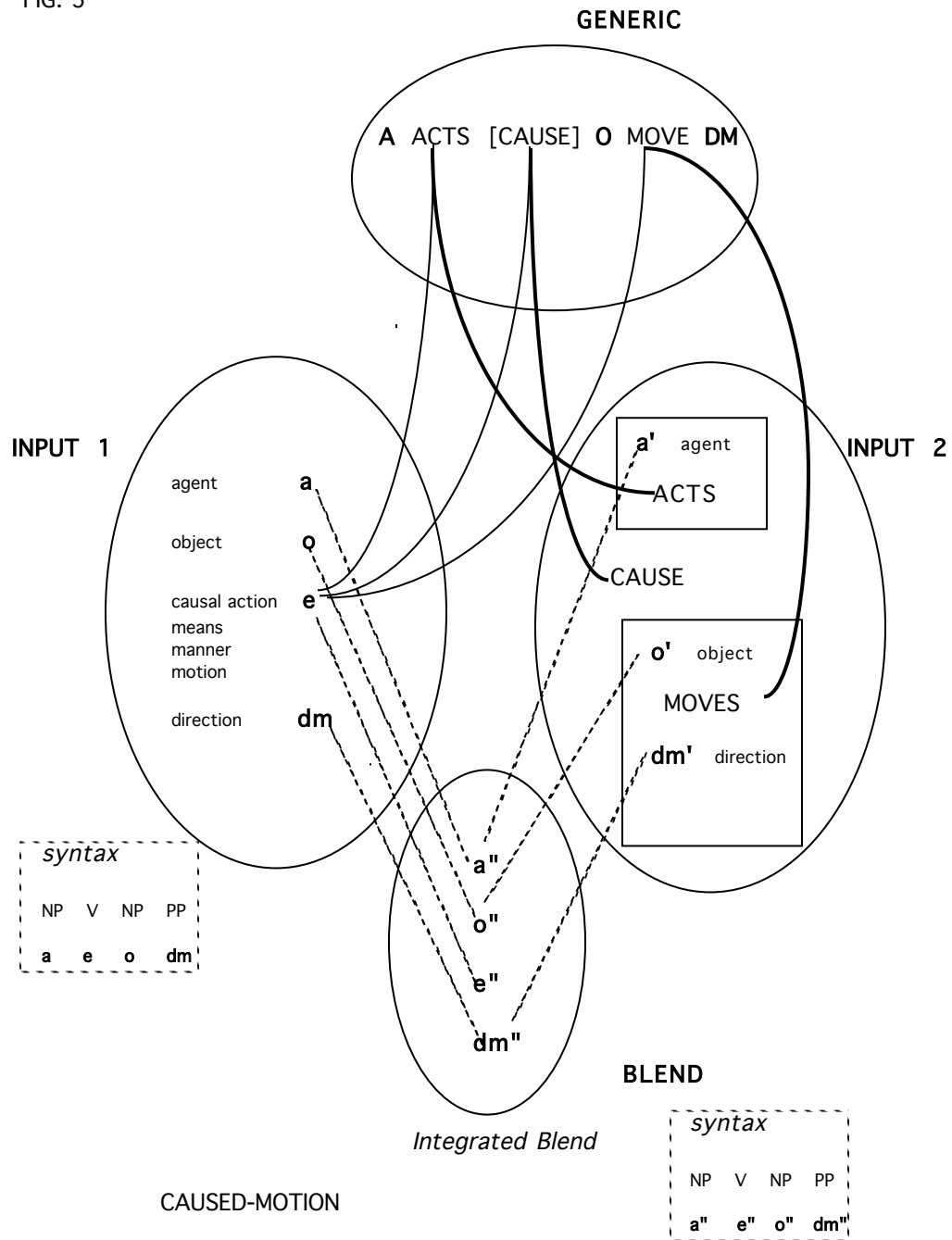


Caused-Motion:

Paul sneezed the napkin
off the table.

Junior sped the car around
the Christmas tree

FIG. 5



Integrated Blend

CAUSED-MOTION

syntax

NP	V	NP	PP
a	e	o	dm

BLEND

syntax

NP	V	NP	PP
a''	e''	o''	dm''

"I walked him into the room."

"He sneezed the napkin off the table."

"I pointed him toward the door."

"They teased him out of his senses."

"I will talk you through the procedure."

"I read him to sleep."

"They prayed the two boys home."

"I muscled the box into place."

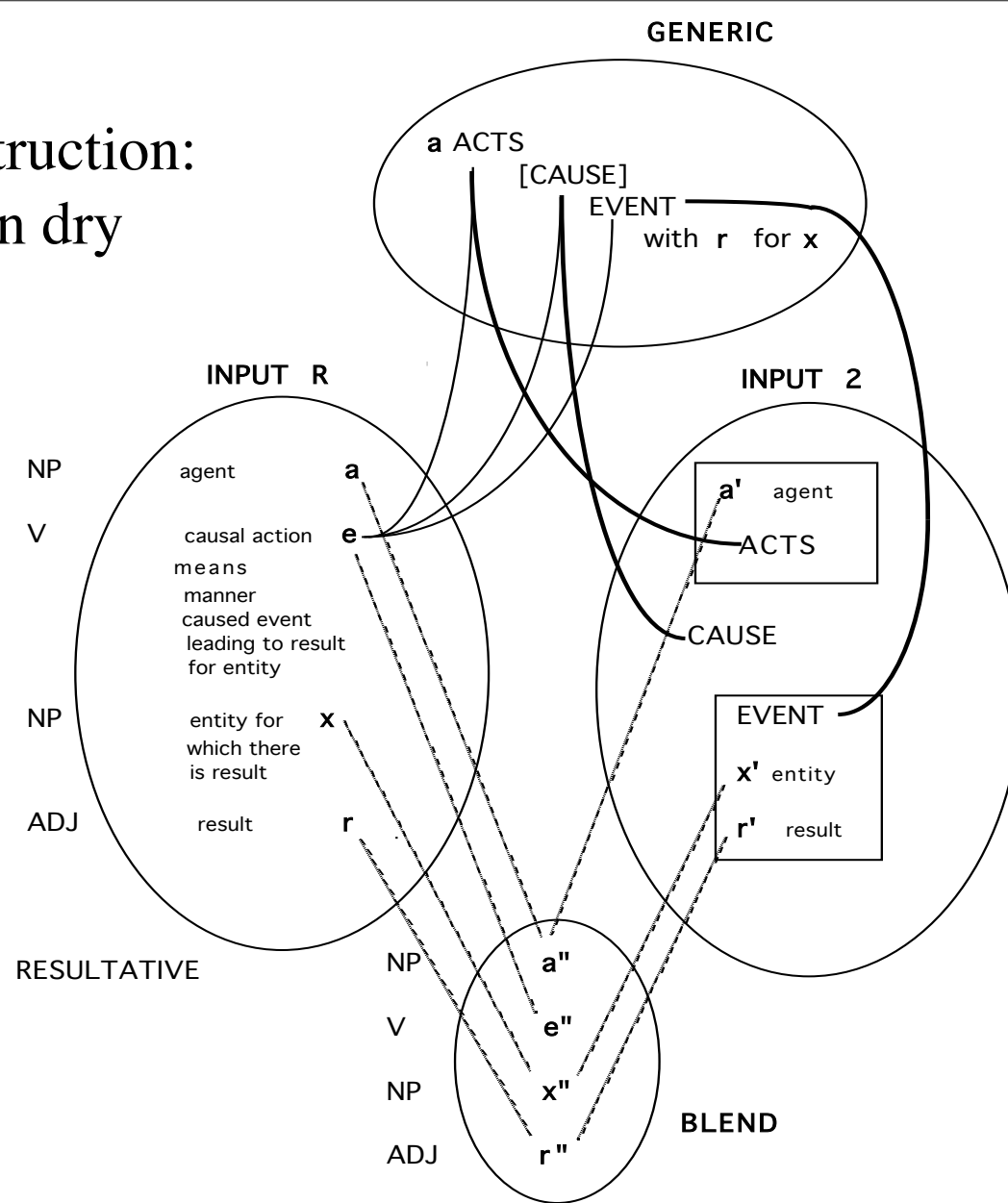
"Hunk choked the life out of him."

"He floated the boat to me."

But also: "We blocked him from the door."

Resultative Construction:

I boiled the pan dry



Grammatical Constructions

I boiled the pan dry. In the diffuse input, the causal chain runs from forgetting to the invariant position of the burner knob, to the flow of gas, to the flame, to the temperature of the pan, to the temperature of the water, to the level of the water, to the dryness of the pan. The agent performs no direct or indirect action on the pan at all. But in the blend, the compressed structure associated with the grammatical construction is projected together with some selected participants from the diffuse chain of events in the diffuse input. And so, in the blend, the agent is now acting directly on the pan. Moreover, although the boiling of the water is an event and its cause was something the agent did or did not do, there is cause-effect compression in the blend so that *boiling* is an action the agent performed. He even performed it on the pan.

Resultative:

Catherine painted the wall white.

She kissed him unconscious.

Last night's meal made me sick.

He hammered it flat.

I boiled the pan dry.

The earthquake shook the building apart.

Roman imperialism made Latin universal.

谢谢

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turner@case.edu

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Words do not mean.

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Words do not mean.







Words do not have meaning.

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-  **Words do not mean.**
-  **Words do not have meaning.**
-  **Expressions do not mean or have meaning.**

第七届中国认知语言学国际论坛

-  **Words do not mean.**
-  **Words do not have meaning.**
-  **Expressions do not mean or have meaning.**
-  **These notions result from mental packing.**

INPUT 1

NP

agent

a

V

causal action

e

means

manner

motion

NP

object

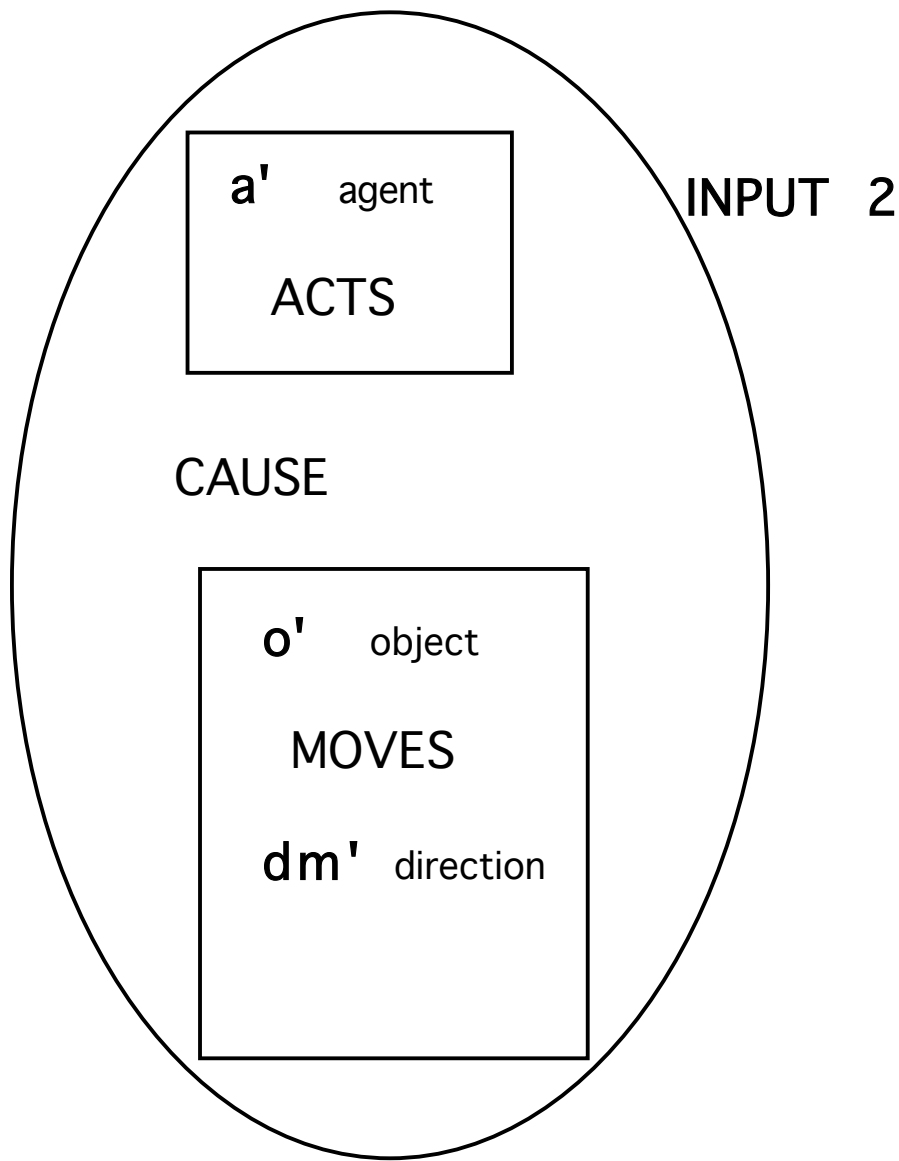
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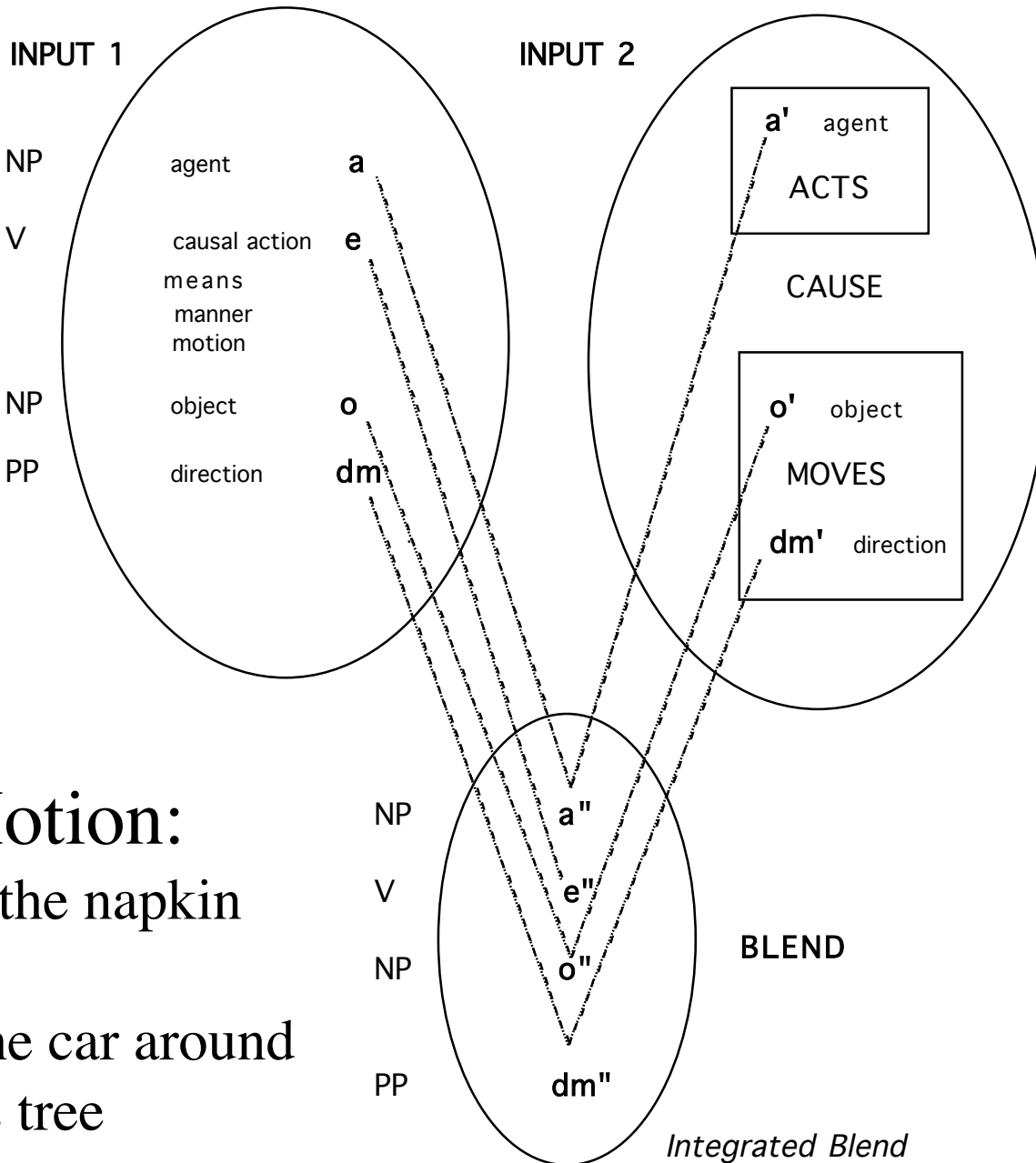
PP

direction

dm

Caused-Motion:



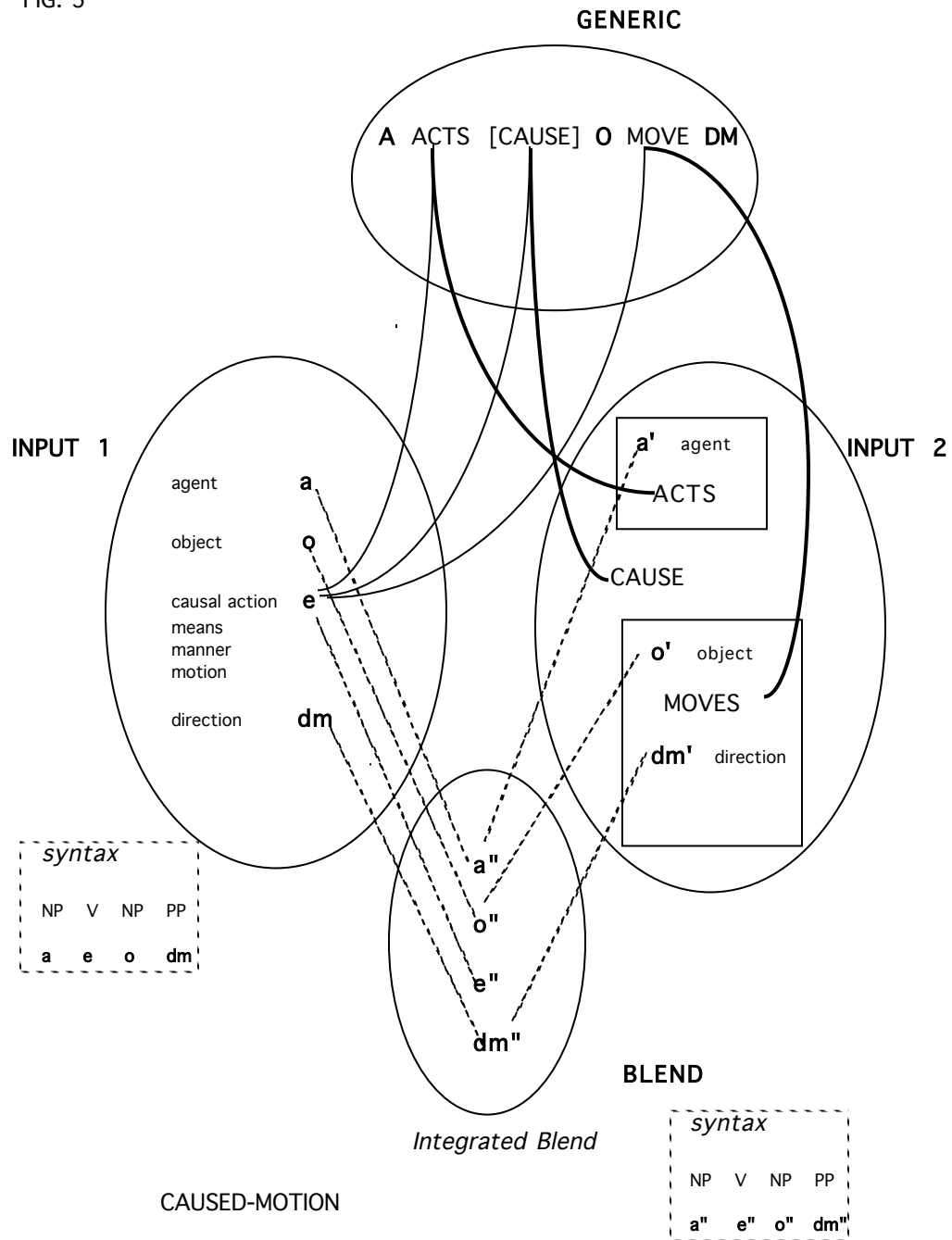


Caused-Motion:

Paul sneezed the napkin
off the table.

Junior sped the car around
the Christmas tree

FIG. 5



Integrated Blend

a" o" e" dm"

CAUSED-MOTION

syntax

NP V NP PP

a e o dm

BLEND

syntax

NP V NP PP

a" e" o" dm"

"I walked him into the room."

"He sneezed the napkin off the table."

"I pointed him toward the door."

"They teased him out of his senses."

"I will talk you through the procedure."

"I read him to sleep."

"They prayed the two boys home."

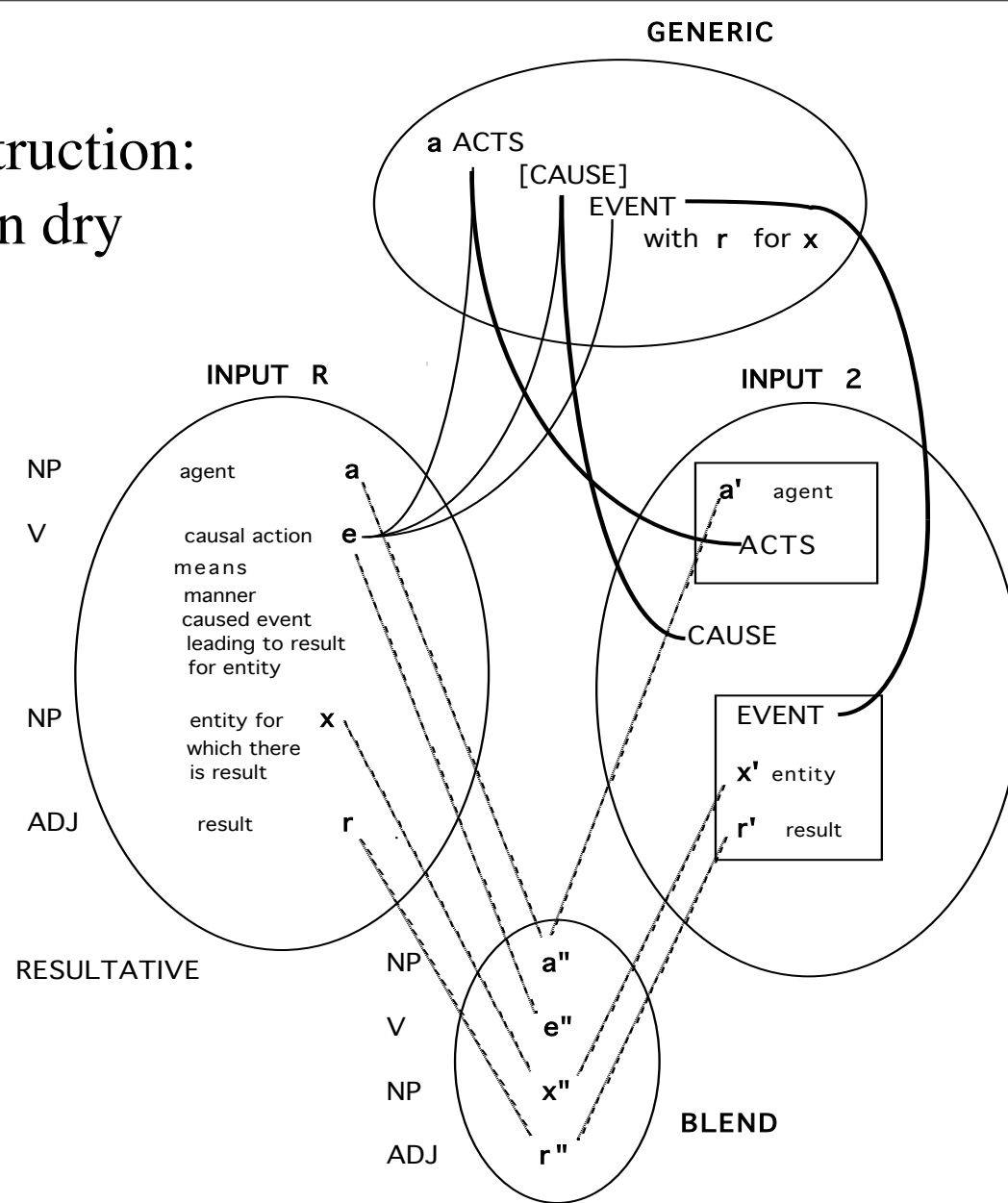
"I muscled the box into place."

"Hunk choked the life out of him."

"He floated the boat to me."

But also: "We blocked him from the door."

Resultative Construction: I boiled the pan dry



Grammatical Constructions

I boiled the pan dry. In the diffuse input, the causal chain runs from forgetting to the invariant position of the burner knob, to the flow of gas, to the flame, to the temperature of the pan, to the temperature of the water, to the level of the water, to the dryness of the pan. The agent performs no direct or indirect action on the pan at all. But in the blend, the compressed structure associated with the grammatical construction is projected together with some selected participants from the diffuse chain of events in the diffuse input. And so, in the blend, the agent is now acting directly on the pan. Moreover, although the boiling of the water is an event and its cause was something the agent did or did not do, there is cause-effect compression in the blend so that *boiling* is an action the agent performed. He even performed it on the pan.

Resultative:

Catherine painted the wall white.

She kissed him unconscious.

Last night's meal made me sick.

He hammered it flat.

I boiled the pan dry.

The earthquake shook the building apart.

Roman imperialism made Latin universal.

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Big Ideas



Major Question: Transcending Local Scale: Human Scale, Ape Scale, Mammal Scale



1. How can we feel at human scale about things that are beyond human scale?



2. How can human-scale thinking and feeling be involved in long-range causal patterns?



C. S. Sherrington

“an enchanted loom
where millions of
flashing shuttles weave a
dissolving pattern,
always a meaningful
pattern though *never* an
abiding one; a shifting
harmony of subpatterns.”

—*The Integrative Action
of the Nervous System (1906)*

Sir Charles Scott Sherrington
English neurophysiologist, born 27 November 1857,
died 4 March 1952, Eastbourne, Sussex



Doesn't memory bring the
past into the present?



Human Scale, Ape Scale, Mammal Scale



1. How can we feel at human scale about things that are beyond human scale?



2. How can human-scale thinking and feeling be involved in long-range causal patterns?

Big Ideas



<http://marktturner.org>



The Human Mental Tardis: Advanced Blending, Compression, and Identity



The Tardis: Travel in Space and Time Beyond Human Scale

Escaping Human Scale

“A self can feel such a singular fixture, hugging one’s here-and-now like a twenty-four-hour undergarment, but actually it’s a string, looping back and forwards in time to knit together our past and future moments. . . . A self is a Tardis, a time-machine: it can swallow you up and spit you out somewhere else.”

— Charles Ferneyhough. 2008. *The Baby in the Mirror: A Child’s World from Birth to Three*. London: Granta. page 129.



**Dr. Who's
Tardis**



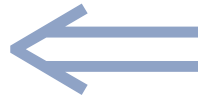
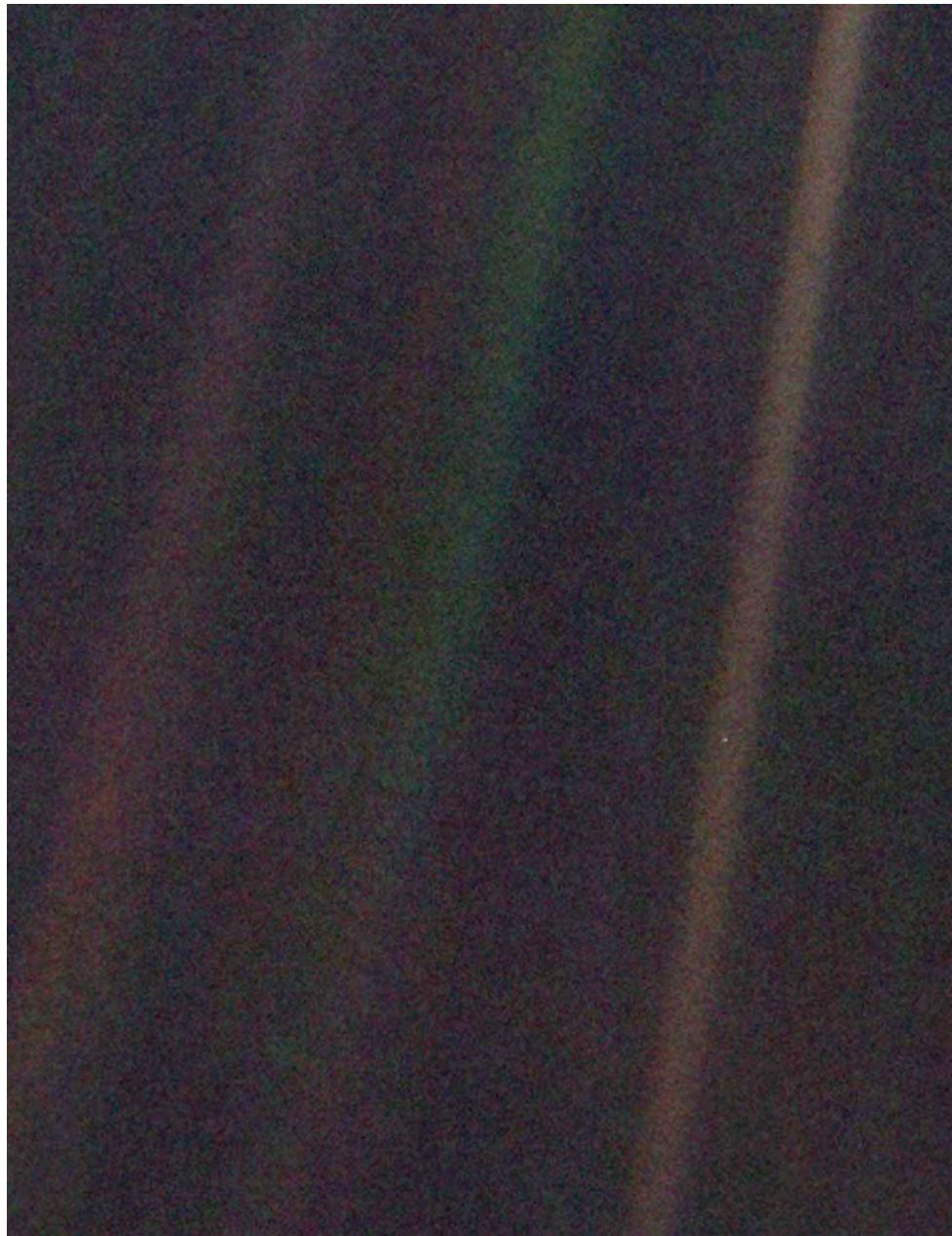
Our Tardis

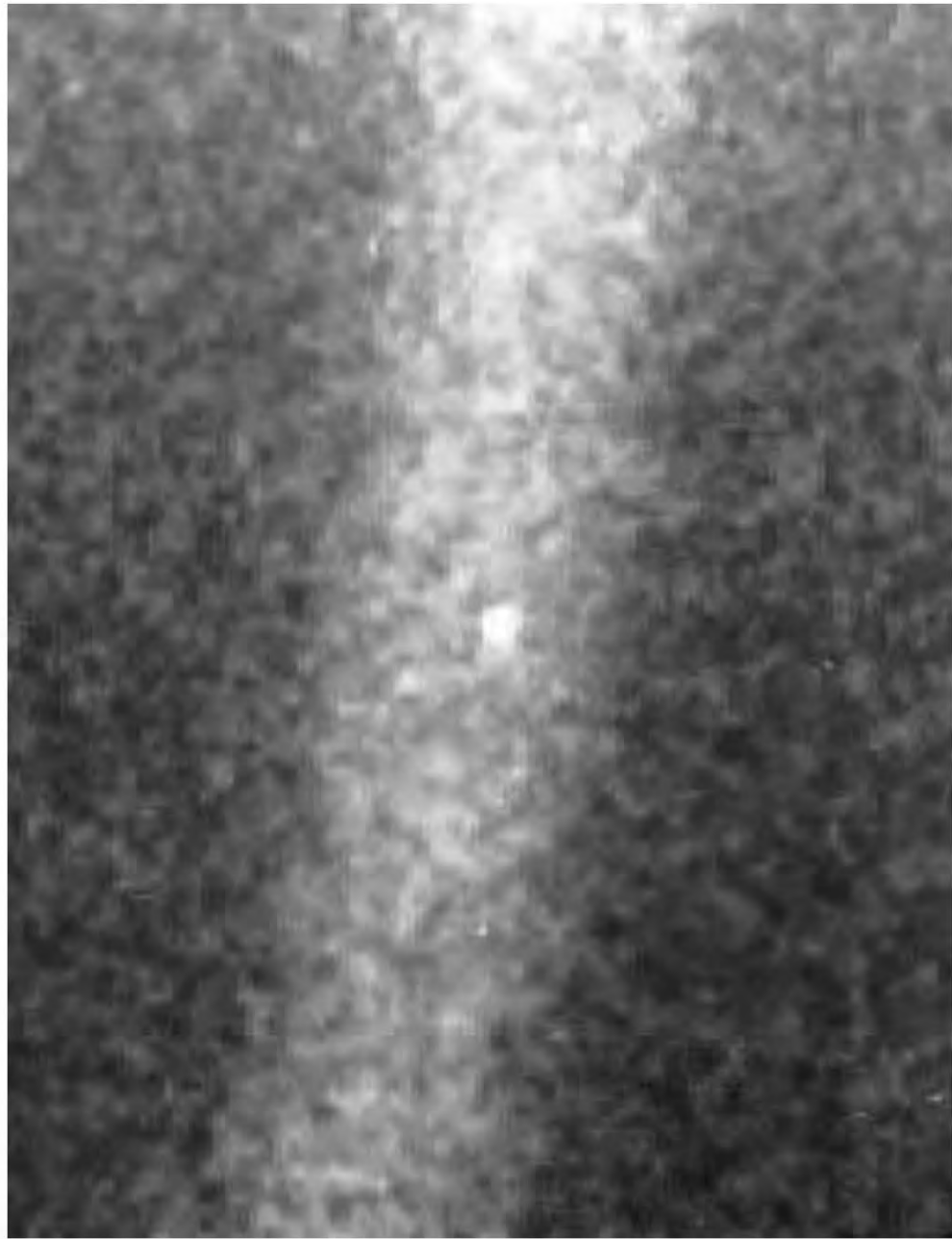
An Inconvenient Truth

“An Inconvenient Truth” is the film version of Al Gore’s slide-show presentation on global warming. Close to the end, Gore shows a picture of the Earth as a what he calls a “pale blue dot.” The Earth is a single pixel on a huge cosmological screen, difficult even to pick out when he points at it. The picture was taken from a distance in space of 4 billion miles. Gore says, “Everything that has ever happened in all of human history has happened on that dot. All the triumphs and tragedies, all the wars and all the famines, all the major advances. That is what is at stake—our ability to live on planet Earth, to have a future as a civilization.”

And then he concludes the film with this blend: “Future generations may well have occasion to ask themselves, 'What were our parents thinking? Why didn't they wake up when they had the chance?' **We have to hear that question from them now.**”

Pale Blue Dot





The Time Blend
at the end of
“An Inconvenient Truth”

And then he concludes the film with this blend: “Future generations may well have occasion to ask themselves, 'What were our parents thinking? Why didn't they wake up when they had the chance?' **We have to hear that question from them now.**”



Joey, Katie and Todd will be performing your bypass.

Before you know it, these kids will be doctors, nurses and medical technicians, possibly yours.

They'll need an excellent grasp of laser technology, advanced computing and molecular genetics. Unfortunately, very few American children are being prepared to master such sophisticated subjects.

If we want children who can handle

science's good jobs, more kids need to take more challenging academic courses.

To find out how you can help the effort to raise standards in America's schools, please call 1-800-96-PROMISE.

If we make changes now, we can prevent a lot of pain later on.

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Chicago, Illinois 60610
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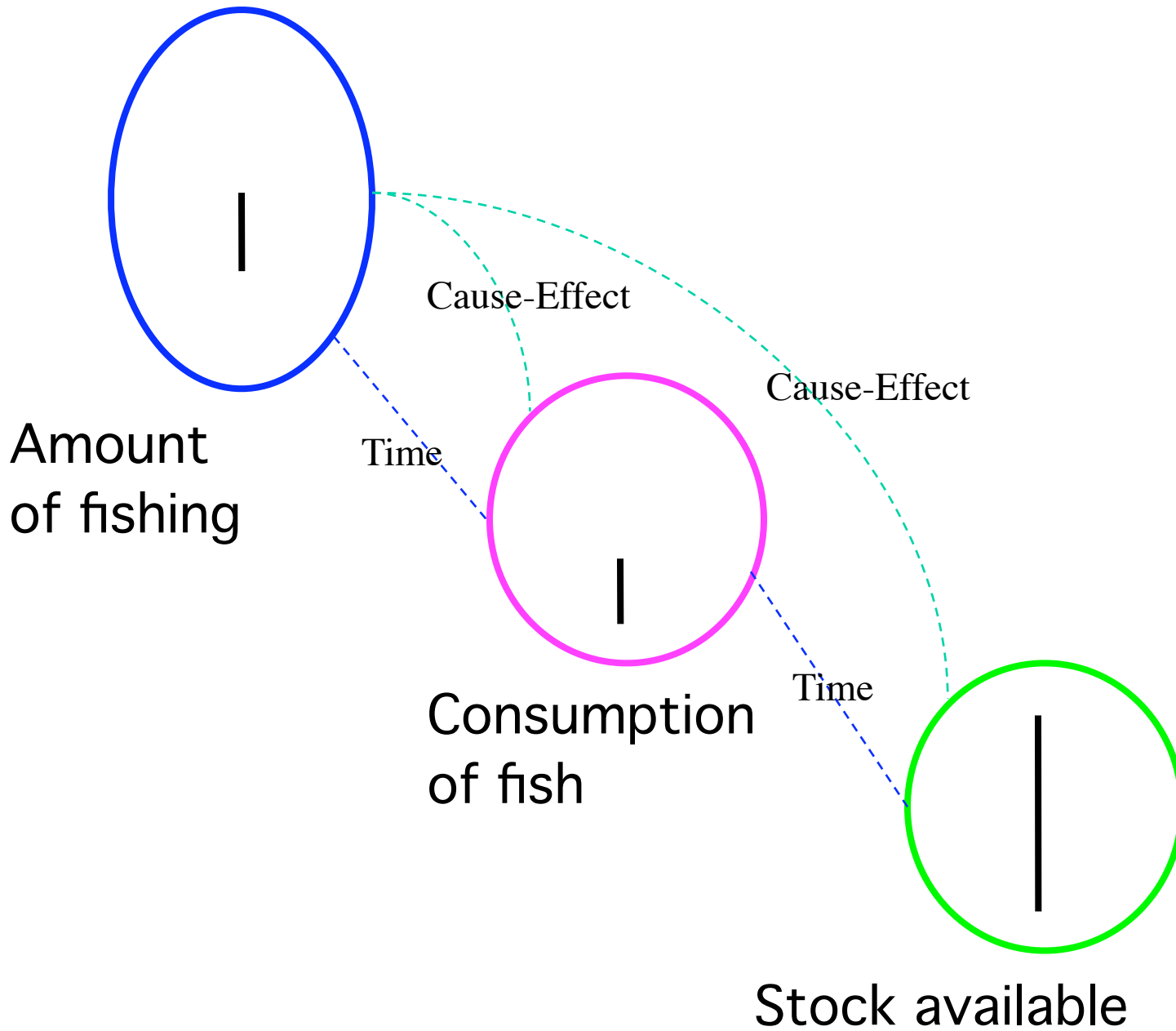


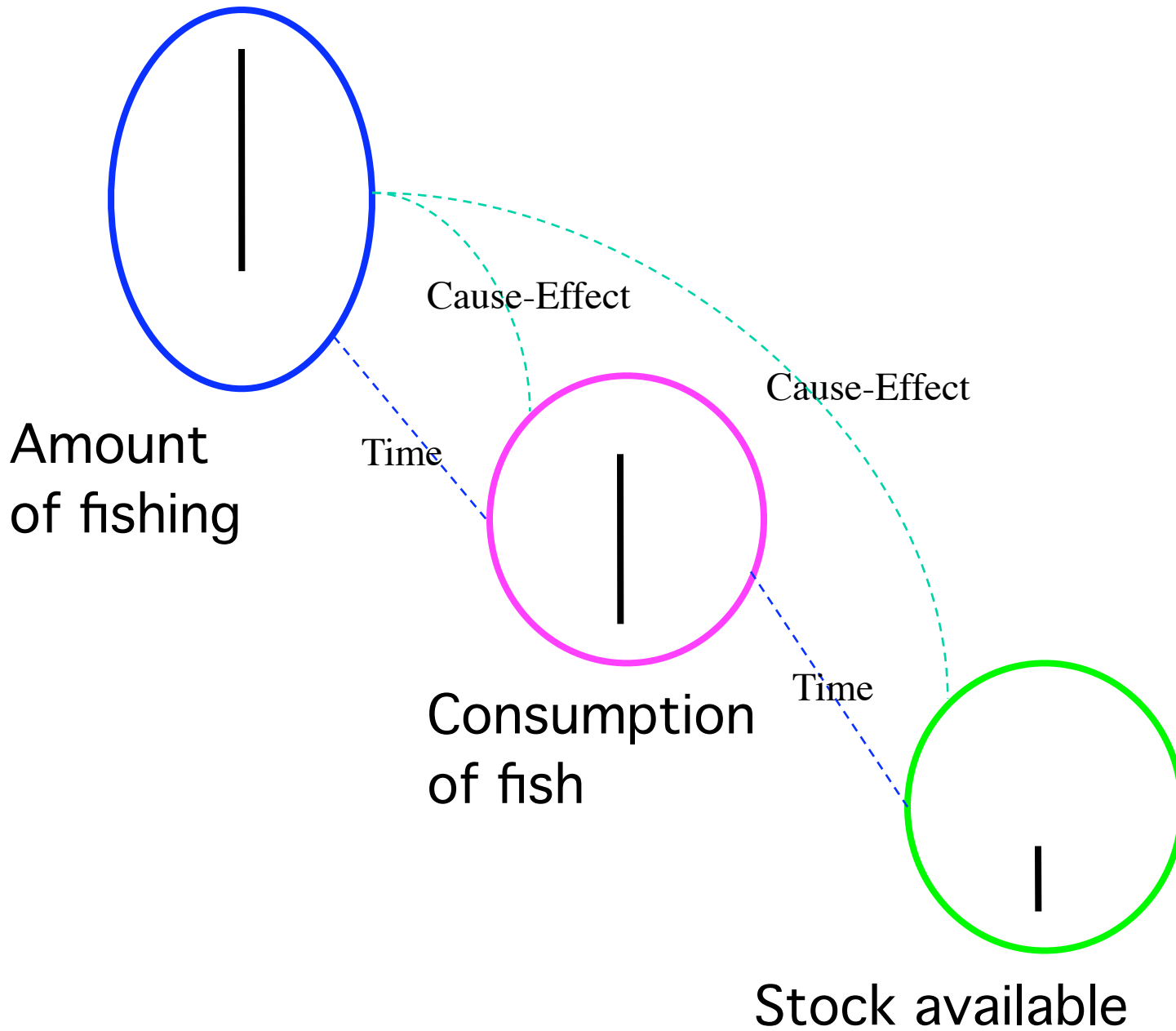
Joey, Katie, and Todd Will Be Performing Your Bypass.

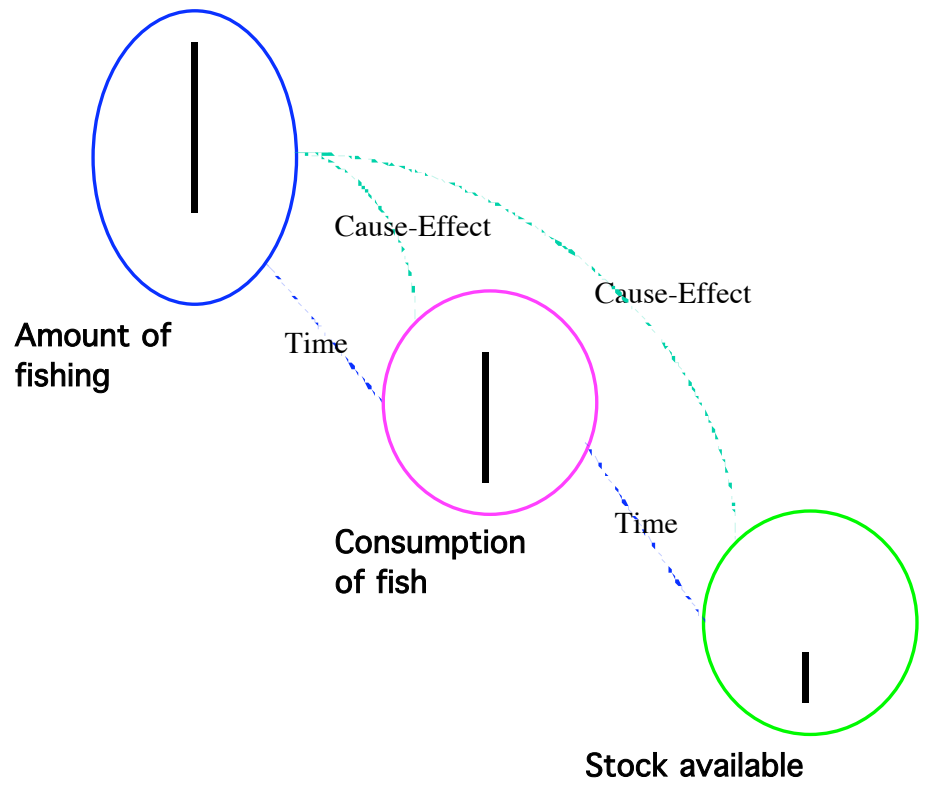
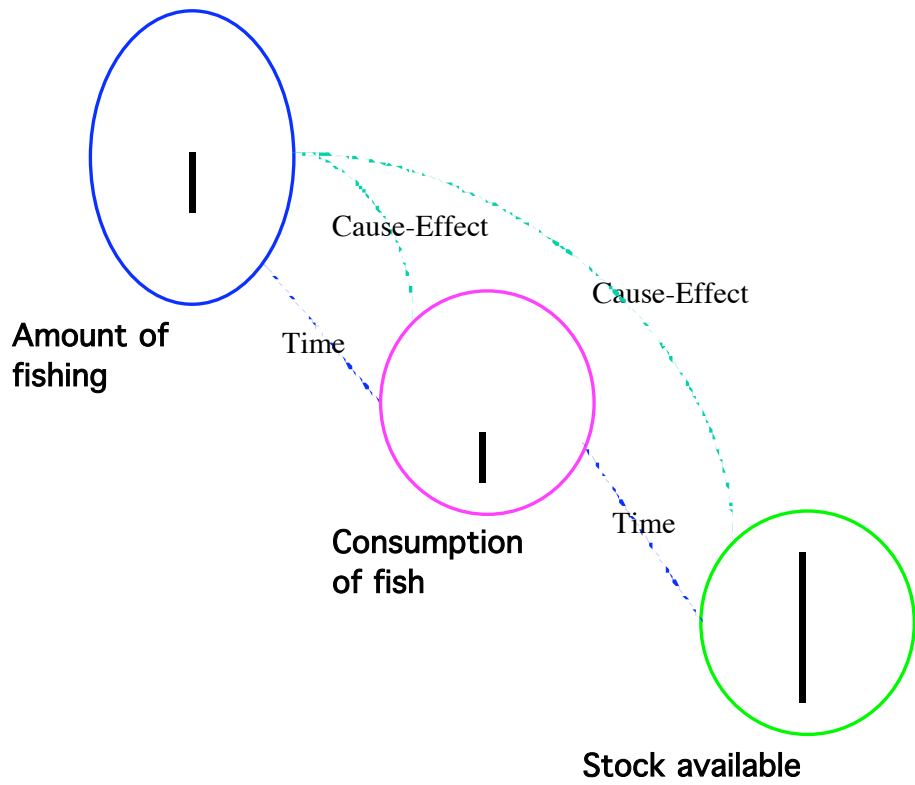
“**Before you know it**, these kids will be doctors, nurses and medical technicians, possibly yours. They'll need an excellent grasp of laser technology, advanced computing and molecular genetics. Unfortunately, very few American children are being prepared to master such sophisticated subjects. If we want children who can handle **tomorrow's good jobs**, more kids need to take more challenging academic courses. To find out how you can help the effort to raise standards in America's schools, please call 1-800-96-PROMISE. If we make changes now, we can prevent a lot of pain later on.”

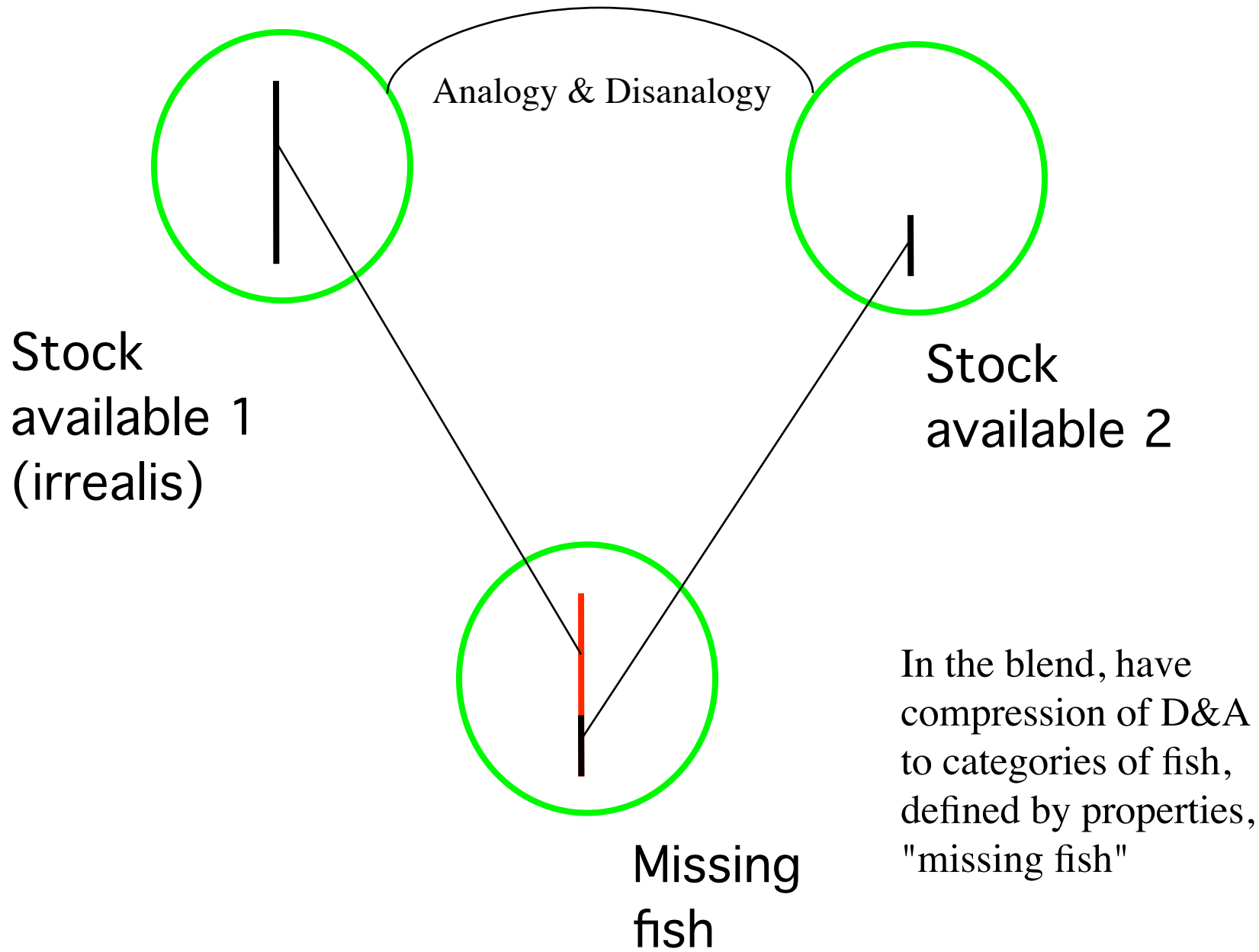
"We are eating the food off our children's plates. When we overfish, we eat not only today's fish but tomorrow's fish, too."

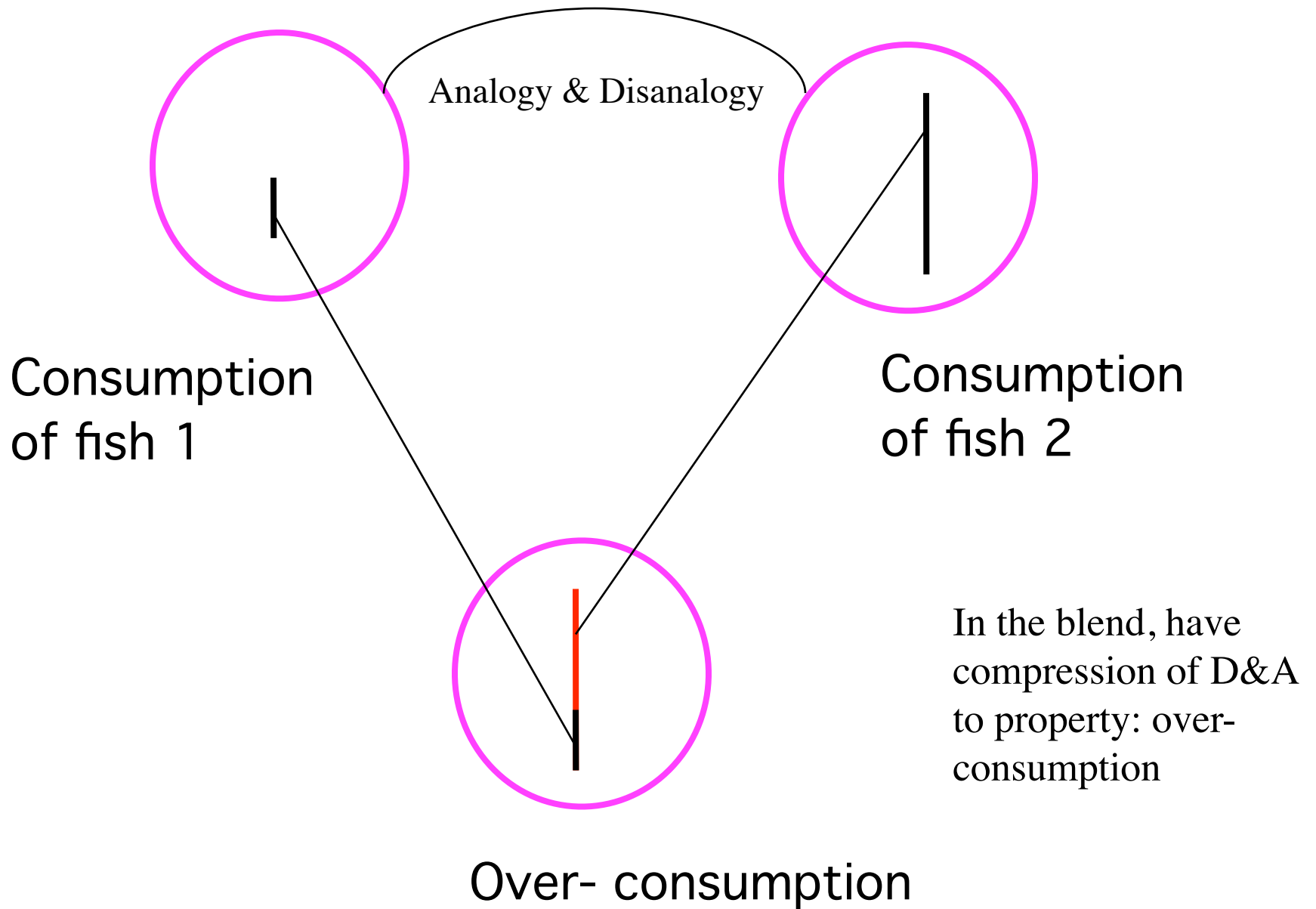
—NPR editorial

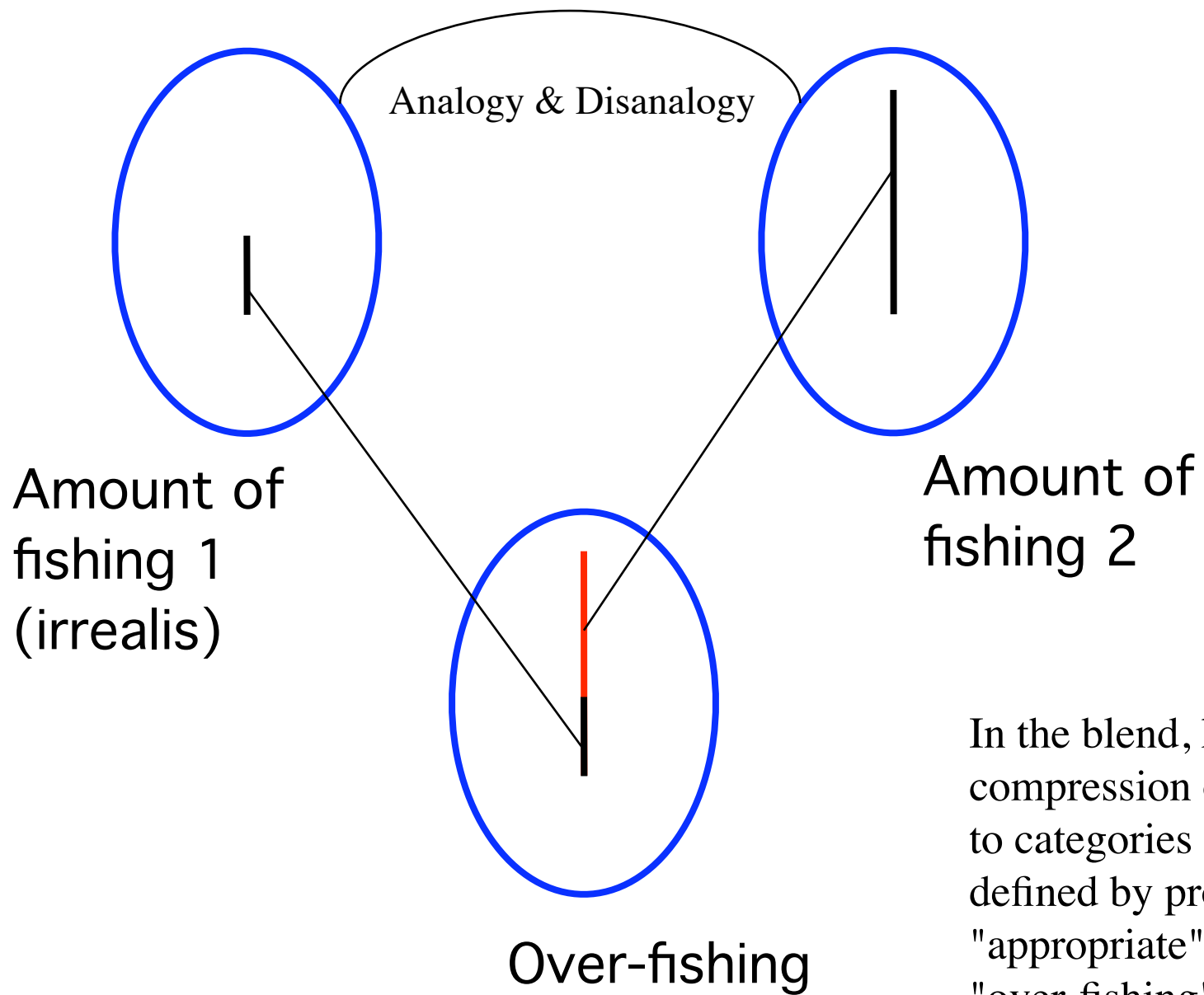








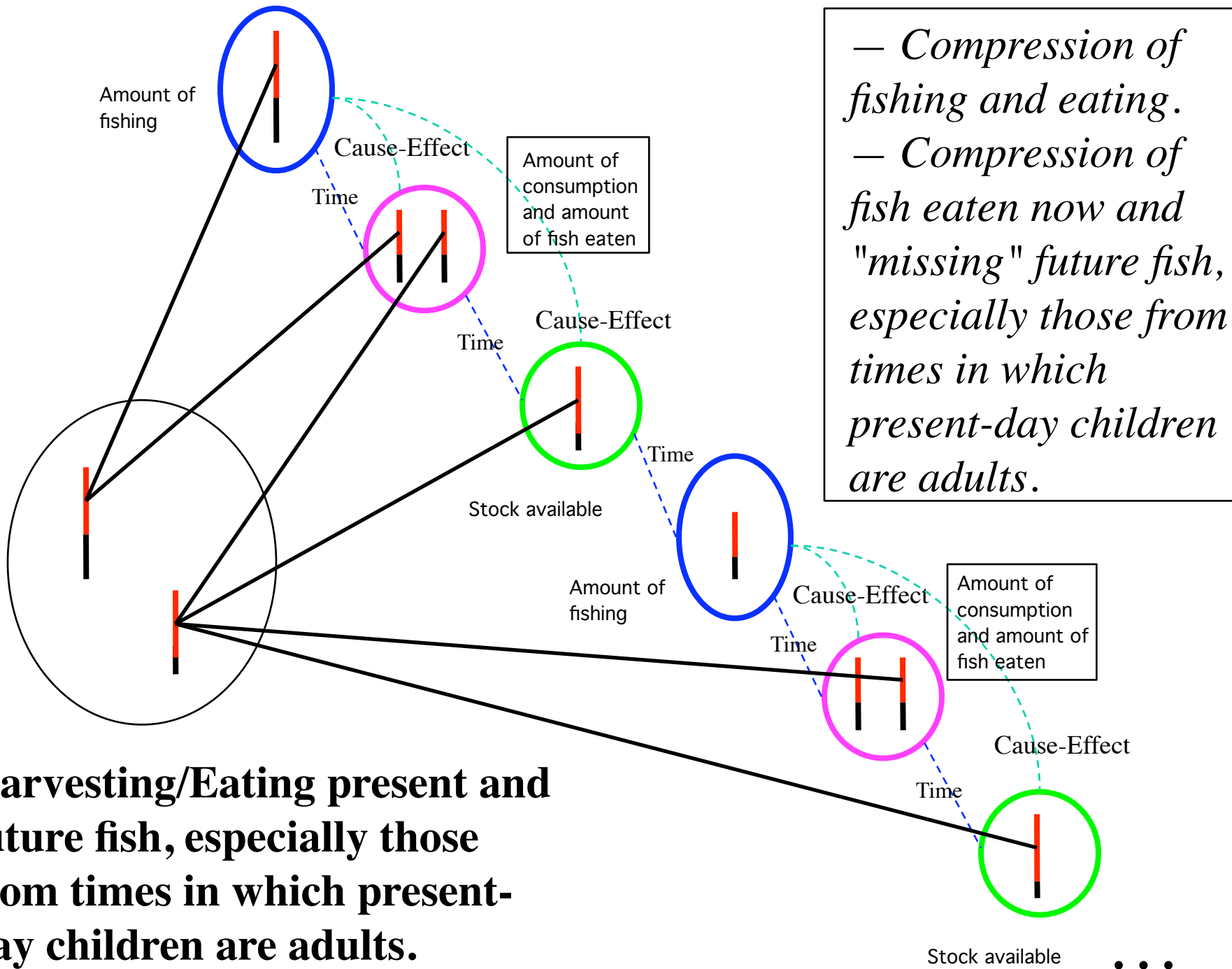




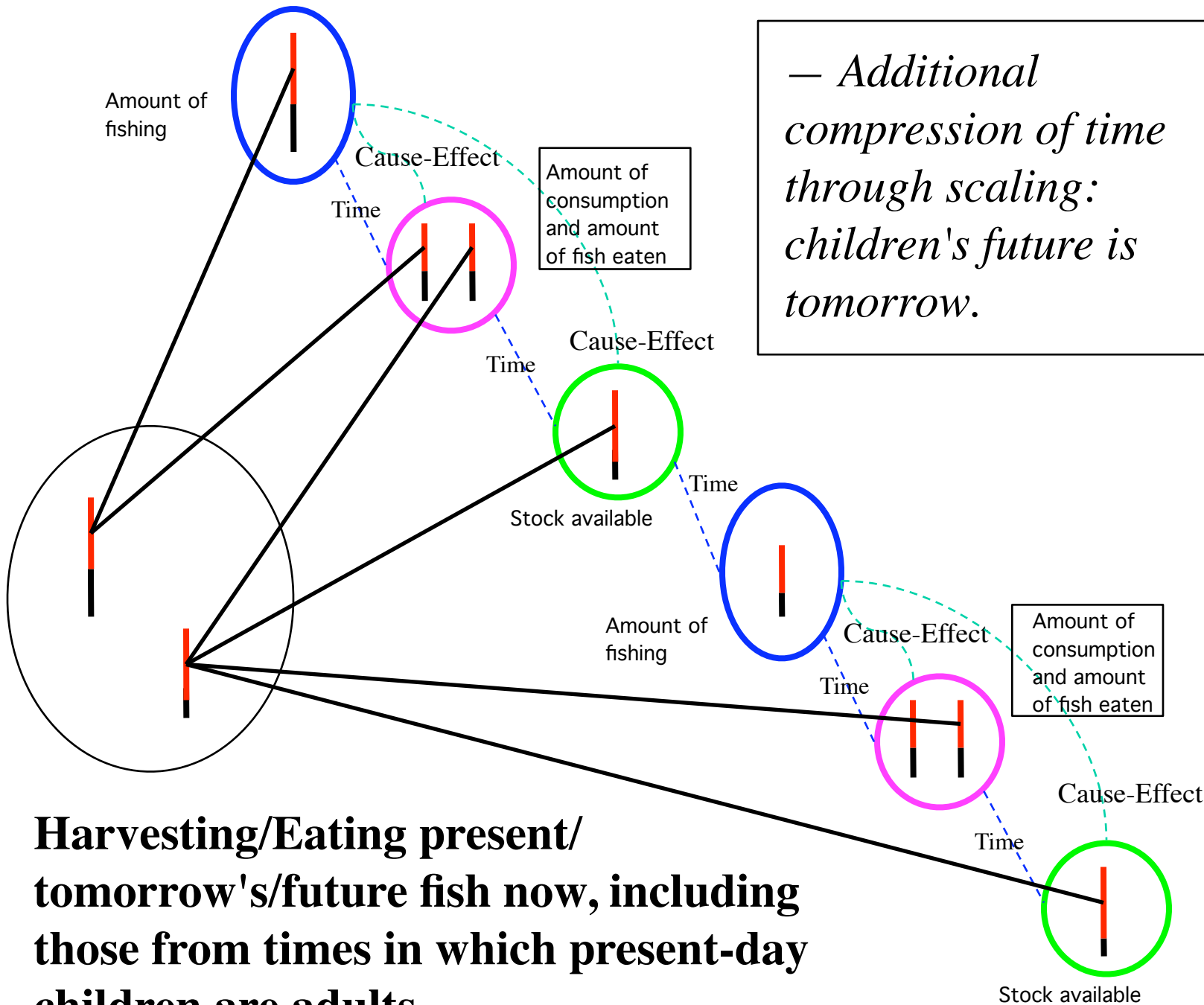
In the blend, have compression of D&A to categories of fishing, defined by properties, "appropriate" fishing, "over-fishing"

"We are eating the food off our children's plates. When we overfish, we eat not only today's fish but tomorrow's fish, too."

—NPR editorial



Harvesting/Eating present and future fish, especially those from times in which present-day children are adults.



**Harvesting/Eating present/
tomorrow's/future fish now, including
those from times in which present-day
children are adults.**



**Joey, Katie and Todd
will be performing your bypass.**

Before you know it, these kids will be doctors, nurses and medical technicians, possibly yours.

They'll need an excellent grasp of laser technology, advanced computing and molecular genetics. Unfortunately, very few American children are being prepared to master such sophisticated subjects.

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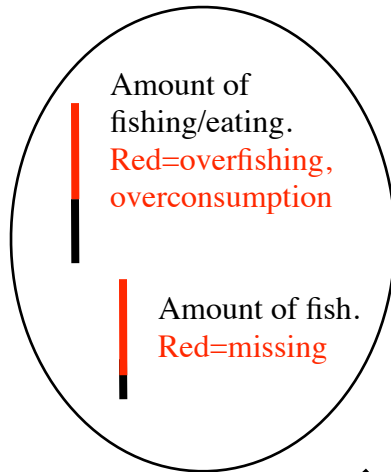
If we make changes now, we can prevent a lot of pain later on.



Joey, Katie, and Todd Will Be Performing Your Bypass.

“**Before you know it**, these kids will be doctors, nurses and medical technicians, possibly yours. They'll need an excellent grasp of laser technology, advanced computing and molecular genetics. Unfortunately, very few American children are being prepared to master such sophisticated subjects. If we want children who can handle **tomorrow's good jobs**, more kids need to take more challenging academic courses. To find out how you can help the effort to raise standards in America's schools, please call 1-800-96-PROMISE. If we make changes now, we can prevent a lot of pain later on.”

**Harvesting/
Eating
today's fish
and
tomorrow's
fish now**



Indulgence frame:
one eats more than one
should; one eats food
reserved for tomorrow.
Naughty.

**Harvesting/
Eating
today's fish
and
tomorrow's
fish now**



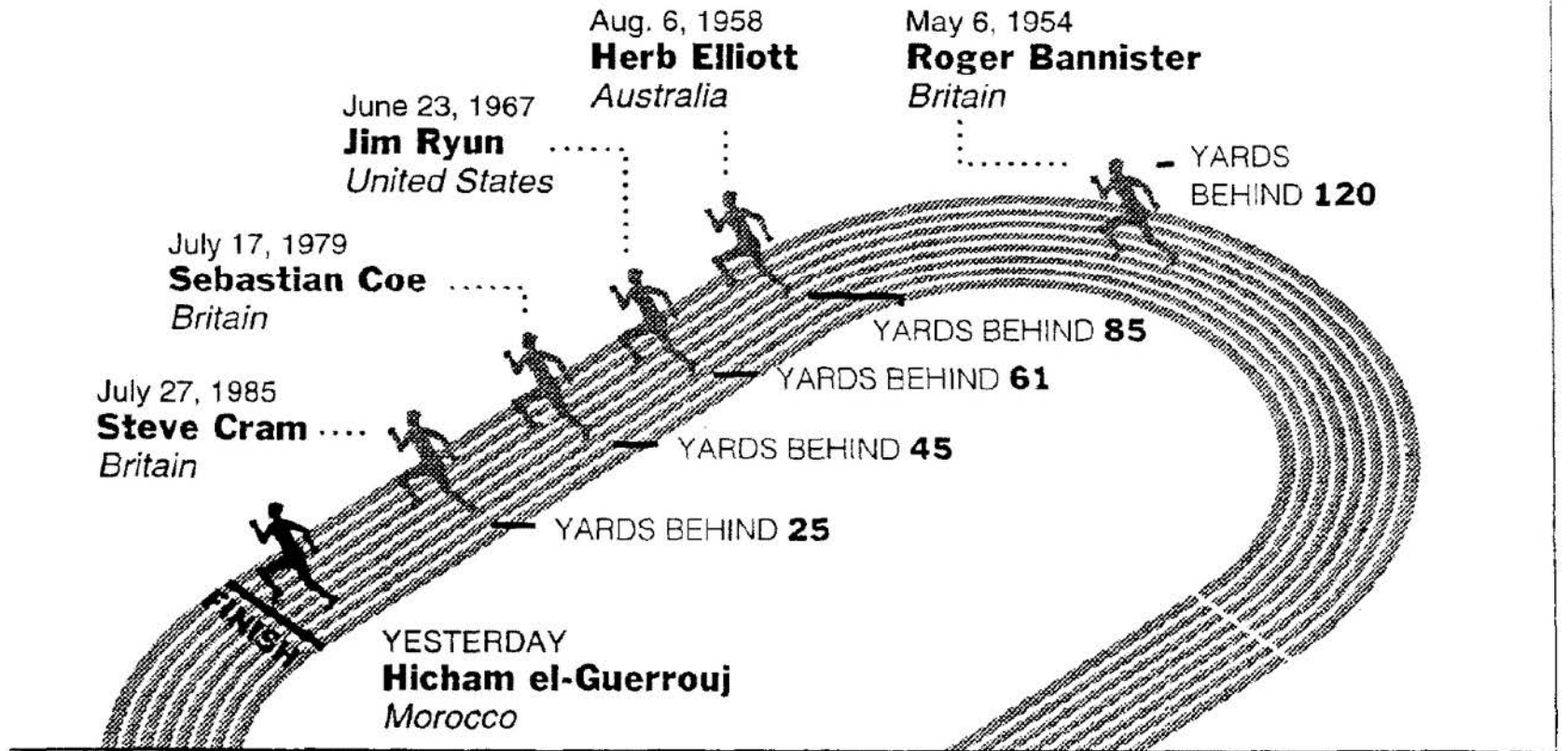
**Harvesting/
Eating
today's fish
and
tomorrow's
fish now**



"We are eating the food off our children's plates. When we overfish, we eat not only today's fish but tomorrow's fish, too."

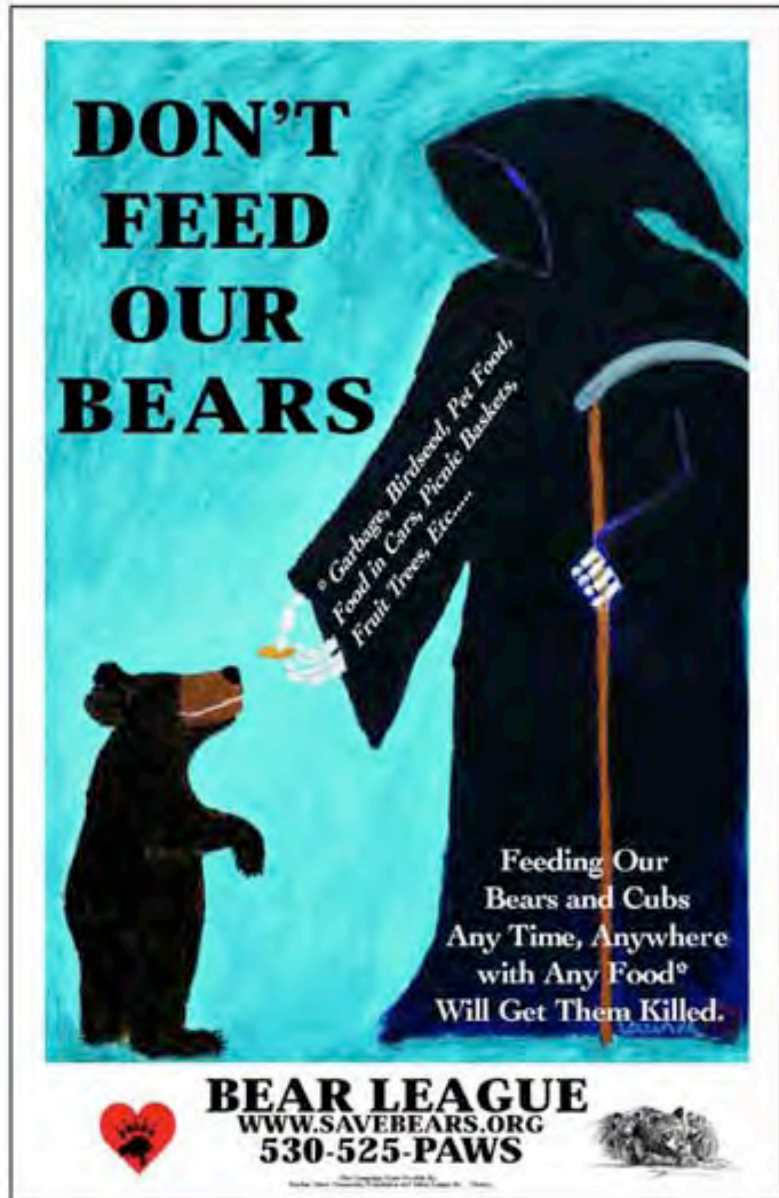
—NPR editorial

Mirror Network



The New York Times

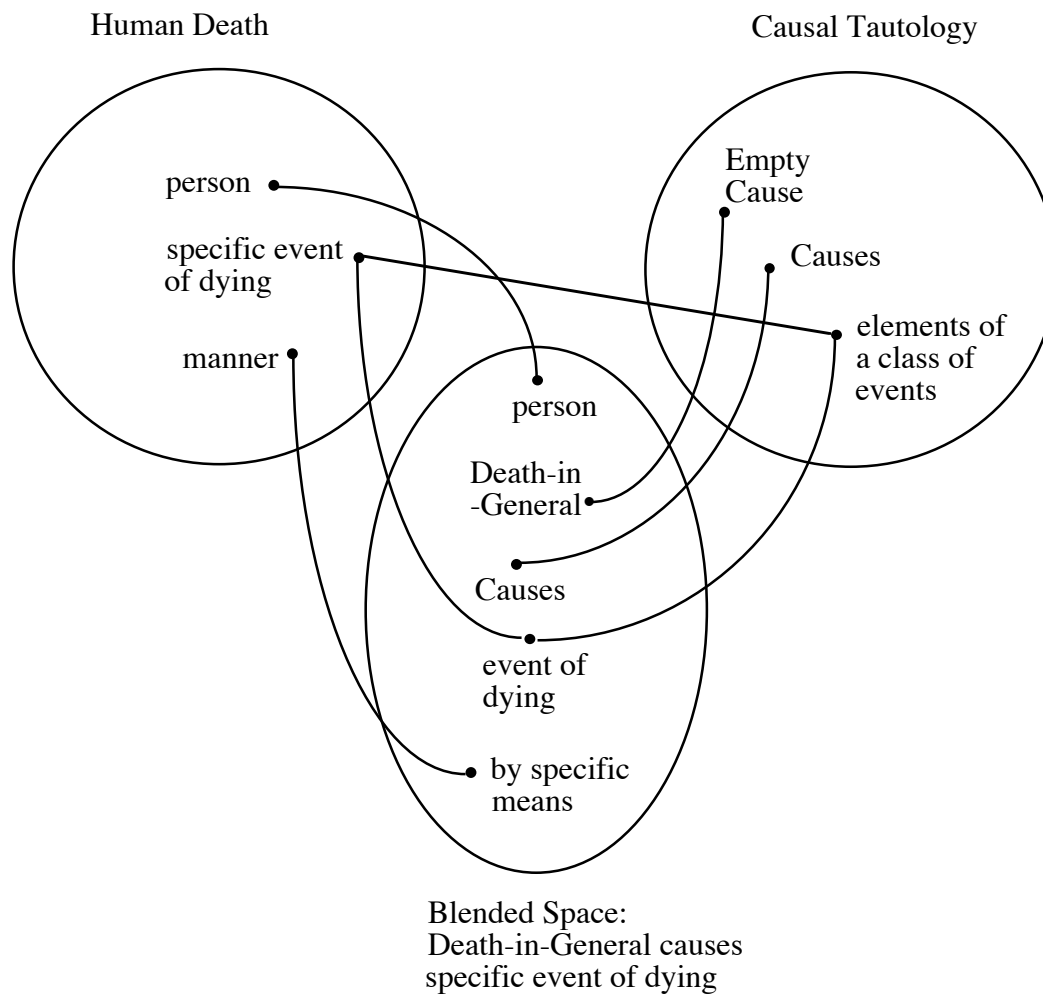
World Record in the Mile

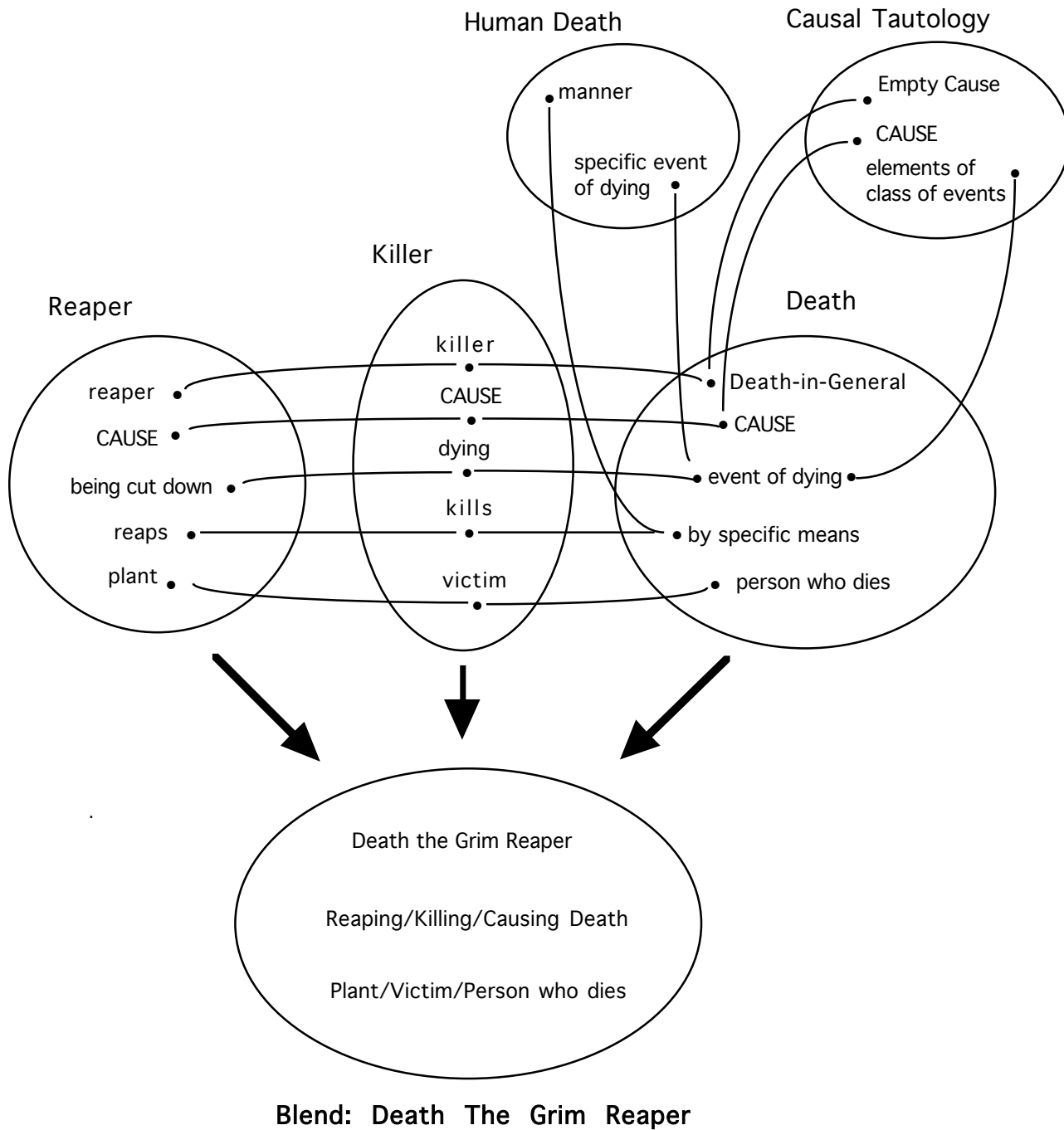


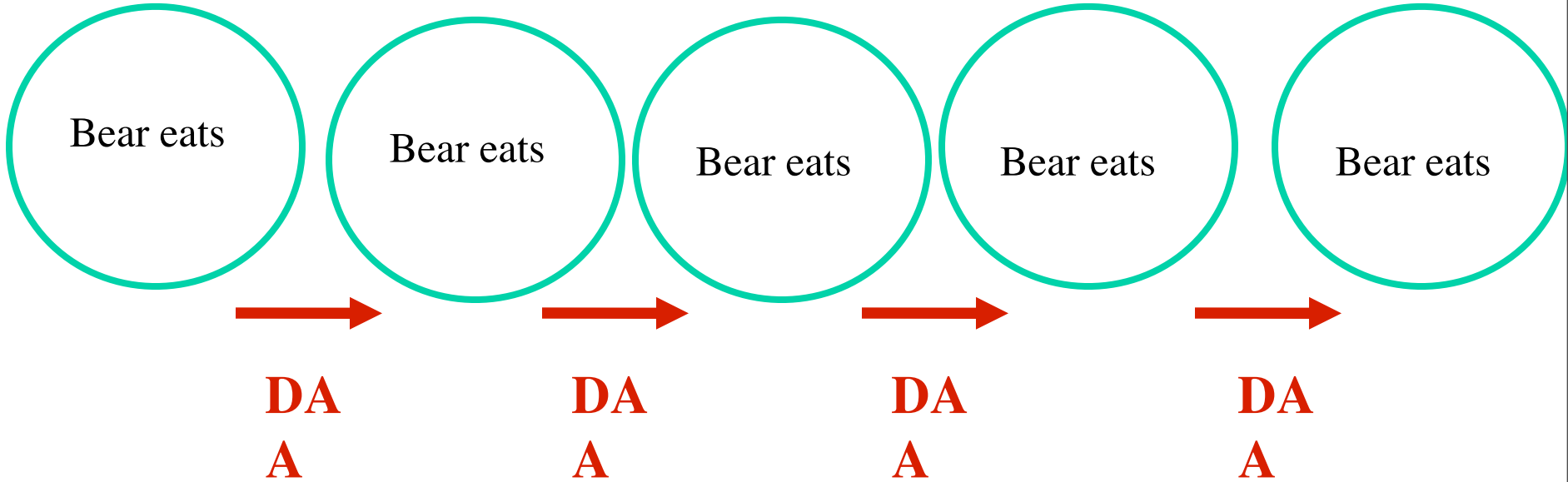
“A fed bear is a dead bear”

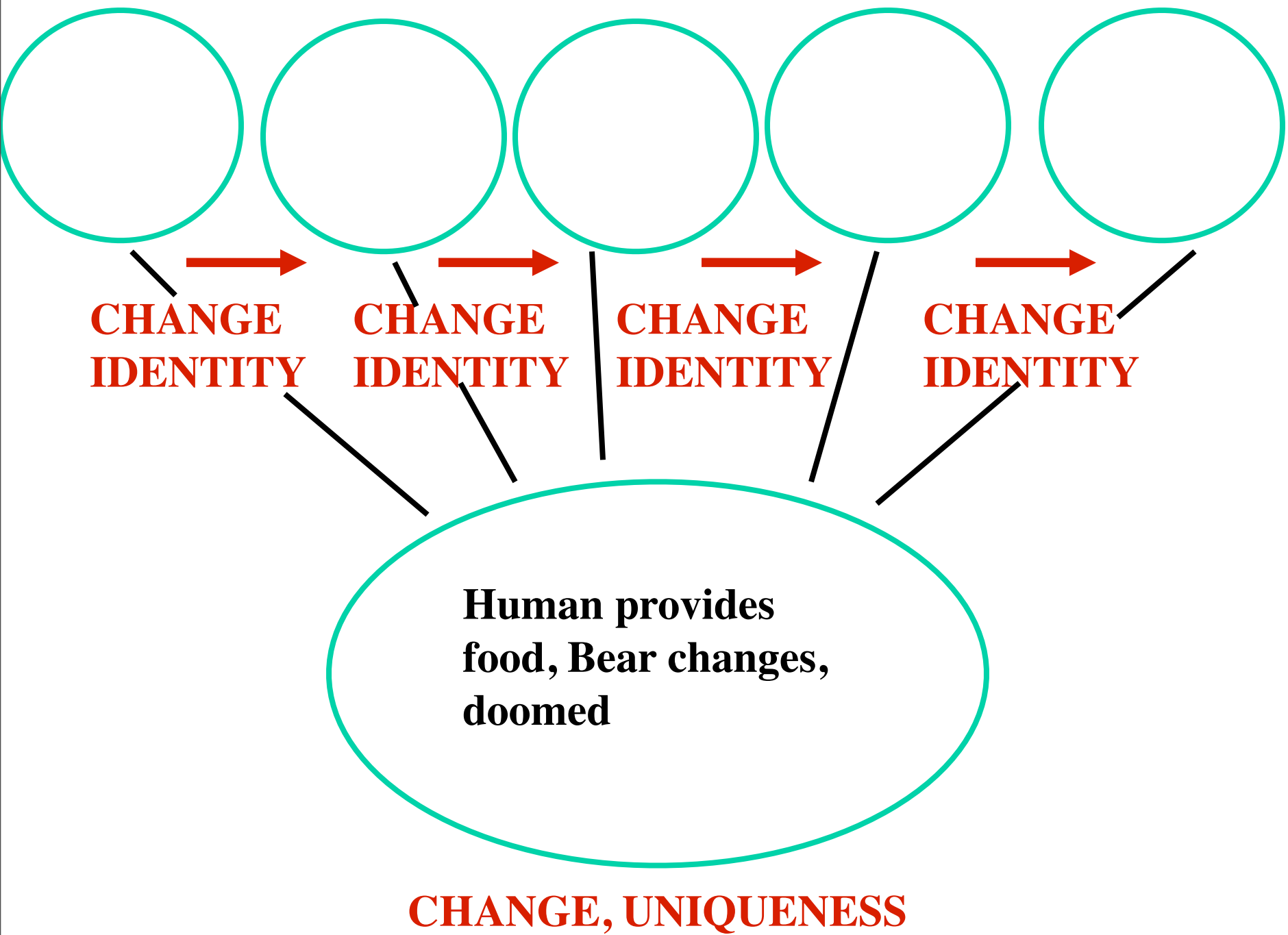
**Garbage, Birdseed, Pet Food,
Food in Cars, Picnic Baskets,
Fruit Trees, Etc . . .**

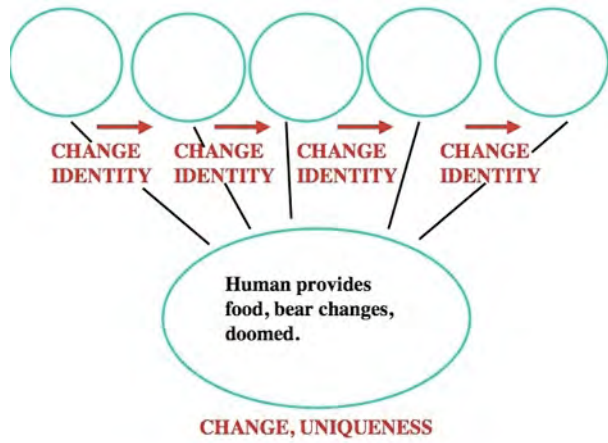
**Feeding Our Bears and Cubs Any
Time, Anywhere, with Any Food
Will Get Them Killed.**











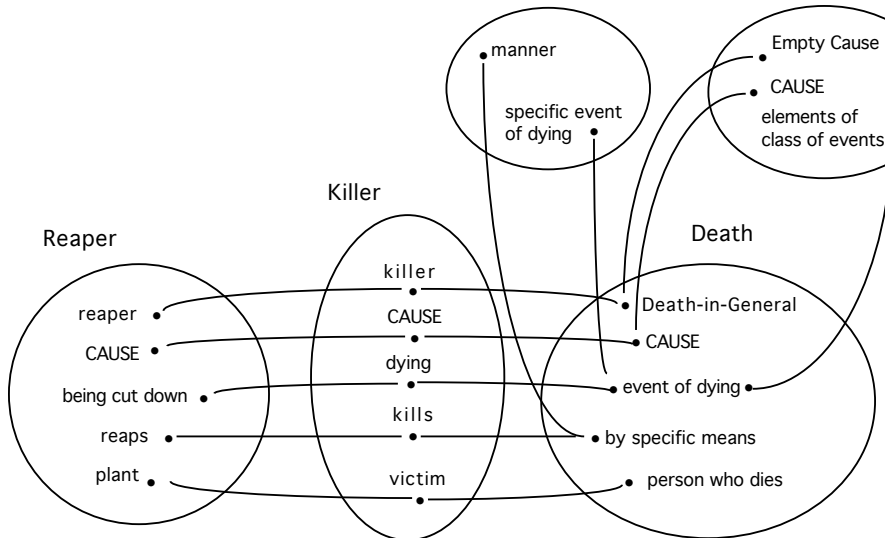
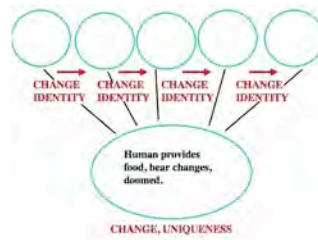
Human feeds animal/bear

Poison

Person/We Feeds/Kills Bear/Bears

Human Death

Causal Tautology



Human feeds animal/bear

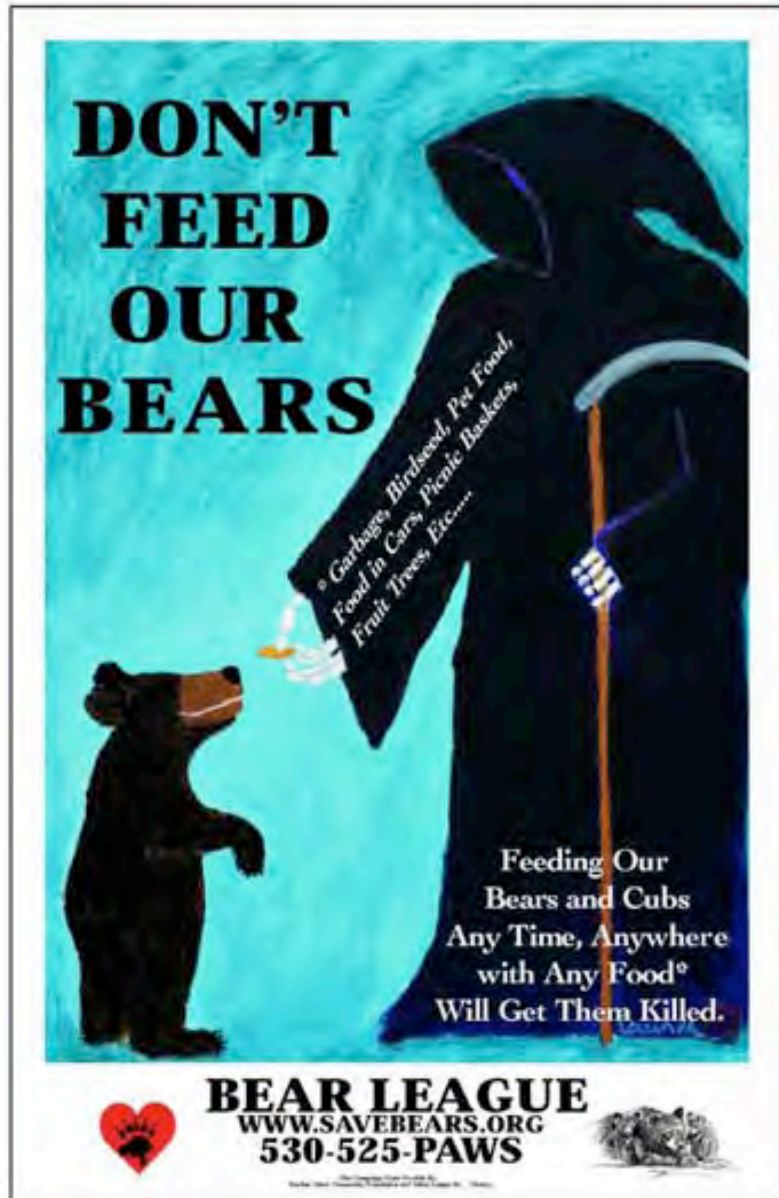
Poison

Person/We Feeds/Kills Bear/Bears

Death the Grim Reaper
 Reaping/Killing/Causing Death
 Plant/Victim/Person who dies

Blend: Death The Grim Reaper

Person/We/Grim Reaper Feeds/Kills/ Poisons Bears/Bear



“A fed bear is a dead bear”

**Garbage, Birdseed, Pet Food,
Food in Cars, Picnic Baskets,
Fruit Trees, Etc . . .**

**Feeding Our Bears and Cubs Any
Time, Anywhere, with Any Food
Will Get Them Killed.**

The Cognitive Science of Rhyme
Rhyme is a compression scheme

“A fed bear is a dead bear”

Form and Meaning

**"At what altitude do the deer
turn into elk?"**

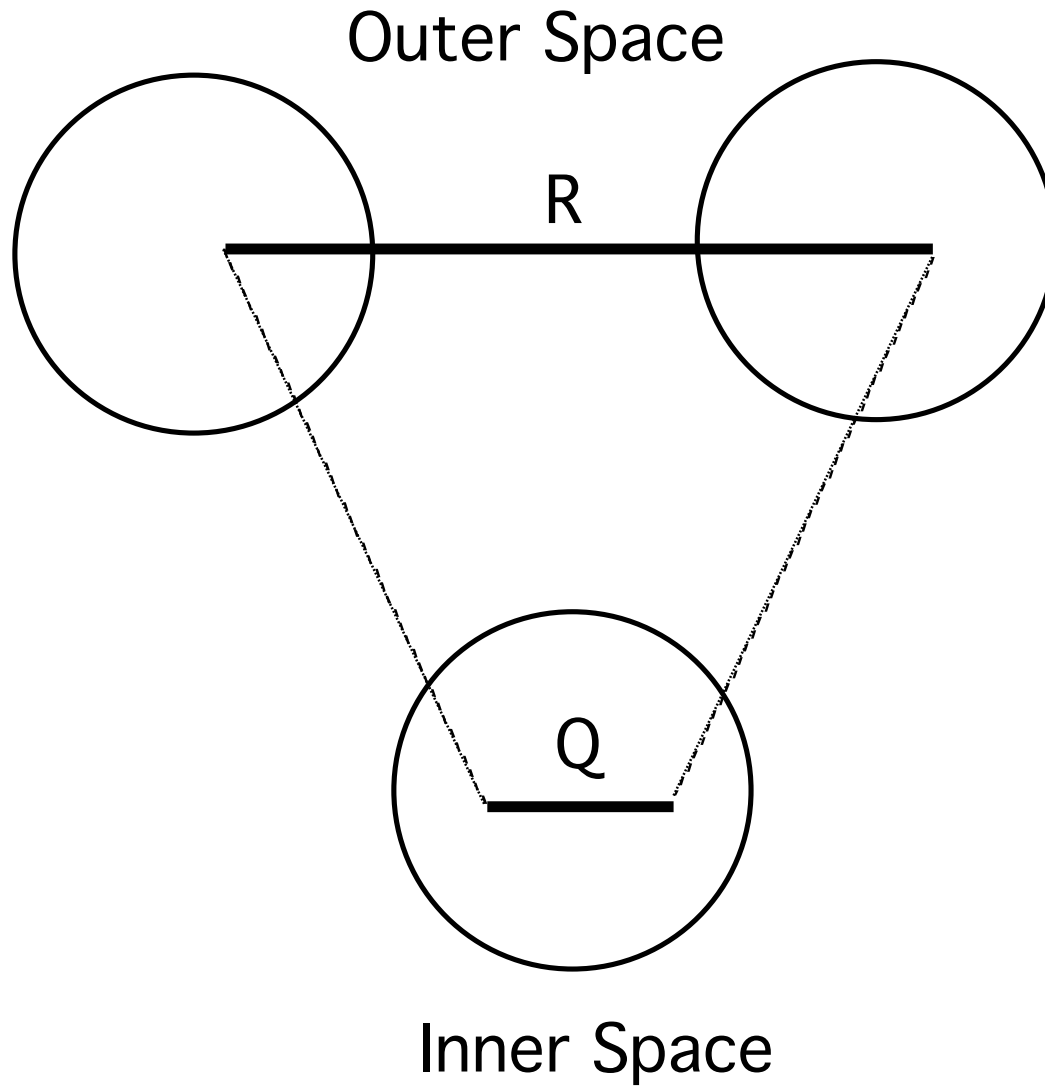
**"The new theory is that dinosaurs
turned into birds."**

**"My tax bill gets bigger every
year." (Fauconnier)**

**"The President changes every four
years" (Fauconnier 1994 [1985])**

Identity & Change from Analogy & Disanalogy

- Dinosaurs evolved into birds
- Dinosaurs turned into birds
- Dinosaurs became birds







DA
A

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A

DA
A

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A



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**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**



**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**

**CHANGE
IDENTITY**



CHANGE, UNIQUENESS, INTENTIONALITY

Objects

Poem & Revisions

Vera Tobin observes that it is common to refer to a literary work as a unique identity that undergoes change. She cites Hugh Kenner's comment on the five-stanza version of Marianne Moore's poem "Poetry" as "the one scarred by all those revisions" (Tobin 2008, 171; Kenner 1967, 1432).

In this conceptualization, the many variations published under the title "Poetry" are compressed (Fauconnier and Turner 2002) into a single, concrete entity that the poet has altered many times. This entity is also metaphorically characterized as a living body, and the alterations that remove material from that body as violent mutilations. In this way, even a new, intact printing of an earlier version can be "scarred" by the publication of shorter variations. (Tobin 2008, 171-172)



What is an
Individual
Human Being?

A lifetime

When I was a child, I spake as a child, I understood as a child, I thought as a child: but when I became a man, I put away childish things. For now we see through a glass, darkly; but then face to face.

—Paul, First Epistle to the Corinthians, 13:11-12.

- ◆ Personal Identity
 - ◆ Creating a Human-Scale Compression extending over ranges of activity, time, and space that are not at human-scale.
 - ◆ Certification, credentials, contracts, character, essence, promises, . . .



Remembrance of Things Past

What Memory Is For

As Arthur Glenberg (1997) writes in “What Memory Is For,”

To avoid hallucination, conceptualization would normally be driven by the environment, and patterns of action from memory would play a supporting, but automatic, role.

(Glenberg 1997, 1)

But as Glenberg astutely observes, for human beings, it is often the case that memory takes the upper hand in conceptualizing the narrative one is inhabiting:

A significant human skill is learning to suppress the overriding contribution of the environment to conceptualization, thereby allowing memory to guide conceptualization. (Glenberg 1997, 1)



One remembers a moment from the past. One experiences in the present a twinge of the **embarrassment** taken as an analog of the original experience of the embarrassment.



One remembers a moment from the past. Remembering the scene, one now feels **pride** rather than embarrassment even though one remembers that the moment was regarded at the time as embarrassing.



One remembers a moment from the past. One does not feel on first pass embarrassed. The memory is then **cultivated** actively, bringing in more aspects of the past event, context, and personal situation, until the feeling of **embarrassment** becomes recognizable.



One performs an action in the present that seems to have a certain significance, but then, a separate action from the past surfaces in memory, and there seems to be an analogy. The analogy results in a compression, bringing a new significance to the action in the present.

A man has troubles with his girlfriend, named “Angela.” He remembers how, when he was little, he was so intent upon hiding his treasures that he hid them too well and usually could not find them again. He remembers in particular the loss of his new penny when he was four, hidden so well he never found it again. And it seems to him that this is what he has done with his love for Angela. The projection of present self into the past makes the memory intelligible and sensible; the analogical connections across his many selves provide the basis of a pattern; the compression of those analogies into the blend provides a character not only for his present understanding of his relationship with Angela but also for the generic space that influences the entire network.

H. G. Wells, *The Time Machine*

I drew a breath, set my teeth, gripped the starting lever with both hands, and went off with a thud. The laboratory got hazy and went dark. Mrs. Watchett came in and walked, apparently without seeing me, towards the garden door. I suppose it took her a minute or so to traverse the place, but to me she seemed to shoot across the room like a rocket. I pressed the lever over to its extreme position. The night came like the turning out of a lamp, and in another moment came to-morrow. The laboratory grew faint and hazy, then fainter and ever fainter. To-morrow night came black, then day again, night again, day again, faster and faster still.

George Eliot

Our moods are apt to bring with them images which succeed each other like the magic lantern pictures of a doze; and in certain states of dull forlornness Dorothea all her life continued to see the vastness of St. Peter's, the huge bronze canopy, the excited intention in the attitudes and garments of the prophets and evangelists in the mosaics above, and the red drapery which was being hung for Christmas spreading itself everywhere like a disease of the retina. —George Eliot, *Middlemarch*:

Why does memory work like this?

One possible answer to this puzzling question is that memory and conceptual integration evolved to support each other. To do advanced conceptual integration, we need the ability to integrate and compress over inputs that are often very different and highly separated in time and space. We cannot predict which inputs will turn out to be useful, but we do know that useful inputs from many sources need to be activated simultaneously and linked by vital relations. Human memory appears to be superb at giving simultaneous activation of quite different inputs, and at offering good provisional connections. Running apparently on autopilot, it often delivers up inputs and connections that have no apparent reason for being activated simultaneously or being connected at all, except that they lead us to quite useful blends. —Fauconnier & Turner (2004) *The Way We Think*, p. 317.

Name	Date Modified	Size
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Documents	7/1/08, 3:57 PM	21.25 GB
Downloads	Today, 10:59 AM	2.4 MB
GarageBand	Today, 7:27 PM	59.8 MB
iCal - 6/24/06.icbu	6/24/06, 12:40 PM	2.6 MB
iCal - 11/25/07.icbu	11/25/07, 10:05 PM	5.1 MB
Library	7/9/08, 1:28 AM	9.97 GB
mm.mbx	12/4/07, 10:52 PM	4 KB
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Music	6/25/08, 10:17 PM	18.32 GB
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June
July
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Now

Cancel Today (Now) Restore



Future Selves

If we ask a man whether he will invest in real estate next year, or go to Paris, or subscribe to the newspaper, and he responds instantly “yes,” on the principle that these are invariant, that is one kind of experience. But it is quite a different feeling to create a blend for the future into which he projects his present psychological dispositions and systems, so that, e.g., he now richly imagines the local conditions of the investing, or traveling, or subscribing, and activates his inferencing and affect.

Cf. Endel Tulving 2002



Managing the Self

This blending of present and future can also be used to manage the self in the present: blending our present embodied cognition with a **future self in a preferred moment** (winning the lottery) can activate feelings that we would like to have in the present situation but find difficult to achieve when immersed in the present. So we can daydream about the future, and consequently feel different in the present.



Managing the Self

Conversely, such advanced narrative cognition about a future scene can create in the actual present consequences we do not want. For example, blending our present embodied cognition with a future self in a situation that we fear might come to pass, such as the loss of a loved one, may be upsetting to us in the present. This can provide incentive to us to **avoid the rich activation of that blend** (unless, of course, as in acting, there is benefit in looking genuinely upset).



Managing the Self

Someone who routinely fails in a particular kind of present scene to do his duty or avoid temptation may, when not in that kind of present scene, try to avoid bringing an imagined future into the actual present, in order not to be sapped in the present of the strength needed to take an action that he fears a future self in a different present will fail to take. People may cut up their credit cards now so they will not be able to use them later, at a future time when the present is different and the mental state of the chooser is also different. People may elect to have large monthly tax withholding as a kind of forced savings, not because they do not understand that this is not financially the best return they could get, but because their present embodied cognition can make the choice to save but they doubt that their future self would in certain conditions make the same choice. Nonhuman animals do not have these concerns: since they lack double-scope blending, they do not have credit cards, tax withholding, or lotteries to begin with.



Blending Present and Future Selves



Other Minds

Let me have men about me that are fat;
Sleek-headed men and such as sleep o' nights:
Yon Cassius has a lean and hungry look;
He thinks too much: such men are dangerous.

—Julius Caesar

Attribution of Mind

Possibility 1: Human beings have ‘Swiss Army Knife’ minds, whose different capacities are like different tools, unrelated in their mechanisms and evolution, and operating separately but with some coordination in the brain. On this view, a separate module evolved to recognize other human beings as having minds, and that module has no particular computational relation to any other.

Possibility 2: Human beings have the operation of double-scope blending, and put the notion of another mind together from scratch through blending every time they encounter a person or invent an imaginary being.

Attribution of Mind

Possibility 3: People have double-scope blending that can achieve attributions of mind for non-human beings, but extremely early in life put together blending templates that serve them thereafter for dealing with people. These templates are quickly entrenched, and people ‘live in the blend’, never aware of the work that went into the template, but able to open it back up actively and on-line when they want to do new work. We never need to construct these templates afresh again. Instead, we activate the blend directly, just like that. This possibility allows for adjustment, so that the newborn who regards the voice-activated mobile as an intentional agent could refine its reactions later.

Possibility 4: Genetic assimilation has picked up some of the work of double-scope blending in the case of human beings, so that human beings now have a head start in achieving the blending templates for other minds.

Attribution of Mind: Tomasello

The Cultural Origins of Human Cognition (1999):

“My specific hypothesis is that human cognition has the species-unique qualities it does because:

- *Phylogenetically*: modern human beings evolved the ability to "identify" with conspecifics, which led to an understanding of them as intentional and mental beings like themselves.
- *Historically*: this enabled new forms of cultural learning and sociogenesis, which led to cultural artifacts and behavioral traditions that accumulate modifications over historical time.
- *Ontogenetically*: human children grow up in the midst of these socially and historically constituted artifacts and traditions, which enables them to (a) benefit from the accumulated knowledge and skills of their social groups; (b) acquire and use perspectively based cognitive representations in the form of linguistic symbols (and analogies and metaphors constructed from these symbols); and (c) internalize certain types of discourse interactions into skills of metacognition, representational redescription, and dialogic thinking.” (page 10).

Attribution of Mind - A Subcase of Double-Scope Blending

- *Phylogenetically*: Rudimentary capacities for blending are evident in mammals. Modern human beings evolved the advanced ability for double-scope blending, which enabled them to be innovative in many ways, and in particular enabled them to blend the self with other human beings, so as to understand conspecifics as intentional, mental beings like oneself. (But, using a range of different projections, double-scope blending also enabled cognitively modern human beings to make blends of self with fauna, flora, and inanimate objects. These different kinds of blends have different utilities. No doubt the blend of self with conspecifics was particularly adaptive.)
- *Historically*: Double-scope blending made possible dramatically powerful new forms of cultural learning and sociogenesis, making it easier to accumulate the products of double-scope blending over time. Double-scope blending made human culture and cultural processes possible, and is responsible for art, science, religion, language, mathematics, fashions of dress, and other human singularities.
- *Ontogenetically*: Human children are born with the capacity for double-scope integration. Cultures stand ready with the products of conceptual integration accumulated over time: languages, complex gestures, weights and measures and money, stuffed animals, fashions of dress and posture, social rituals, fractions, religion, Partly because children can form blends of self and other, but also partly because they can form blends of all sorts, children can acquire these culturally-developed products of blending.

Attribution of Mind: Adaptive

Blending is adaptive in Tomasello's terms for at least the reasons that advanced social cognition is adaptive.

First, it seems implausible that "theory of mind" could provide all the capacity needed for modern cognition. Tomasello writes, **"My particular claim is that in the cognitive realm the biological inheritance of humans is very much like that of other primates. There is just one major difference, and that is the fact that human beings 'identify' with conspecifics more deeply than do other primates"** (page 14). In *The Way We Think*, Fauconnier and I explain many human discoveries and creations that do not appear to follow exclusively from the ability to create a blend of self and other. Social cognition is indeed necessary for significant cultural accumulation, and, to be sure, the ability to "stand on the shoulders" of others is indispensable to human cognition. **But that ability alone is inadequate to account for the details of the invention of complex numbers, hyperbolic geometry, money, grammatical constructions, counterfactual thought,** The phylogenetic development that is needed for these cases, and that is also needed for blends of self and other, is the advanced capacity of double-scope blending. The capacity that distinguishes human beings in the cognitive realm lies one level of generality above "theory of mind." The origin of human cognition lies not specifically in blending within the domain of self and other, but at a higher level, in the more general capacity for double-scope blending over many domains.

Second, Tomasello is correct to emphasize the importance of the "stabilizing component" in the accumulation of knowledge: "The process of cumulative cultural evolution requires not only creative invention but also, and just as importantly, faithful social transmission that can work as a ratchet to prevent slippage backward Perhaps surprisingly, for many animal species it is not the creative component, but rather the stabilizing ratchet component, that is the difficult feat" (page 5). We must acknowledge the extent to which innovation results from collaboration (in the broad, "perspective-taking" sense) rather than from lone genius. Yet the collaborating mind requires strong powers of mental creativity, as does cultural learning. Tomasello emphasizes the stabilizing component, but the creative component deserves equal emphasis. Conceptual integration theory treats the creative component and the stabilizing component not as two partitioned components but instead as seamlessly interacting exercises of the same remarkable mental ability for conceptual blending. **For Tomasello, "The complete sequence of hypothesized evolutionary events is thus: human beings evolved a new form of social cognition, which enabled some new forms of cultural learning, which enabled some new processes of sociogenesis and cumulative cultural evolution. This scenario . . . posits one and only one biological adaptation . . ."** (page 7). **For me, the complete sequence of hypothesized evolutionary events is this: human beings evolved an advanced form of cognition, double-scope blending, and this advanced form made possible, among other things, new forms of cultural learning, sociogenesis, and cumulative cultural evolution.**

Third, **the evolutionary hypothesis proposed by conceptual integration requires only an increase along a gradient of ability:** double-scope blending requires many pre-existing abilities to be in place, but otherwise consists of only an advance along the gradient of a capacity that we see widely manifested in the mammalian world. In recent lectures delivered at, e.g., Stanford University, Tomasello provides important evidence for this view. Chimpanzees (*pan troglodytes*), he reports, in my words, not his, may have greater ability to blend self and other than has heretofore been recognized. In very narrowly and ingeniously contrived experiments in which a dominant and a subordinate chimpanzee interact in competition for food, that is to say, situations in which the chimpanzee already has strong domain-specific mental scaffolding (food, dominance) to assist in the difficult blending of self and conspecific, the subordinate chimpanzees show some ability to behave in ways that suggest a partial ability to understand the perspective of a dominant. This research is suggestive of the ways in which the ability for blending interacts differentially with domain-specific knowledge and abilities.

Fourth, it is widely acknowledged that children assigned to the pervasive developmental disorder spectrum, of which autism is deemed to be a part, frequently show strong capacities for conceptual integration in domains other than social pragmatics. Asperger syndrome children in particular often display such forcible abilities for conceptual integration that non-specialists have difficulty imagining that their socially anomalous behavior could be the result of cognitive deficit rather than poor character. If theory-of-mind social cognition were the root of the special capacities of human cognition, then impairment of social cognition in these children might produce similarly profound deficits across all those special cognitive capacities. But, on the contrary, Asperger children can manifest great impairment in social cognition and yet have strong blending abilities in other domains. I propose therefore that these **cognitive deficits should be explored as cases in which conceptual integration encounters interference developing and working in a particular domain**. Such interference, to be sure, would inevitably cause collateral problems in other domains, depending on the severity of the interference, but not necessarily to the same degree.



Projection of
Intensionality



Rattlesnakes



Non-animate objects



Each other

Narrative

- ◆ Personal Identity
- ◆ Thinking with
 - ◆ Feeling
 - ◆ Past
 - ◆ Future
 - ◆ Other minds
 - ◆ Self and Consciousness:
 - ◆ Homo economicus
 - ◆ Other as Homo economicus
 - ◆ Counterfactuality. Alternative narratives.
- ◆ Language. Social ontologies and deontologies.
- ◆ Physical Ontology
- ◆ Political Ontology and its laws
- ◆ Material Anchors
- ◆ Social Memory
- ◆ Punishment
- ◆ Redemption
- ◆ Guilt
- ◆ Sin
- ◆ Money

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://marktturner.org>

Department of Cognitive Science



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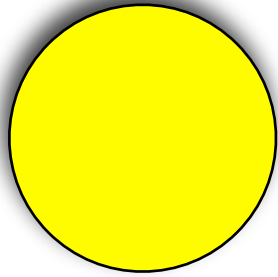
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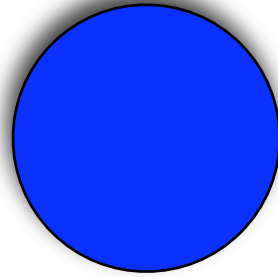
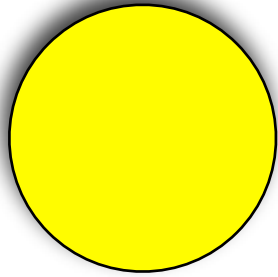
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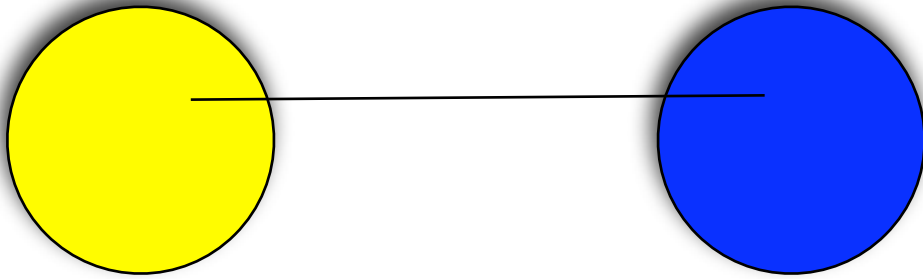
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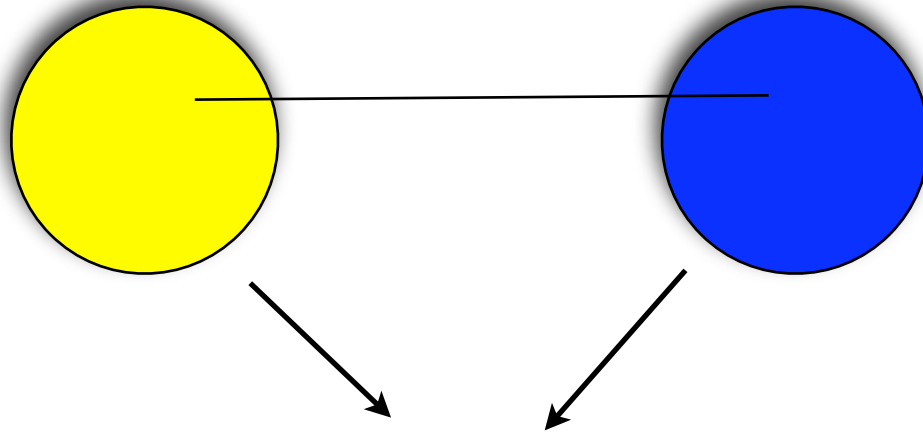
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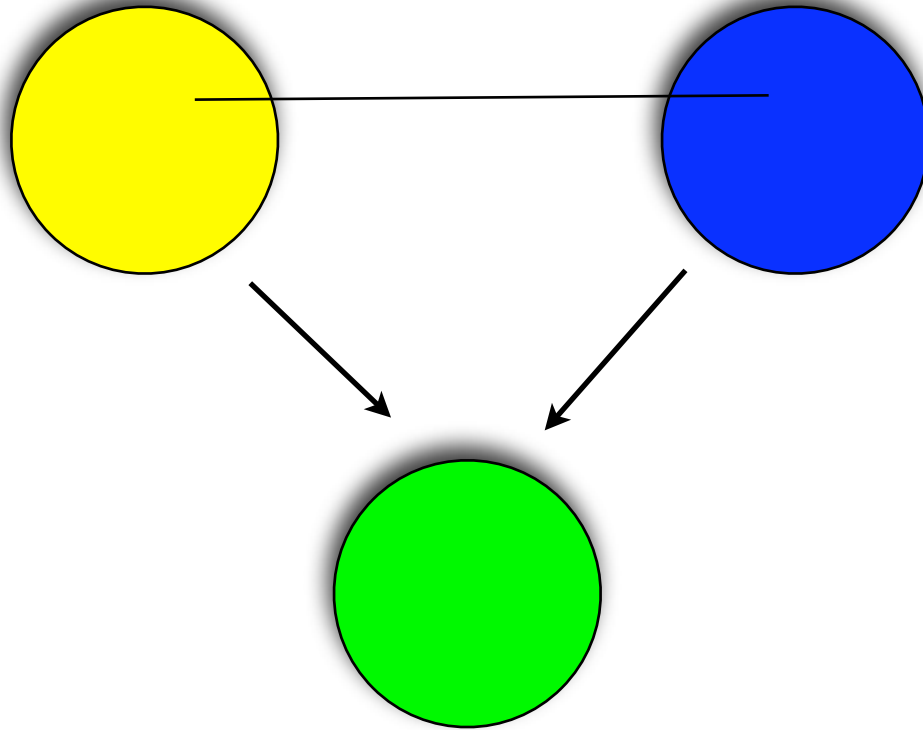
Working in the Mental Network





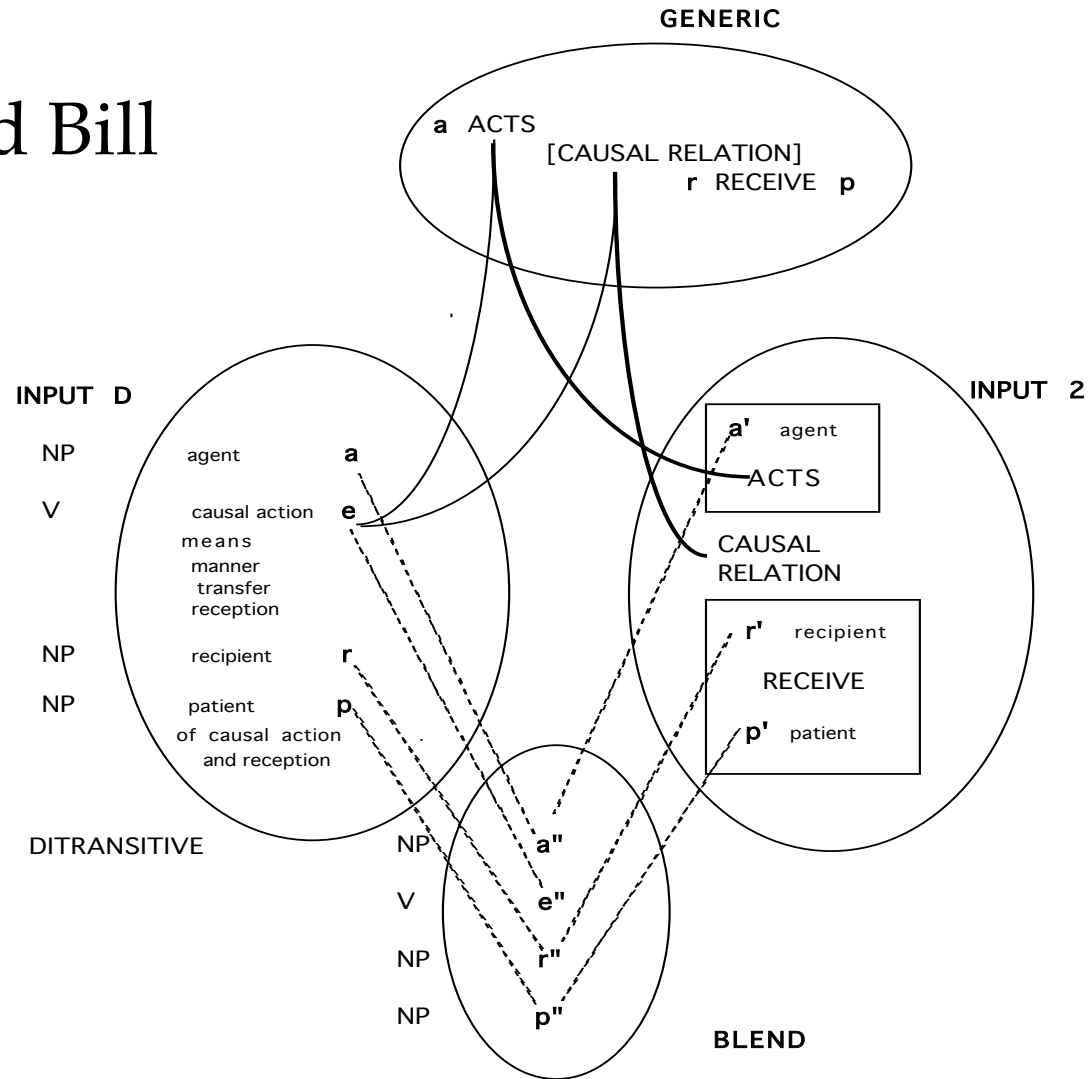






Ditransitive:

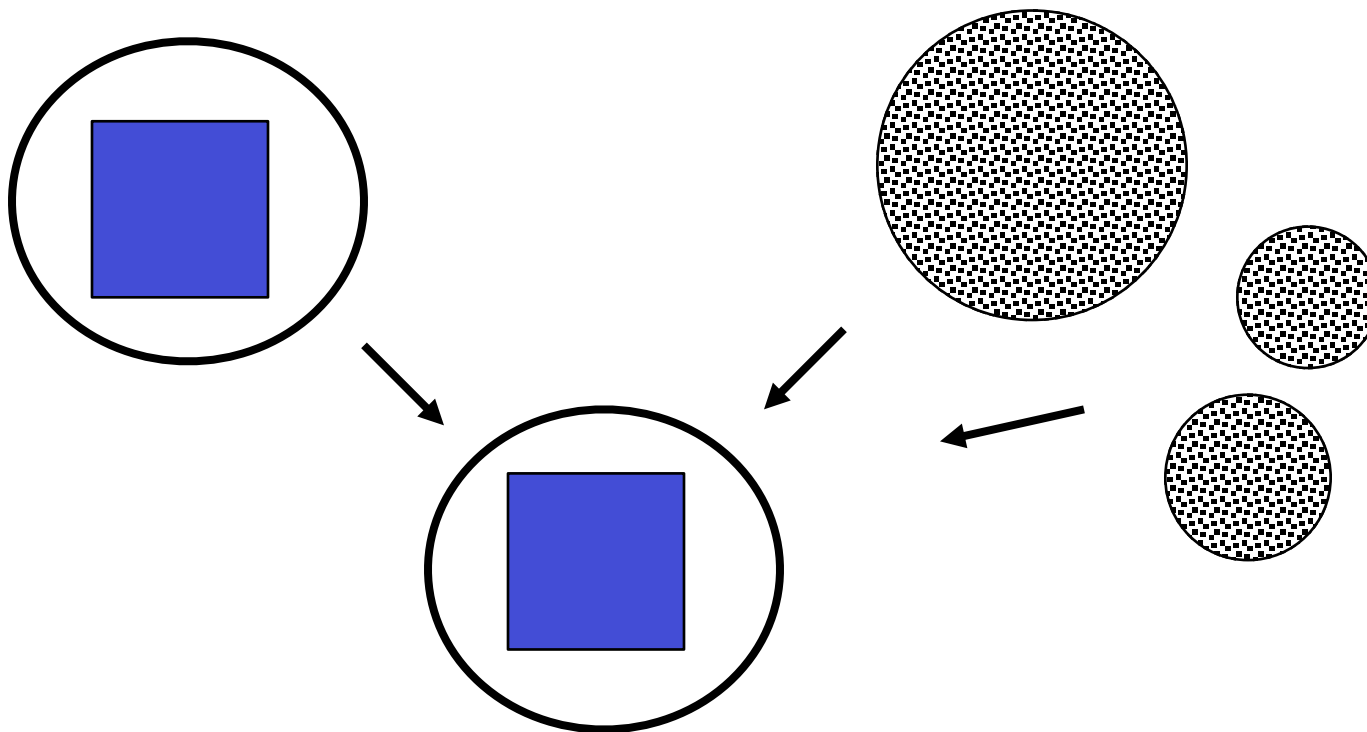
“Mary poured Bill
some wine”



She granted him his wish.
She gave him that premise.
She allowed him that privilege.
She won him a prize.
She bequeathed him a farm.

She gave him a headache.
She showed me the view.
She told me a story.
She denied him the job.
She refused him that courtesy.

Borrowing a Compression By Blending



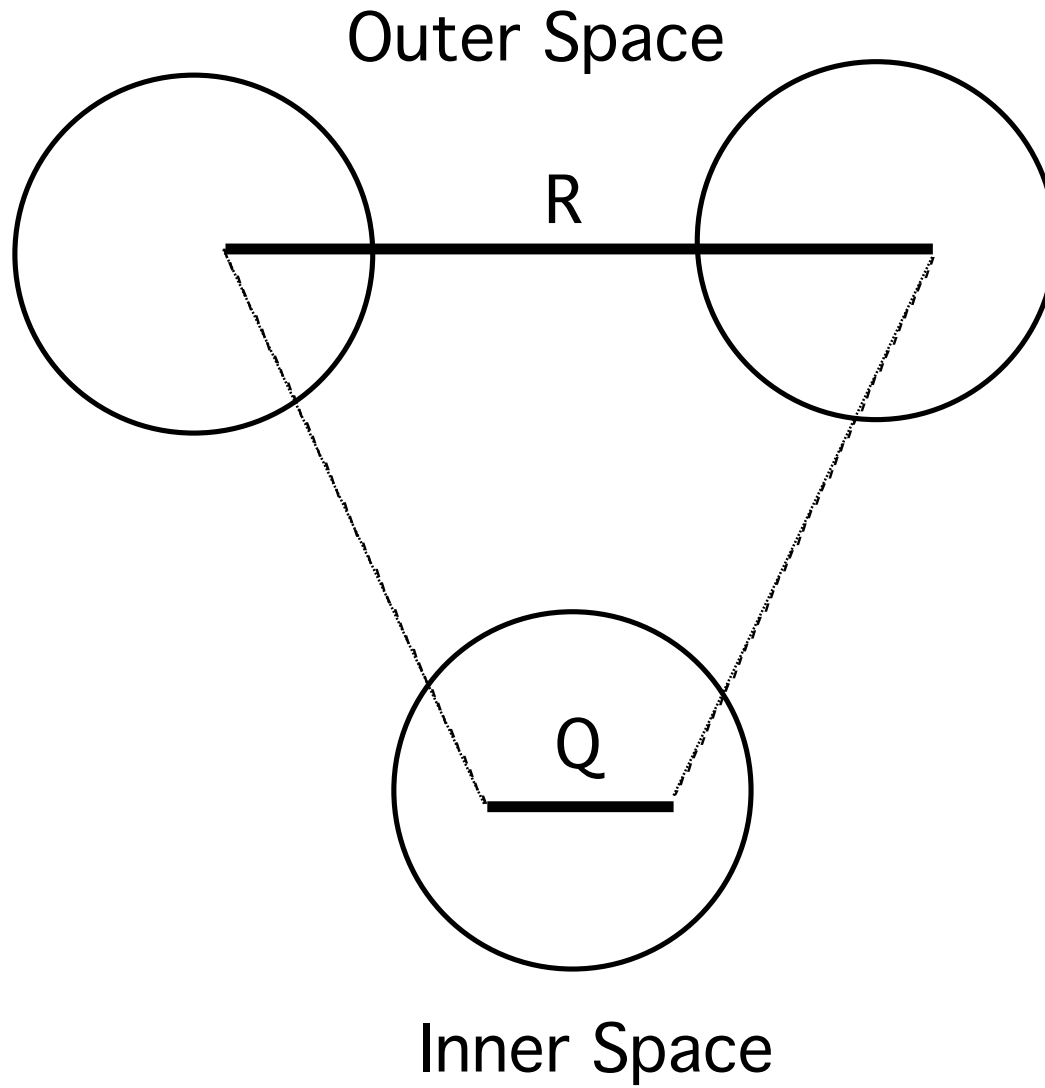
Borrowing a Compression Borrows Constructions

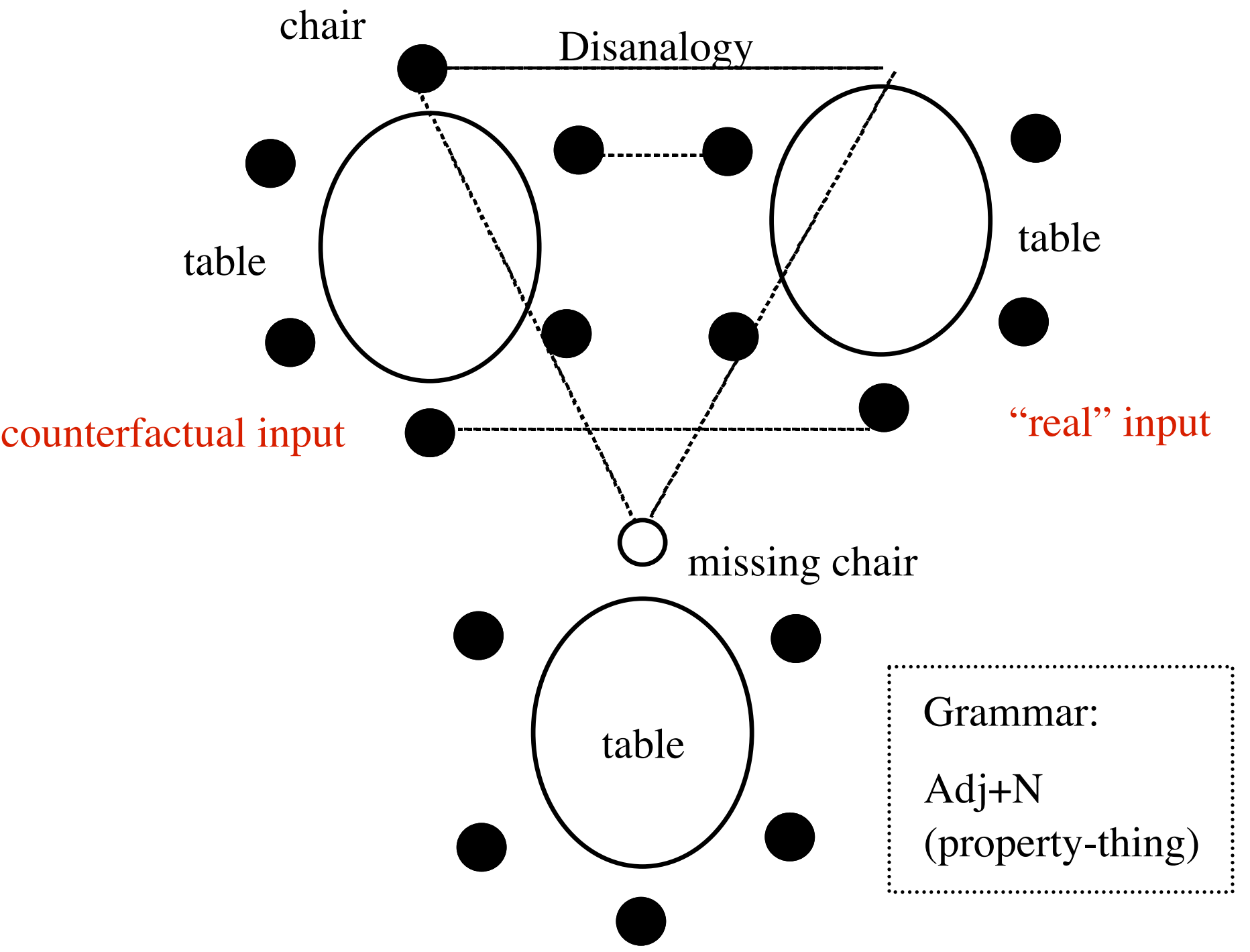
“You are digging your own grave.”

**“If Clinton were the Titanic, the iceberg
would sink.”**

**This happens routinely: basic metaphors,
force-dynamics, mind is a body moving in
space, fictive motion, image-schemas,
images, . . .**

Compressing
outer-space vital relations
into
inner-space structure
in the blend





caffeine headache

money problem

nicotine fit

security problem

arousal problem

insulin coma

insulin death

food emergency

honesty crisis

rice famine

Safe beach.

Fake gun. (Coulson & Fauconnier)

Place the flowers in front of the
missing chair.

There is a gap in the fence.

DOUBLE-SCOPE COMPRESSION IN A TWO-WORD NUTSHELL

Boat house

Red pencil

House boat

Green house

Angry man

Black kettle

Child-safe

Government bond

Sugar-free

Fossil Poetry

Dolphin-safe

Caffeine Headache

Shark-safe

Arousal Problem

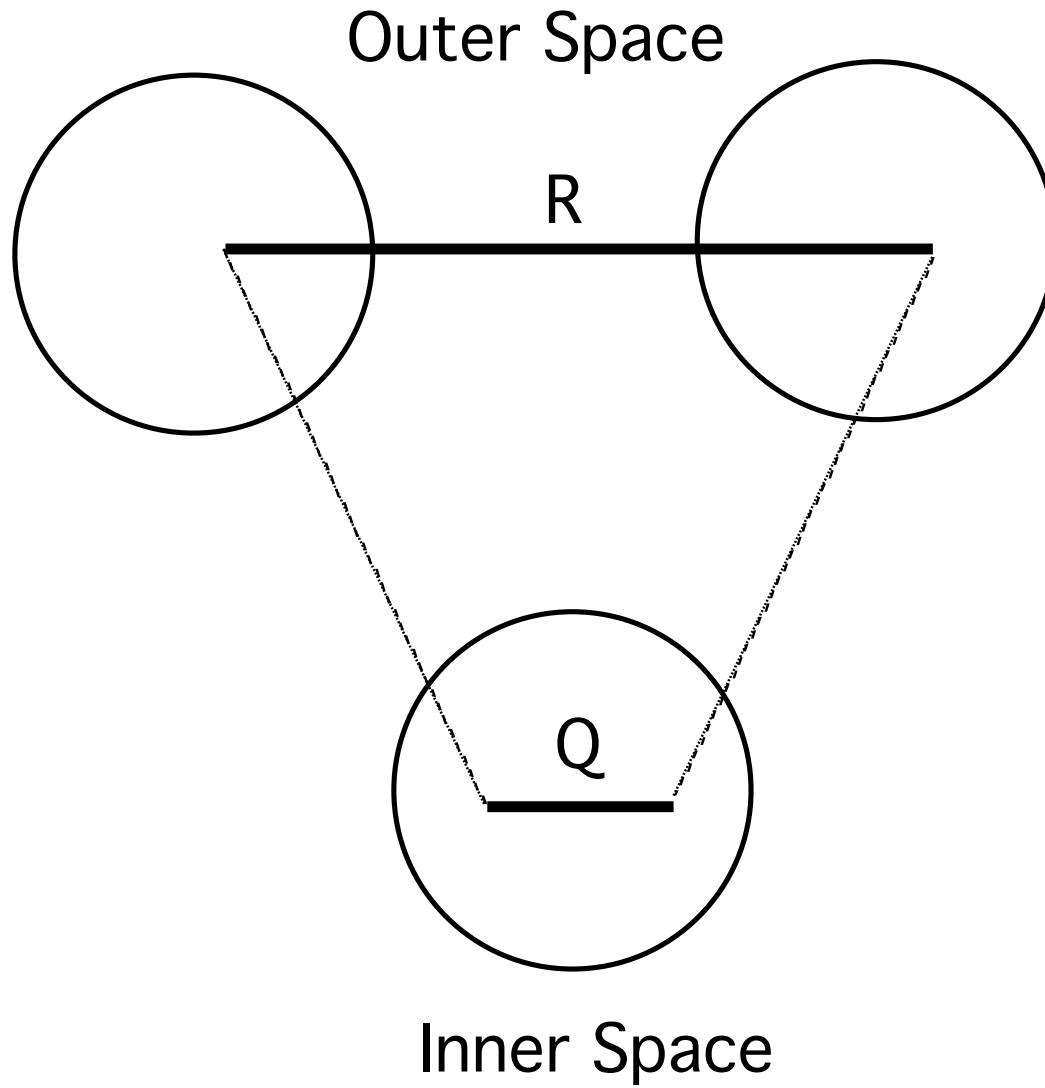
Cruelty-free

Likely candidate. (Sweetser)

Guilty pleasures.

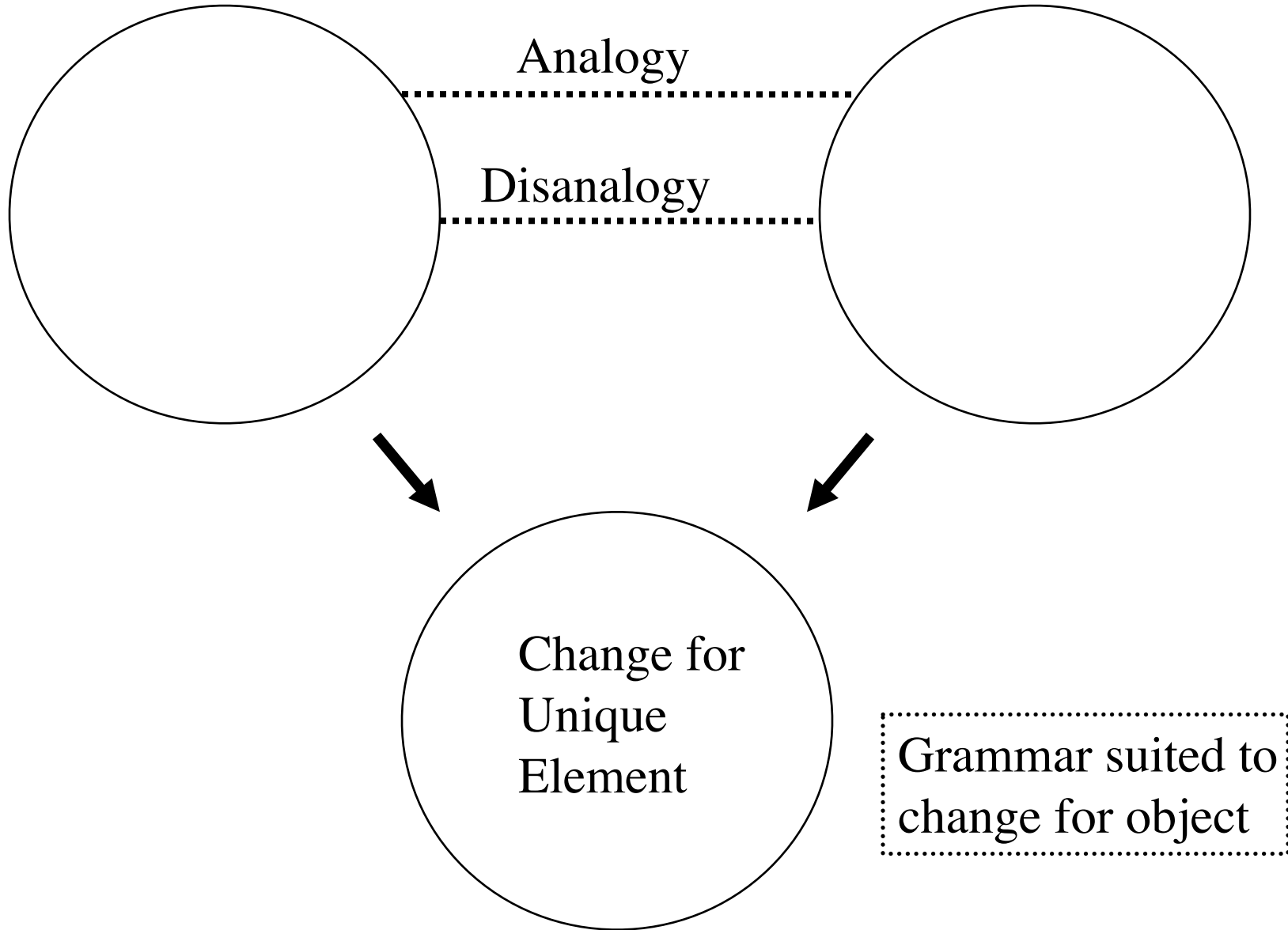
Silver honeymoon.

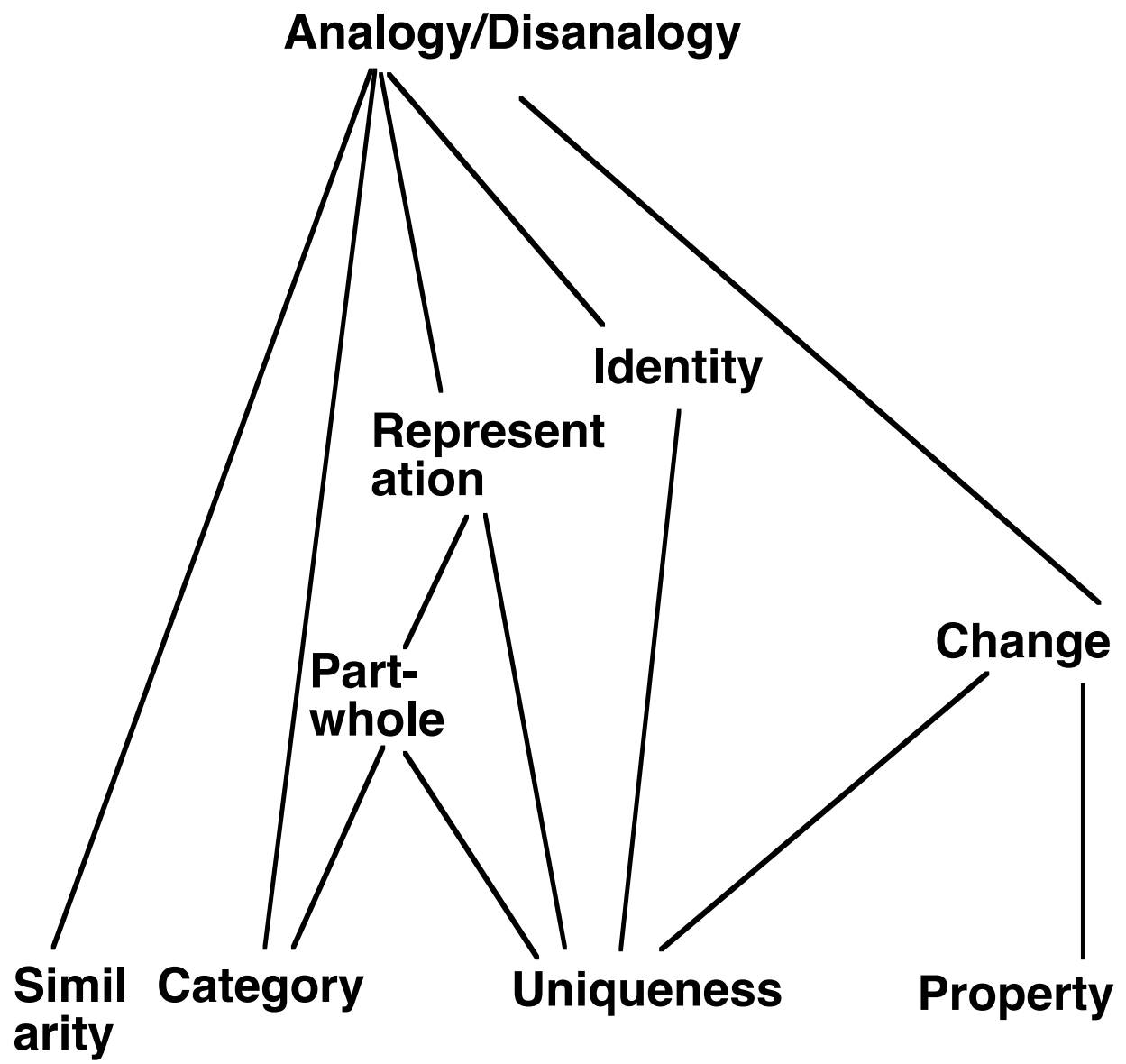
Red ball.

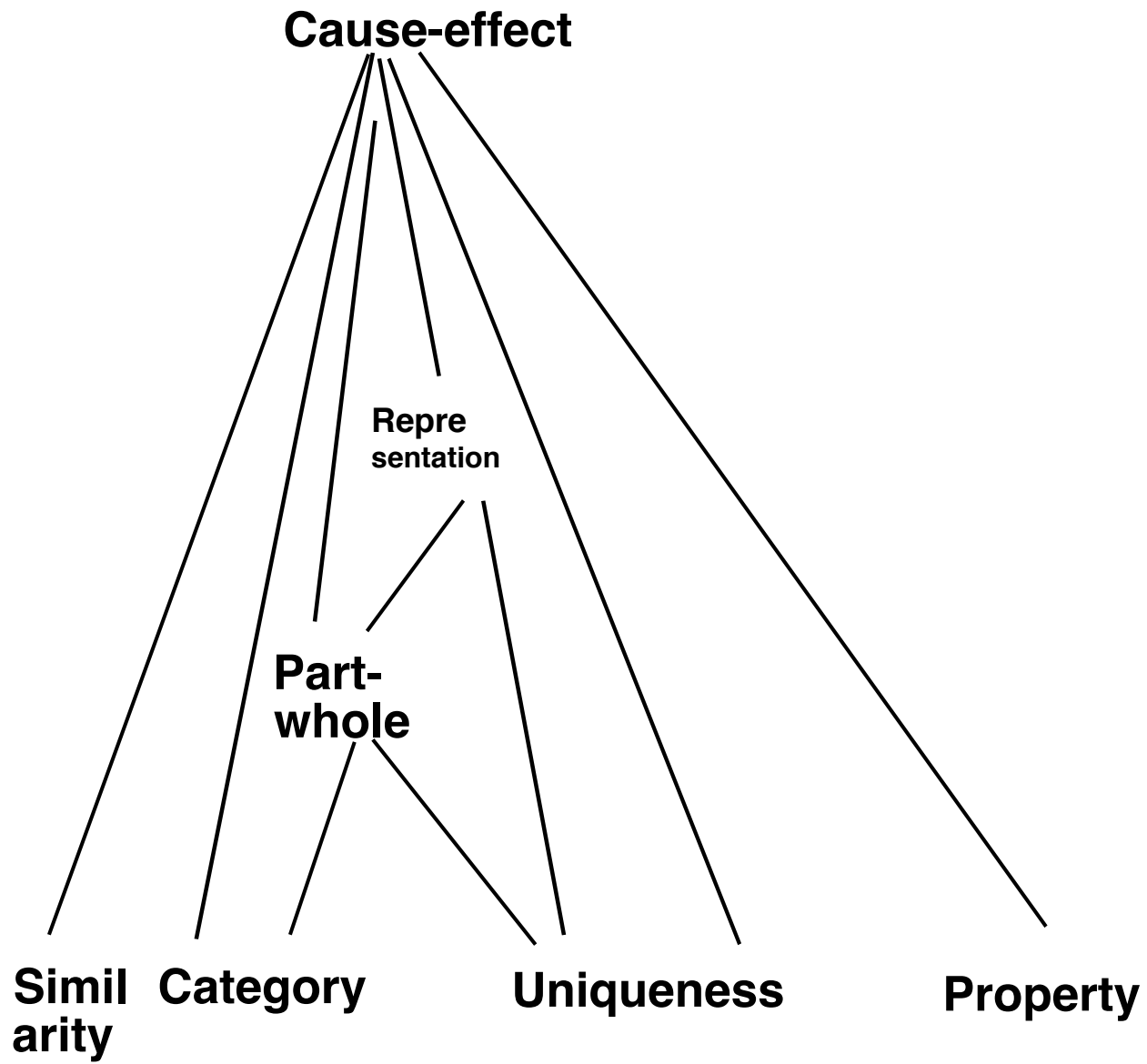


Outer-space ⇒ **Inner-space**

Blending compresses "outer-space" mappings into inner-space human-scale elements that can then be expressed through existing basic human-scale grammatical constructions.

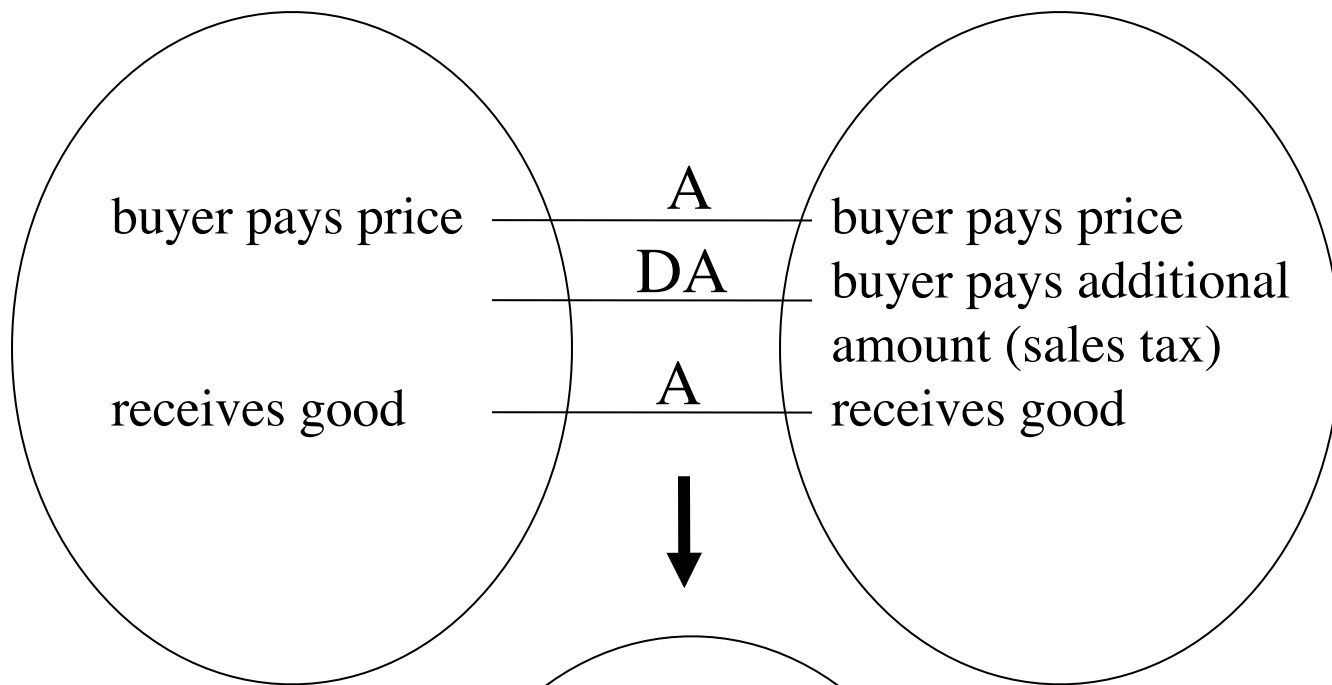






Get No Sales Tax

"At South Shore
Lumber, get no sales
tax Friday, Saturday,
Sunday, and Monday!"



buyer pays price
 receives good
 receives no sales tax
 (i.e. absence of sales tax)

Grammar:
 Transitive
 Adj+N
 (property-thing)

We are lucky we're not
chickens

“If we were all chickens, you, William, would be about Elizabeth’s age, you, Peyton, would be about Dad’s age, and me, Dad, and Mom would all be dead of old age. We are all five alive. We are lucky we are not chickens.”

Bang Shot: Child's Description of a New Constellation

“It's a man. He was a soldier in the Revolutionary War. All of the members of his troop were killed, and the British were starting to come in his direction. So he hid inside the barrel of a cannon. But then reinforcements arrived, and fired off the cannons. Now, this cannon was not lowered, so it fired him into the sky, and there he is. But he doesn't know he's dead, so he keeps running across the sky, trying to find a way back into the Revolutionary War.”

- Time & Space

Urban blight

The experts concluded that if the community were to be healthy, if it were not to revert again to a blighted or slum area, as though possessed of a congenital disease, the area must be planned as a whole. It was not enough, they believed, to remove existing buildings that were unsanitary or unsightly. It was important to redesign the whole area so as to eliminate the conditions that cause slums—the overcrowding of dwellings, the lack of parks, the lack of adequate streets and alleys, the absence of recreational areas, the lack of light and air, the presence of outmoded street patterns. It was believed that the piecemeal approach, the removal of individual structures that were offensive, would be only a palliative. The entire area needed redesigning so that a balanced, integrated plan could be developed for the region including not only new homes but also schools, churches, parks, streets, and shopping centers. In this way it was hoped that the cycle of decay of the area could be controlled and the birth of future slums prevented.

—Justice William O. Douglas, 1954 opinion on the constitutionality of the Federal Urban Renewal Program

Ghost of Northern Light

As we went to press, Rich Wilson and Bill Biewenga were barely maintaining a 4.5 day lead over the ghost of the clipper Northern Light, ...

The new Club World cradle seat. Lullaby not included.



Introducing the unique new business class cradle seat. It doesn't simply recline but tilts as a whole raising your knees and relieving your body of stress and pressure. Pity you may not be awake to enjoy all the other changes on new Club World.

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The Economist

AUGUST 9TH - 15TH 1997

BOOMING CALIFORNIA
page 19

ASPIRIN'S
FIRST 100 YEARS
page 69

Lovely while it lasts



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Subscription	0.07	Yearly	0.68
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Printing	0.00	Yearly	0.00
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- Time & Space

- ◆ **Integration networks.** Conceptual products are never the result of a single mapping. What we have come to call "conceptual metaphors," like TIME IS MONEY or TIME IS SPACE, turn out to be mental constructions involving many spaces and many mappings in elaborate integration networks constructed by means of overarching general principles. These integration networks are far richer than the bundles of pairwise bindings considered in recent theories of metaphor.

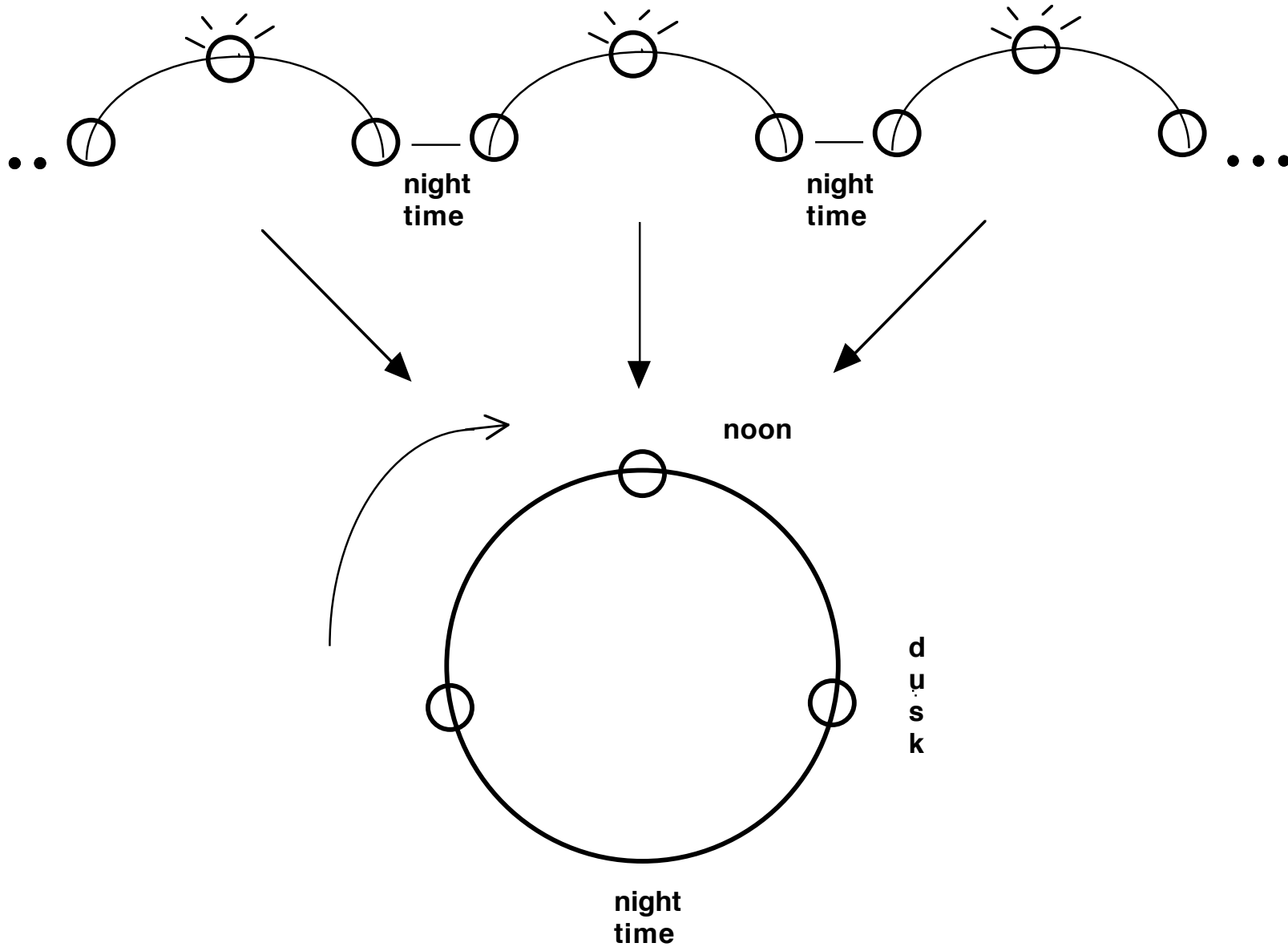
- ◆ **Cobbling and sculpting.** Such integration networks are never built entirely on the fly nor are they pre-existing conventional structures. Integration networks underlying thought and action are always a mix. On the one hand, cultures build networks over long periods of time that get transmitted over generations. Techniques for building particular networks are also transmitted. People are capable of innovating in any particular context. The result is integration networks consisting of conventional parts, conventionally-structured parts, and novel mappings and compressions.

- ◆ **Compression.** A remarkable conclusion of recent work which was overlooked by both early metaphor theory and early blending theory is that integration networks achieve systematic compressions. The ability to use standard techniques and patterns of compression and decompression enables us to work at once over elaborate integration networks. For example, a cause-effect relation connecting different mental spaces in the network may be compressed into a representation relation or an identity relation within the integration network. Well-known examples often discussed in the blending literature include *The Grim Reaper*, *Digging one's own grave*, *Clinton and the Titanic*. For TIME AS SPACE, watches, clocks, and other time-telling devices anchor *timepiece* blends with powerful built-in compressions.

- ◆ **Inference.** Inference transfer is not in itself the driving force behind metaphor. In fact, it is typical for "source-domain" inferences to be violated in the emergent blended space. This is because topologies in the multiple inputs may clash, so that not everything will project to the blended spaces.

- ◆ **Emergent structure.** The focus on single mapping and inference transfer in early metaphor theory left out many of the powers of integration networks, in particular the ability to develop emergent structure based on pre-existing conceptual structures and to achieve compressions across them. In fact, as we shall see below, the metaphorical mappings that seem most fundamental and observable, such as SPACE TIME, can themselves be emergent in elaborate networks with successive blending.

- Time & Space



The Mirror Network for the Blended Day

In the generic space, there is a single abstract day with times, and it applies to all the individual days. The analogy connection between corresponding times in distinct days is compressed in the blend into an identity connection, so that noon yesterday, noon today, and noon tomorrow in the different input spaces are felt to be the same noon in the blend. In each input space, a single day runs its course, just once. In the generic space, an abstract day runs its course, just once. But in the blend, the day perpetually runs its course and then starts again, going through the same progression of times, e.g., the dawn, the morning, noon, the afternoon, the evening, and night. This is the Blended Day Network.

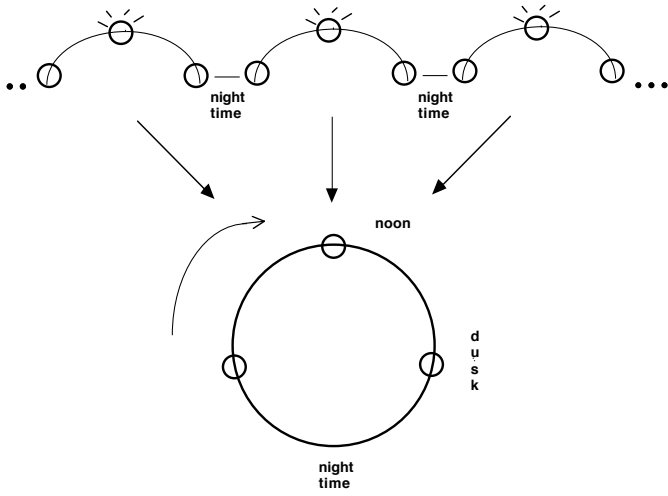
Language for blended day, week, month, year . . .

In its blended space, we "reach noon again." Phrases like "your morning coffee," "swallows disappear and bats appear in the early evening," and even "this park closes at dusk" pick out structure in the blended space of the Blended Day Network. This compression of outer-space analogy relations between the inputs into identity in this blend uses the compression principle of time superposition. Of course, there are many similar integration networks for different units of time, giving us blended notions of a week ("your weekly workout"), a month ("your monthly visit to your mother), and a year ("your annual checkup").

The Timepiece and the Blended Day

The watch depends on the existence of the Blended Day integration network. One input to the integration network for the watch is the cyclical blended space in the Blended Day network (and that blended space stays connected to the rest of its network). The other input to the integration network for the watch is the Rotating Rods: that is, the physical appearance of the watch itself at any moment, with the thin rods in a specific position and each of them moving. That input is also inherently cyclical: the rods go through the same cycle of positions over and over again.

The cross-space mapping is obvious if a little bizarre: one cycle of the Cyclical Blended Day maps onto two cycles of the Rotating Rods. When the Cyclical Blended Day reaches noon, the positions of the Rotating Rods, pointing at 12, begin their cycle again. After two more cycles of the Rotating Rods, it is noon again in the Cyclical Blended Day.



— A

M

- 1. Three hours went by, and then he had dinner.**
- 2. *Three feet went by, and he was at the door.**
- 3. Minutes are quick but hours are slow.**
- 4. *Inches go by faster than feet.**
- 5. Those three hours went by slowly for me, but the same three hours went by quickly for him.**
- 6. For me, the hours were minutes but for her the minutes were hours.**
- 7. At the end of the three hours, you will have solved the problem, but at the end of the same three hours, he will have solved it and five more.**
- 8. Time came to a halt.**

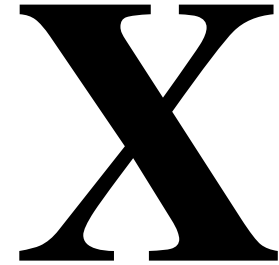
- 9. Sure, it's Friday afternoon, but Monday morning is already staring us in the face.**
- 10. Next week was an eternity away.**
- 11. For me, the three hours were forever, but for her, they did not exist.**
- 12. It'll go by faster if you stop thinking about it.**
- 13. Our wedding was just yesterday.**
- 14. Where have all those years disappeared?**
- 15. Next week was an eternity away.**
- 16. I didn't see those years go by.**

- In the domain of space, units of measurement are not moving objects. In the blend, they are.
- In the domain of space, observers are not at the same location and are not looking in the same direction. In the blend, they are. Accordingly, in the blend, everyone sees the same moving objects (that is, sees the same temporal units).
- In the domain of space, not all moving objects are on the same path. In the blend, they are.
- In the domain of space, observers in the same location looking in the same direction would see not only the same moving objects but also the same speeds for those objects. But in the blend, observers are in the same location and looking in the same direction and seeing the same moving objects but they perceive (in principle) different speeds for those objects.
- In the domain of space, all the objects moving along a path exist, and the closer ones are perceived as closer. But in the blend, one more distant can seem closer, and some of the objects can be non-existent.
- In the domain of space, you cannot speed up or slow down the speed of the moving object by the quality of your attention. But in the blend, varying your attention can change the speed of the moving object.

E: E is the input of Events. Human beings are expert at parsing the world into events (selling shoes, solving math problems, dining) and objects. Here we take as given that people can think of events and objects and refer to them. This expertise includes understanding event shape, including ordering and event type, and categorizing different events as belonging to the same type or to different types. Event spaces can include subjective experience of those events. Under this parsing, a lecture is an event with many participants - the lecturer, the audience, the support staff - and each participant experiences the same event in a variety of different possible ways. So the lecture can be painful for me, pleasant for you, difficult for the lecturer, easy for the technician, challenging for the interpreter.

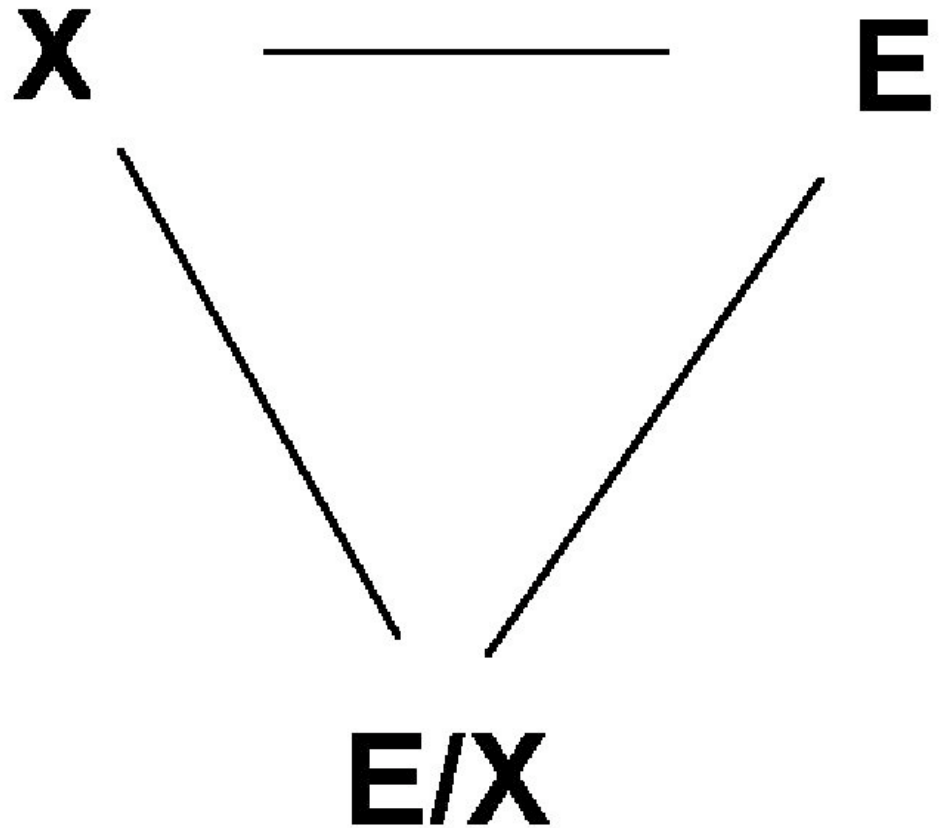
A large, bold, black serif capital letter 'E' is positioned on the right side of the slide. It is a simple, classic design with a thick vertical stem and two horizontal bars.

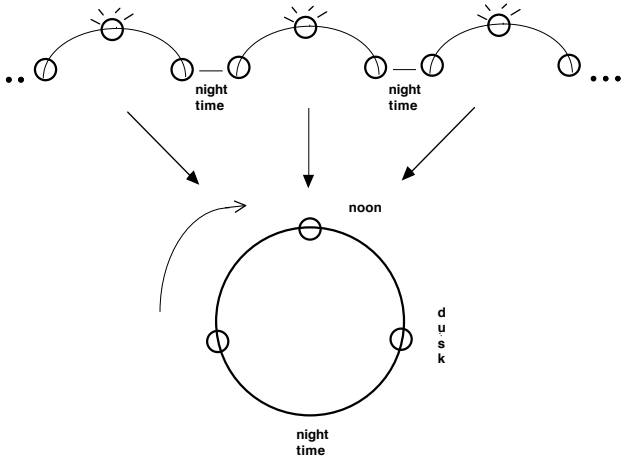
X: An important kind of event for human beings is motion through physical space from point A to point B, with corresponding objective and subjective experiences. We call this subset of E the input of experienced motion through physical space. Within X, we have a number of existing correlations. If we travel from A to B and then B to C, we know that the event of traveling from A to B is over before the event of traveling from A to C is over. This comes from our ability to order events. So, all else being equal, relative length corresponds to ordering of events. AB is shorter than AC; the event <AB> is over before the event <AC>. In this space, the use of the notion of fast versus slow is not the one used in physics but correlates with the duration of events. So, in English, we say that going from A to B is "faster" than going from A to C, even if our speed in the technical sense is the same. In X, the event of traversing the path is connected with the path.

A large, bold, black serif letter 'X' is positioned on the right side of the page. It is centered vertically relative to the main text block.

E/X: Events are Actions, Event Structure

Metaphor. According to this notion, we can "go through the lecture" just as we can "go through the park" because in the blend, the event is motion from one point to another. In E/X, any event has length and experienced motion (including speed, in the everyday sense of fast and slow rather than in the technical sense of physics). In E/X, the traveler of input X is fused with the experiencer of input E. The event in E is fused with the event of traversing the path in X and with the path in X. By this means, in the blend, an event becomes a path, and completing the event is traversing the path. As we can say that one stretch of road is faster than another because the event of traveling the first is over before the event of traveling the other, just so, we can say that one event is faster than another. E/X is a blend of a quite diffuse domain of events with a rather specific human-scale subcase of traversing a path, so that in the blend the perhaps diffuse event can be transformed to human scale. In the blended space, an event is an origin and a destination. Two travelers may begin at the same origin and arrive at the same destination, yet they might traverse different paths, so the event can be long for one but short for the other, and can be slow for one and fast for the other.





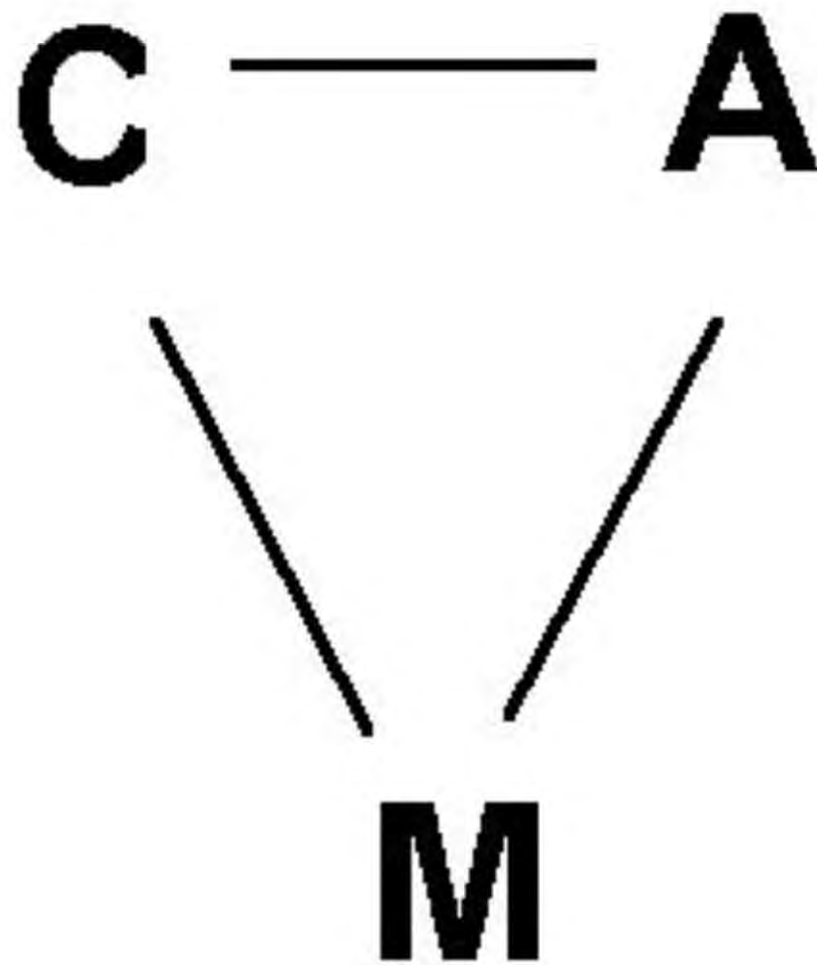
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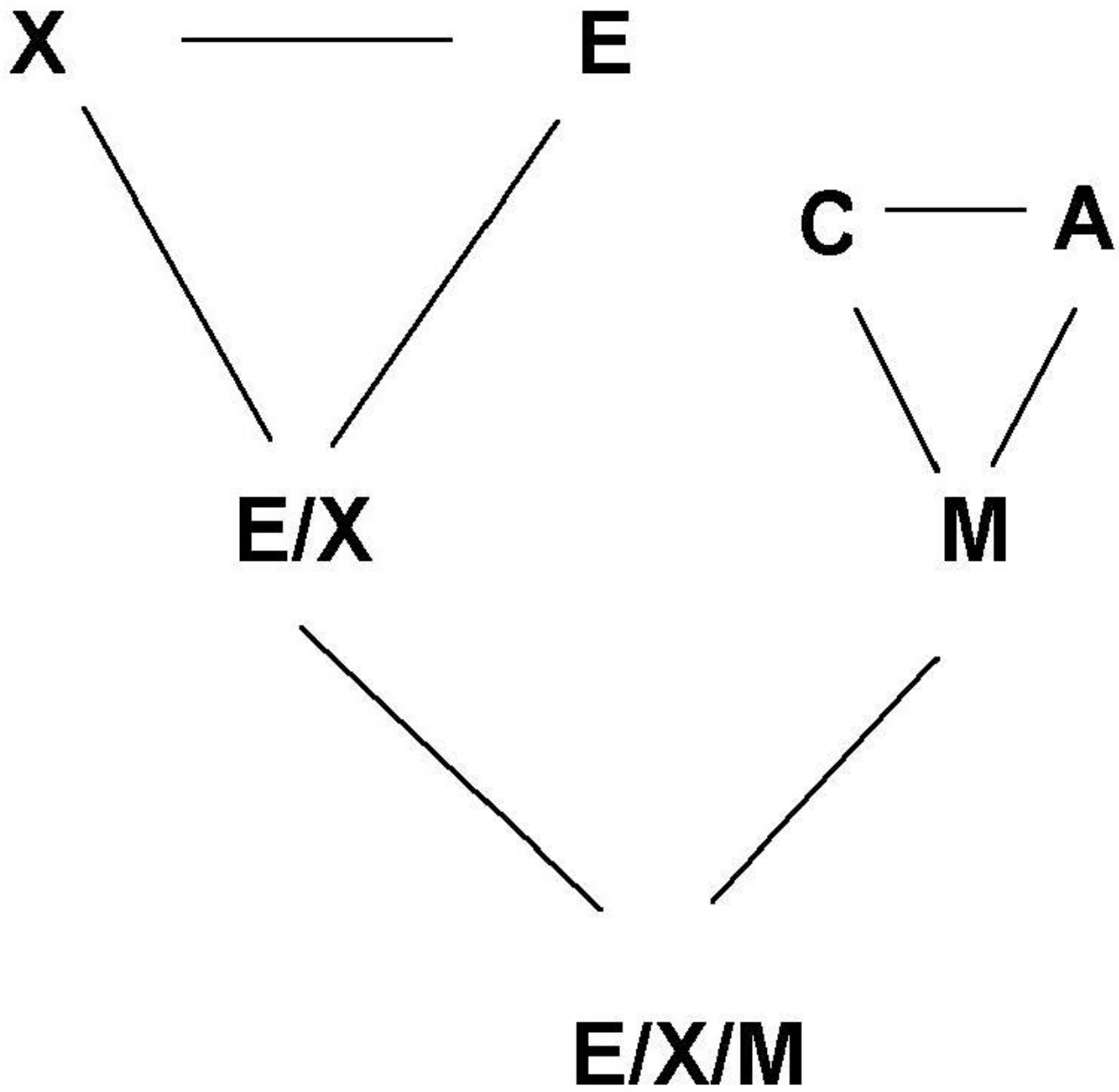


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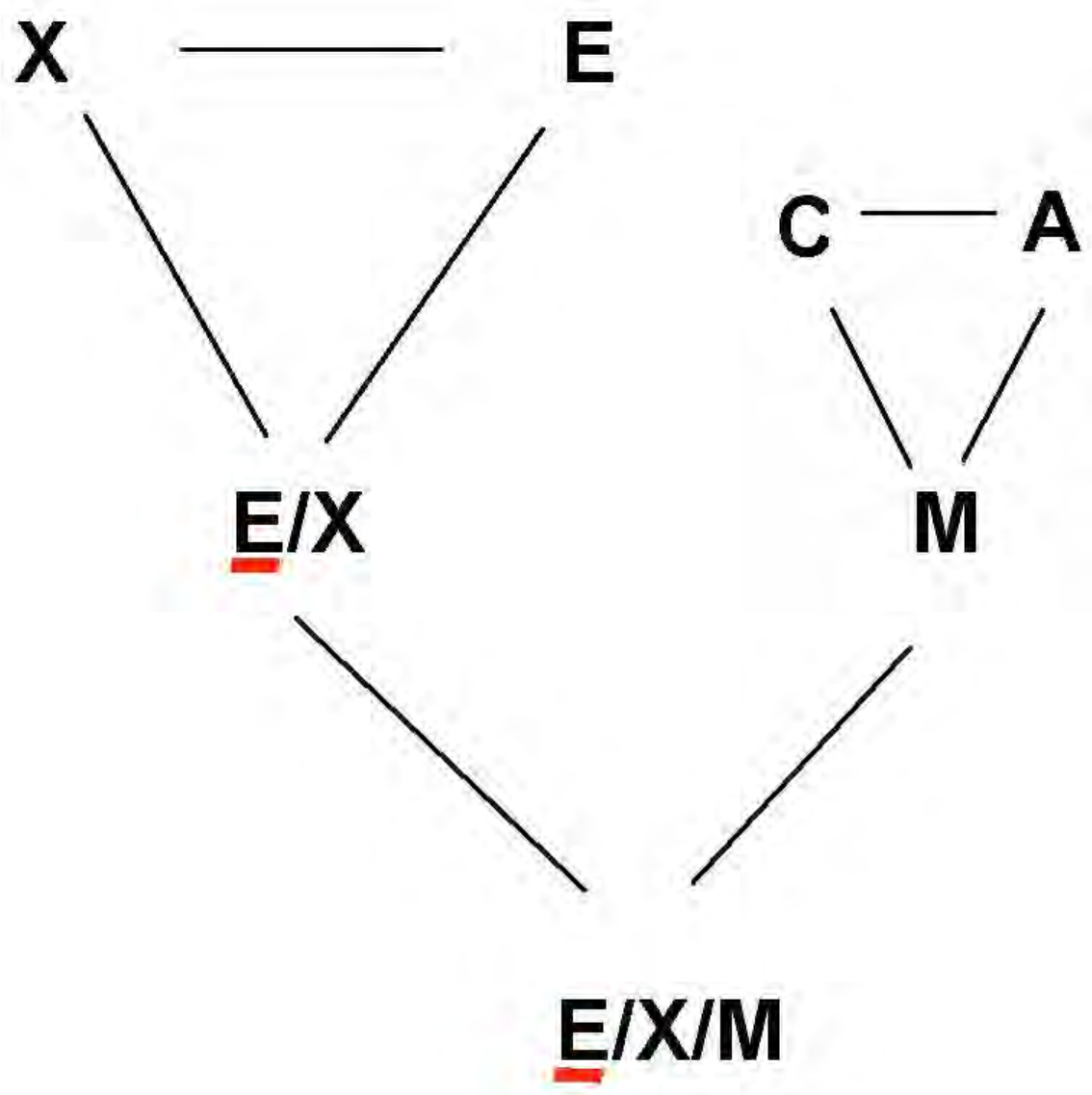


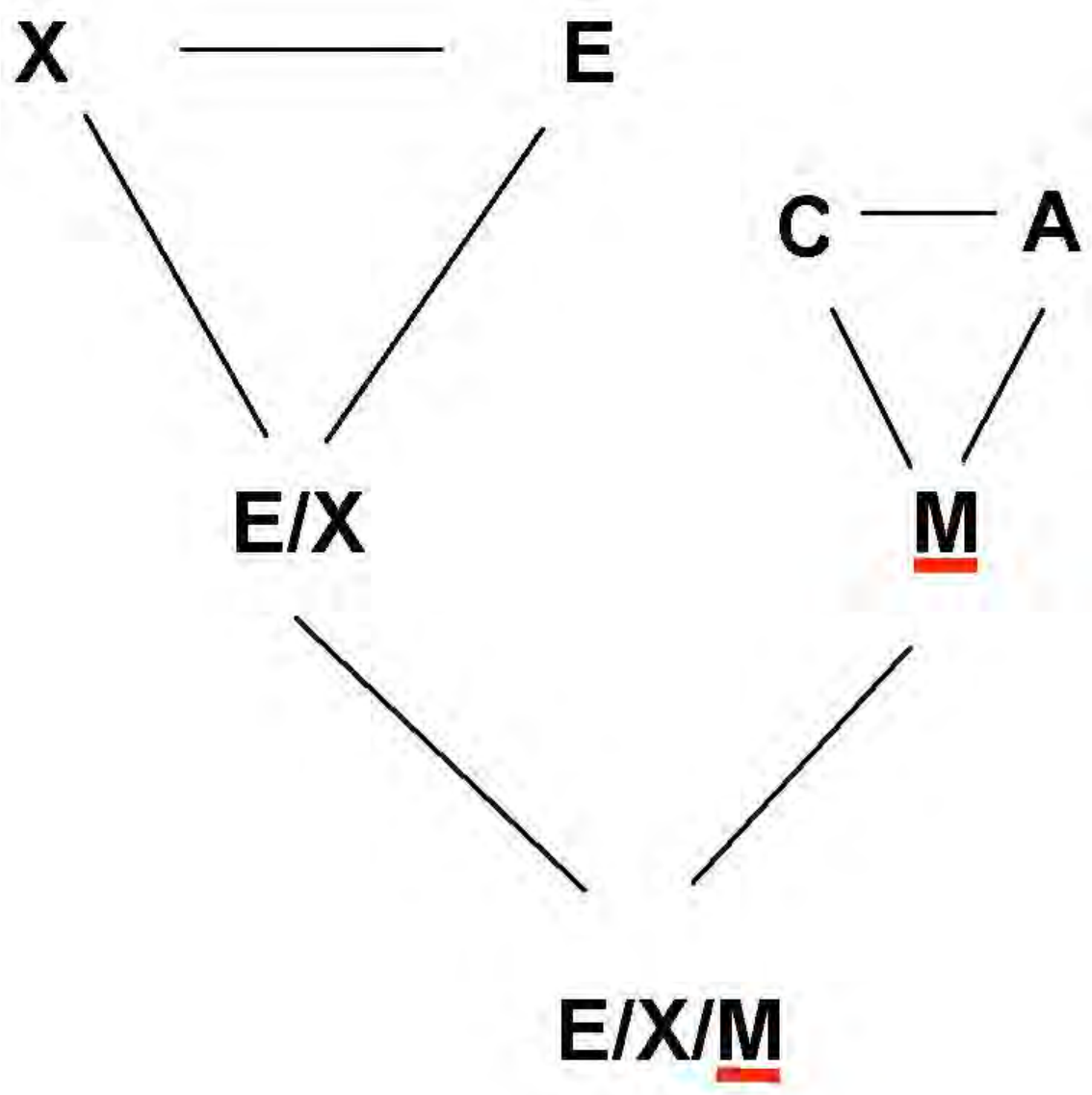
E/X/M:

"I went through the first hour much more quickly than the second hour."

Mastery of the full network allows simultaneous access to objective length and subjective length.

"It's amazing how the eight-hour work day is longer on Monday than it is on Friday."





E/X/M:

So, you ask how long it took me to go through the lecture, and I say, “I went on too long; it was an hour and five minutes long.”

E/X/M:

“Centuries.”

-It’s amazing how the eight-hour work day is **longer on Monday than it is on Friday.**

- Remember that an hour with your parents is faster for me than it is for you.

X' :

The old toll house went by.

The rough stretch of road went by.

The forest went by.

In relative motion, the path and all the things along it move, relative to you. **X** has its relative motion counterpart, call it **X'**. **X'** is accurately described with expressions like:

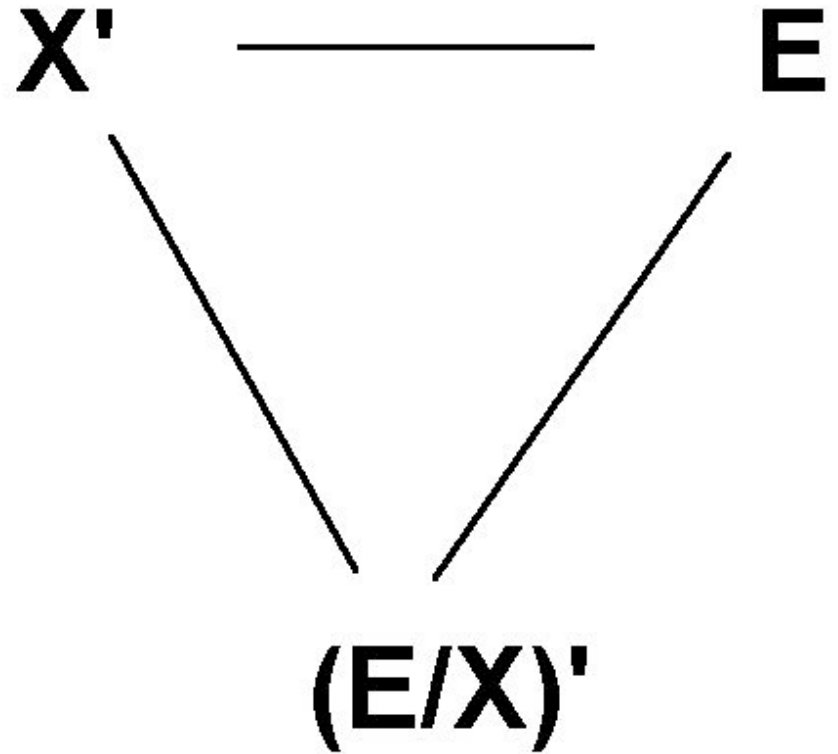
That stretch of road went by effortlessly.

The first five miles went by effortlessly.

X'

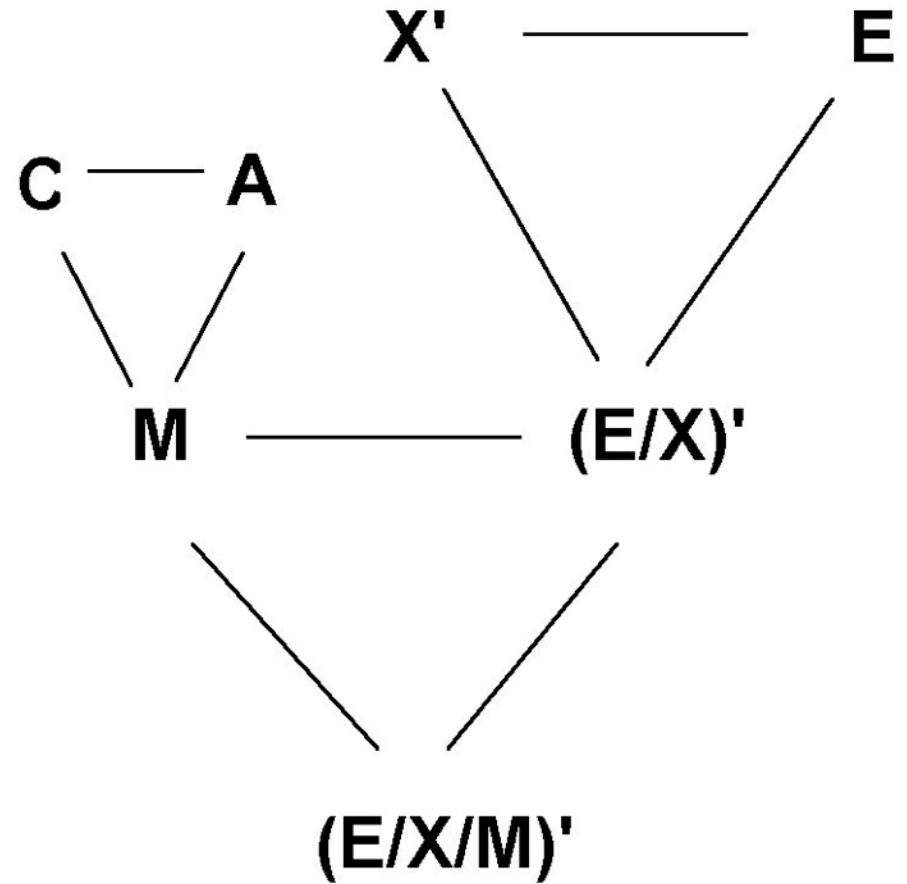
**The lecture went by
effortlessly.**

**The party went by
pleasantly.**



$(\underline{E}/X/M)'$

- Friday always goes by faster than Monday.
- The hours sped by for him but dragged by for me.
- It took centuries for the hour to pass.
- Those three hours went by slowly for me, but the same three hours went by quickly for him.



$(E/X/\underline{M})'$

- Minutes go by faster than hours.
- The same hour will go by whether you are suffering or having fun.

"Time goes by really slowly.
At the same time, it goes by
really fast."

(CNN, said by a man waiting for word on an
American named "Michael" missing in the bomb
detonations in London in July, 2005).

More Networks

Conceptual work is never-ending, and we can continue to bring more spaces and even networks into play with the elaborate integration network E/X/M. We can also use general conceptual techniques on that existing network.

One standard conceptual technique is to project agency into the occurrence of events, according to which, in the blend, the event is caused by the agent. In the blend with objective time (i.e., shared universal events, such as hours, minutes, etc.), all egos are constrained to move at the same rate. If we project agency to that causal constraint, all egos are moved through the shared universal events at the same rate by an agent, in this case often referred to as "Time," or, historically, "the hour." In this new blend, the emergent entity "Time" derives its motion from the network in which times move, but derives its landmark from the network in which Ego moves. Importantly, this new agent is not a projection from the network of moving shared events (hours, etc.). It is not a particular hour that drives us along, but the movement of Time: "Time marches on," "Time waits for no man," "Never fear: time will carry us along," and, from *Macbeth*:

Come what come may

Time and the hour runs through the roughest day

(Act one, scene three)

R/S:

Consider as an additional network that can come into play our independent integration network involving memory and physical space. In memory, events can be "close" or "distant," "far apart," "hard to access." Relevant linguistic data indicating blends of memory and physical distance include "Calling up things from the depths of your memory," "Bringing a forgotten event to the surface."

(E/X/M)' — R/S

- Our wedding was just yesterday.

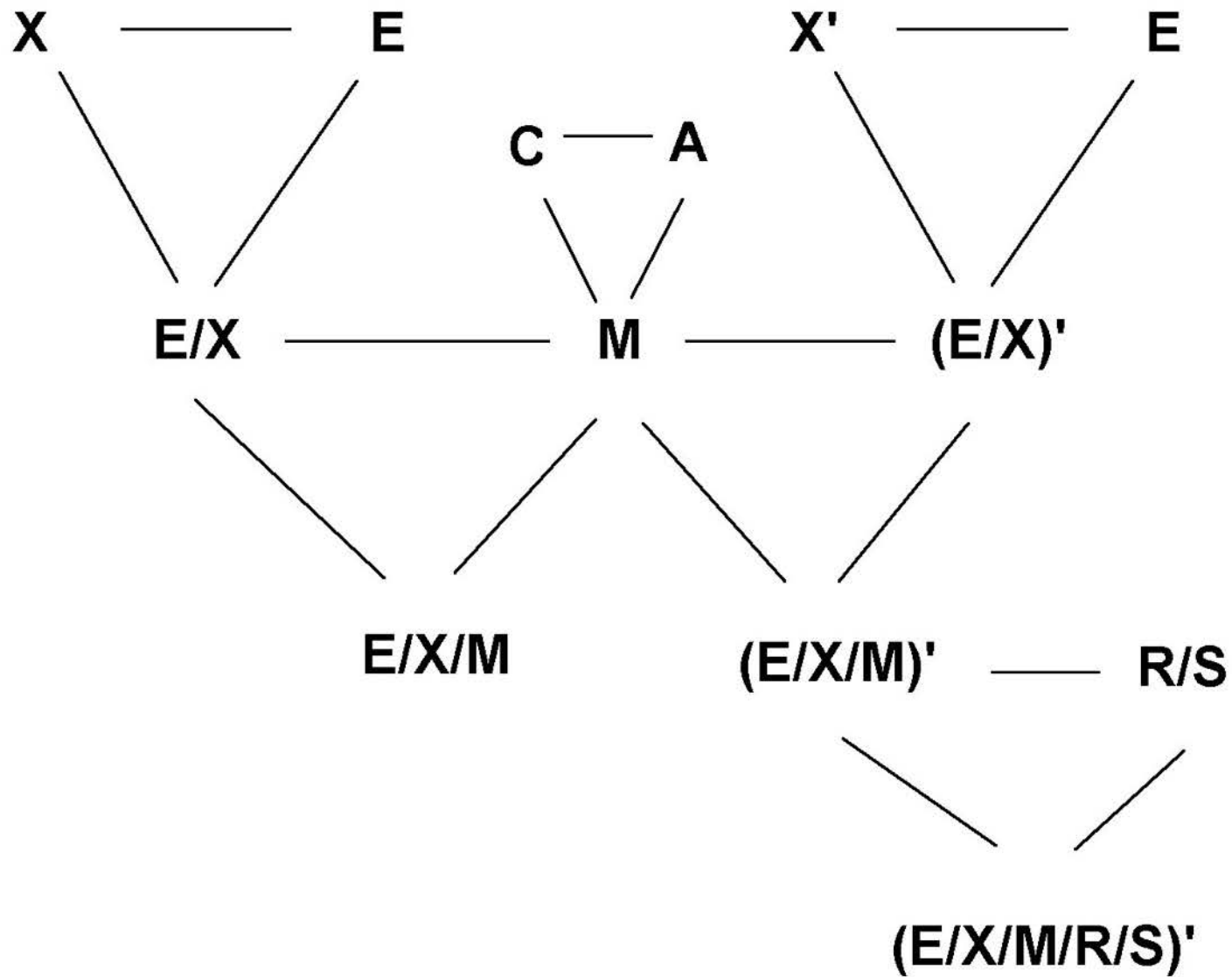
- Our wedding was just yesterday.

Where have all those years
disappeared?

(or, The years have really gone by
fast.)

- The days of my youth are so
close yet so far away.

(E/X/M/R/S)'



"Remarkable -- when I am sitting on a cushion on the floor, busy with scissors and glue pot, the time just vanishes. Before I know it the latticed rectangle of pale autumn sunlight has moved from the left wall across the floor to the other wall and Mrs. O'Carolan is calling me for supper. Perhaps time is flowing faster up there in the attic. Perhaps the accumulated mass of the past gathered there is pulling time out of the future faster, like a weight on a line. Or perhaps, more mundanely, it is only that I am getting older every year and that it is the accumulated weight of time behind me that is unreeling the years with ever-increasing speed. What a horrible thing it must be to grow older and find that ever-decreasing number of years hurrying you faster, faster toward your grave, as if time were impatient to be rid of you." (Ian McDonald, "Emily's Diary, November 5, 1913," in *King of Morning, Queen of Day*, pages 82-83.) (Noticed by Nathaniel Smith.)

- ◆ **Integration networks.** Conceptual products are never the result of a single mapping. What we have come to call "conceptual metaphors," like TIME IS MONEY or TIME IS SPACE, turn out to be mental constructions involving many spaces and many mappings in elaborate integration networks constructed by means of overarching general principles. These integration networks are far richer than the bundles of pairwise bindings considered in recent theories of metaphor.

- ◆ **Cobbling and sculpting.** Such integration networks are never built entirely on the fly nor are they pre-existing conventional structures. Integration networks underlying thought and action are always a mix. On the one hand, cultures build networks over long periods of time that get transmitted over generations. Techniques for building particular networks are also transmitted. People are capable of innovating in any particular context. The result is integration networks consisting of conventional parts, conventionally-structured parts, and novel mappings and compressions.

- ◆ **Compression.** A remarkable conclusion of recent work which was overlooked by both early metaphor theory and early blending theory is that integration networks achieve systematic compressions. The ability to use standard techniques and patterns of compression and decompression enables us to work at once over elaborate integration networks. For example, a cause-effect relation connecting different mental spaces in the network may be compressed into a representation relation or an identity relation within the integration network. Well-known examples often discussed in the blending literature include *The Grim Reaper*, *Digging one's own grave*, *Clinton and the Titanic*. For TIME AS SPACE, watches, clocks, and other time-telling devices anchor *timepiece* blends with powerful built-in compressions.

- ◆ **Overarching goals other than the projection of inference.** Inference transfer is not in itself the driving force behind metaphor. In fact, it is typical for "source-domain" inferences to be violated in the emergent blended space. This is because topologies in the multiple inputs may clash, so that not everything will project to the blended spaces.

- ◆ **Emergent structure.** The focus on single mapping and inference transfer in early metaphor theory left out many of the powers of integration networks, in particular the ability to develop emergent structure based on pre-existing conceptual structures and to achieve compressions across them. In fact, as we shall see below, the metaphorical mappings that seem most fundamental and observable, such as SPACE TIME, can themselves be emergent in elaborate networks with successive blending.

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner



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Ten Lectures on Mind and Language

<http://marktturner.org>

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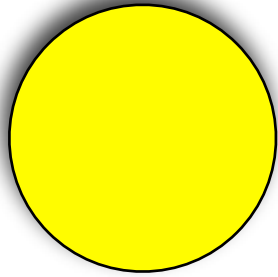
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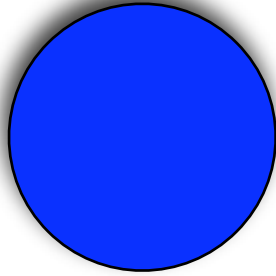
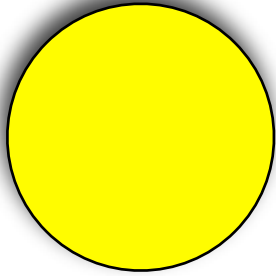
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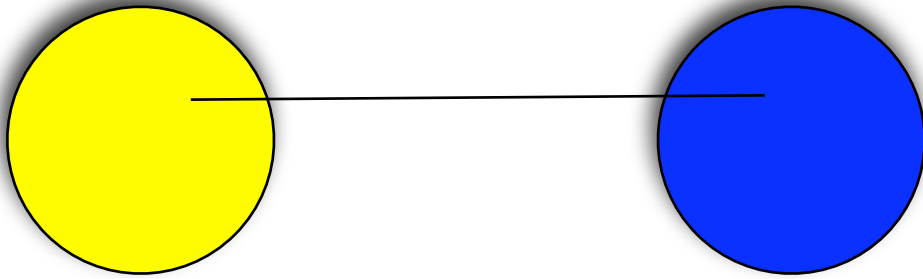
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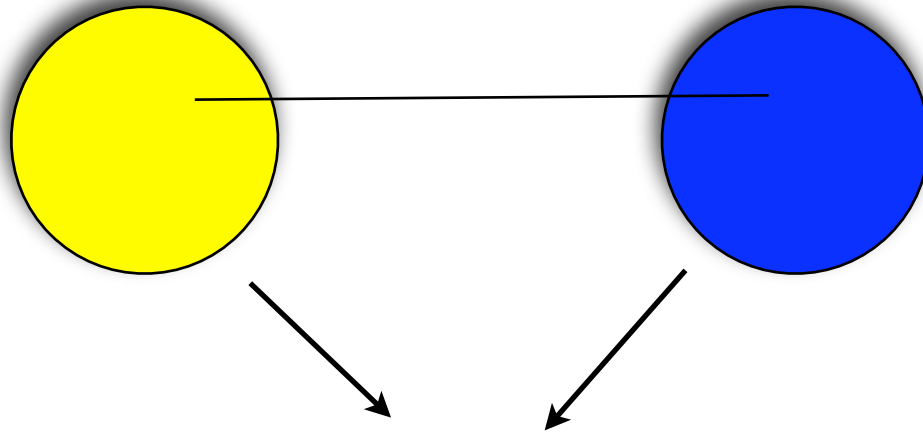
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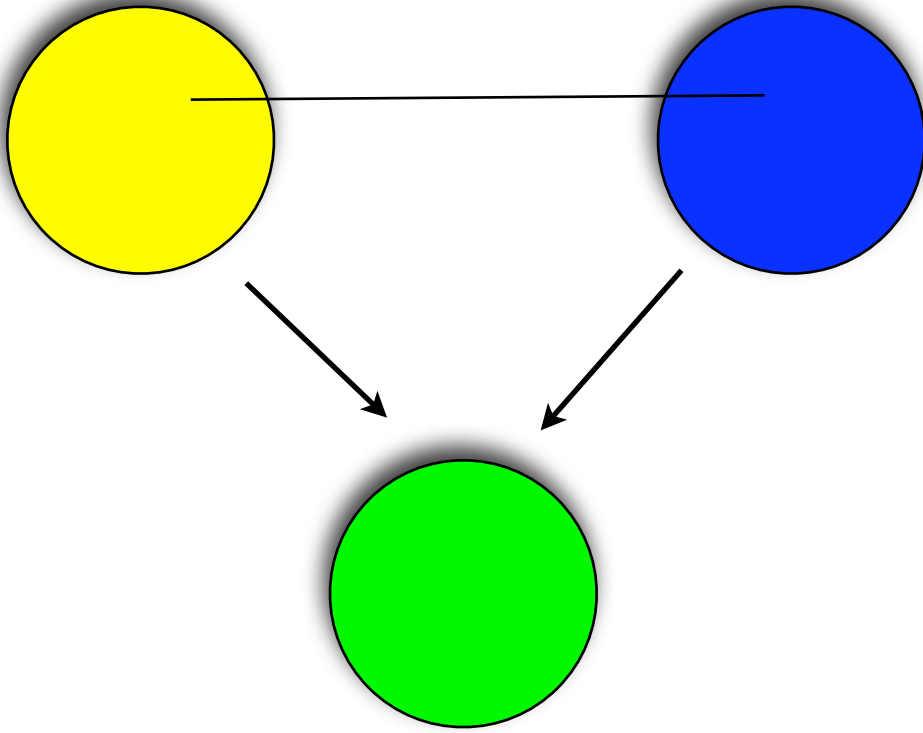
Frame Blends











Why God won't get tenure

1. Published only one book.
2. It was in Hebrew.
3. It had no references.
4. He did not publish it in referenced journals.
5. Some doubt He even wrote it Himself.
6. He is not known for His cooperative work.
7. Sure, He created the world, but what has He done lately?
8. He did not get permission from any review board to work with human subjects.
9. When one experiment went awry, He tried to cover it up by drowning all the subjects.
10. When sample subjects do not behave as predicted, He deletes the whole sample.
11. He rarely comes to class—just tells His students to read the Book.
12. It is rumored that He sometimes lets His Son teach the class.
13. Although He only has 10 requirements, His students often fail His tests.
14. He expelled His first two students for learning.
15. His office hours were infrequent and usually held on a mountain top.

Dante, *Inferno*, Canto XXVIII

Perch'io parti' così giunte persone,
partito porto il meo cerebro, lasso!
dal suo principio ch'è in questo troncone.
Così s'osserva in me lo contrapasso

Because I parted people so joined,
I carry my brain, alas, separated
from its root, which is in this trunk.
Thus is to be seen in me the retribution.

“If Clinton were the
Titanic, the iceberg
would sink.”

“You are digging your own financial grave.”

Seabiscuit: An American Legend, Laura Hillenbrand

An allegory of the American people:

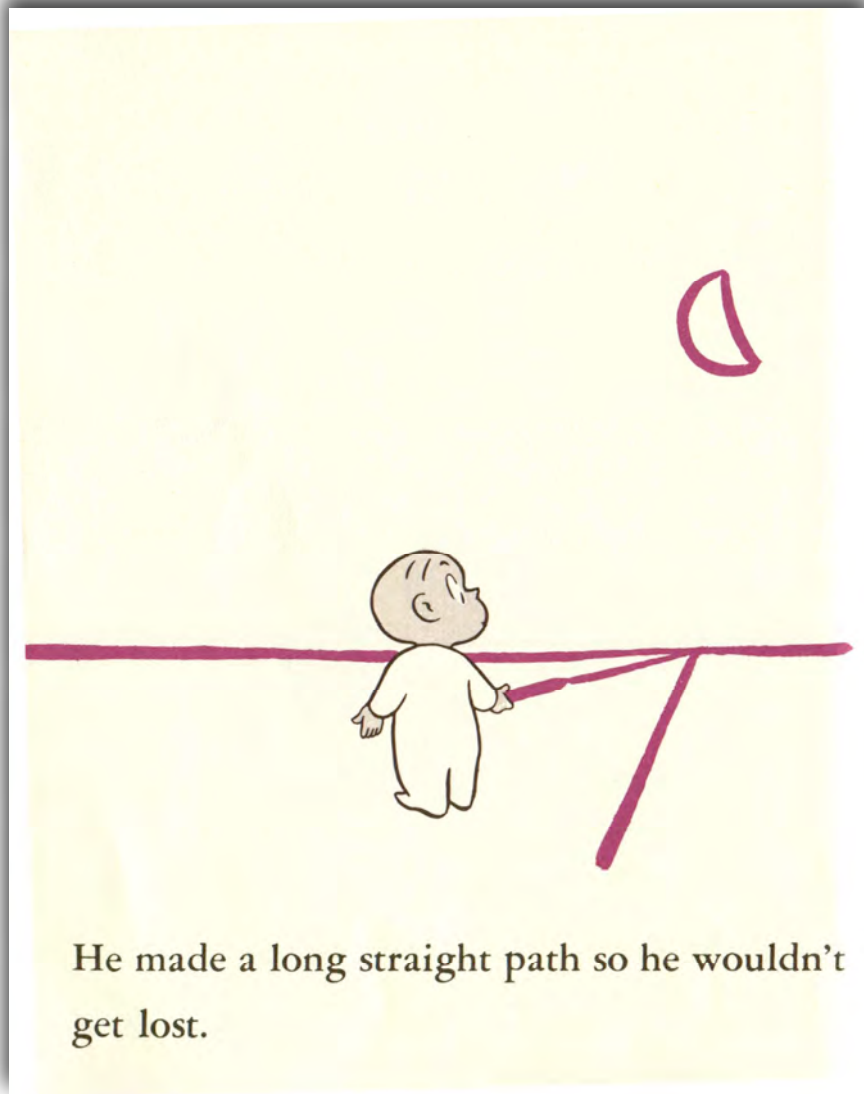
Seabiscuit tells how an unimpressive older horse with crooked legs and a short tail stole the hearts and minds of the American people during the Depression. In 1938, the No. 1 newsmaker was not FDR or Hitler; it was a horse that defined the word 'underdog.'

It was the indefinable quality of 'being game' that captured Americans. As one observer put it, Seabiscuit would rather die than be beaten in a race. Yet, unlike many champion thoroughbreds, his off-track personality was low-key, appealing and, frankly, lazy. He was a glutton for food and enjoyed the friendship of a horse named Pumpkin.

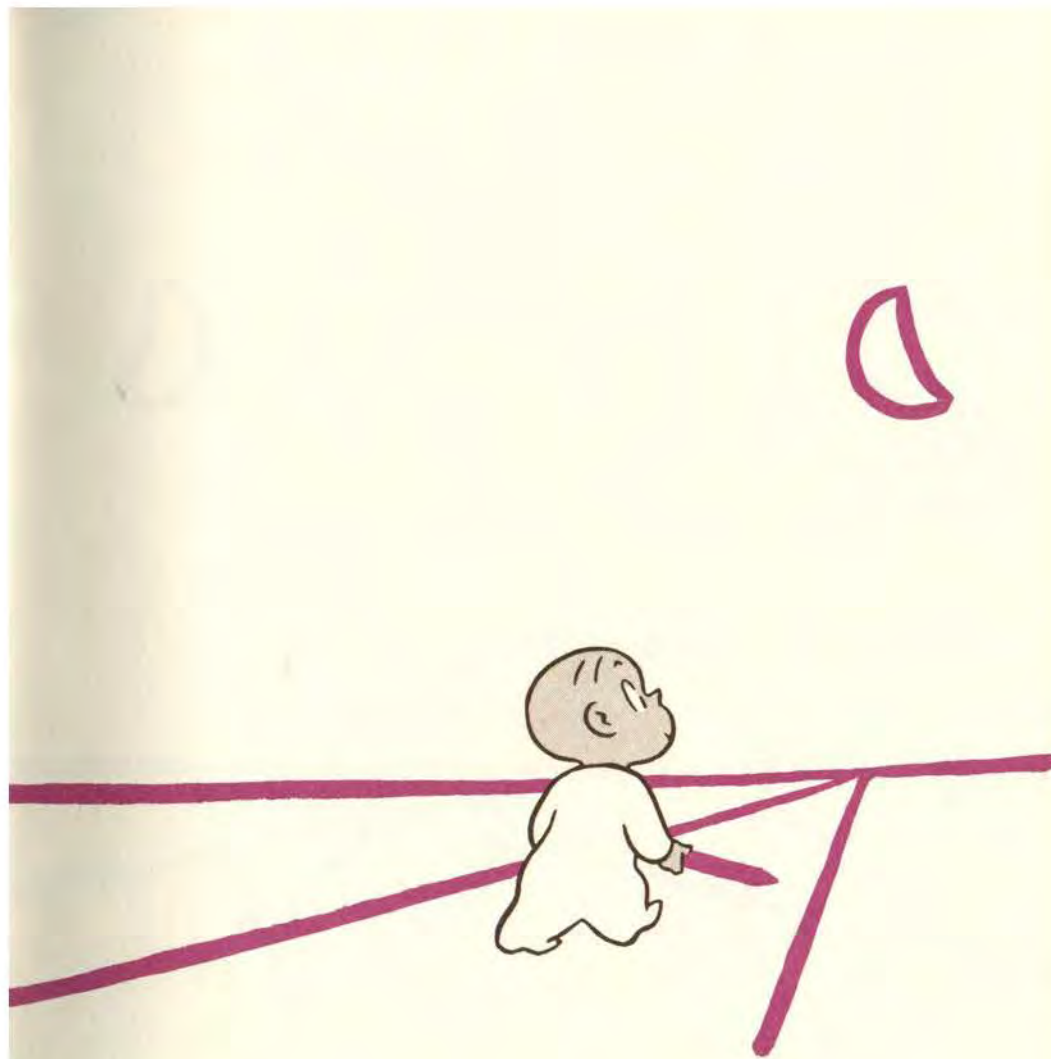
In short, he seemed the American Everyhorse, the equine version of how we see ourselves. Yet his race against the favored War Admiral is considered the greatest horse race in history. (Deirdre Donahue, 'Book club is spurred to choose "Seabiscuit",' *USA Today*, Thursday, 23 May 2002, page 1D.)

DOUBLE SCOPE NETWORKS

A double scope network has inputs with **different (and often clashing) organizing frames** and an organizing frame for the blend that includes parts of each of those organizing frames and has emergent structure of its own. In such networks, **both organizing frames make central contributions to the blend**, and their sharp differences offer the possibility of rich clashes. **Far from blocking the construction of the network, such clashes offer challenges to the imagination and the resulting blends can turn out to be highly creative.**

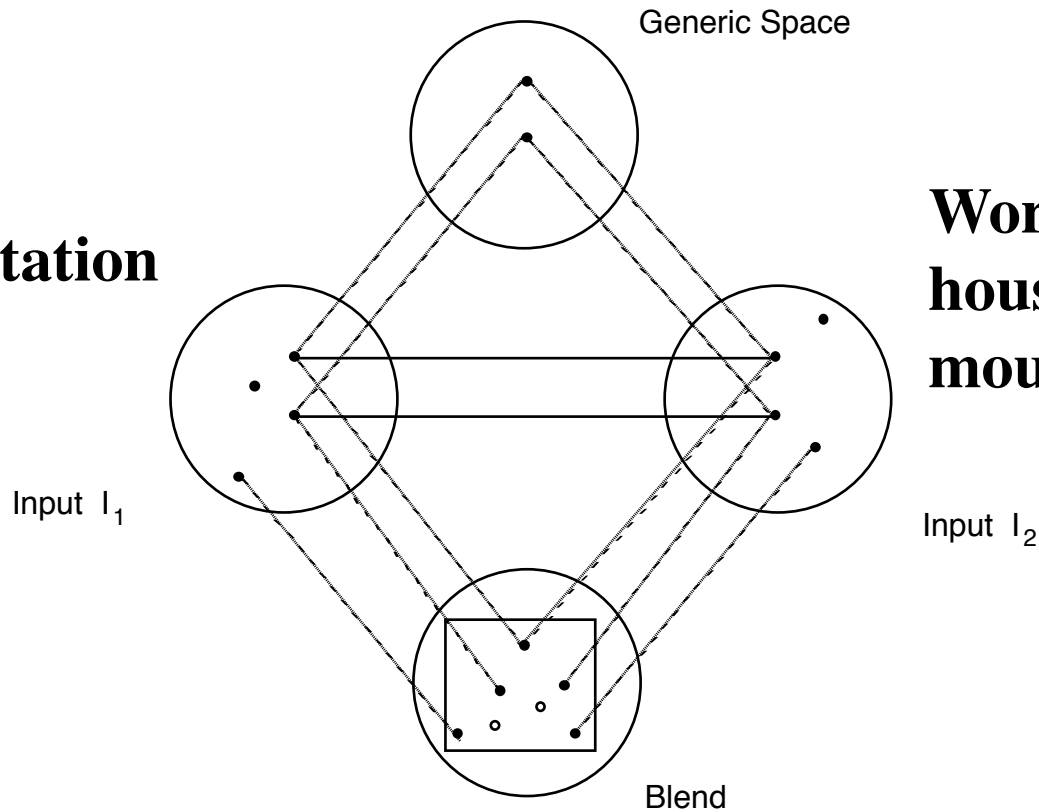


He made a long straight path so he wouldn't get lost.



And he set off on his walk, taking his big purple crayon with him.

Representation



**World (moon,
house, bedroom,
mountain, etc.)**

**Harold's World
(move by drawing, etc.)**

Catullus 101

multas per gentes et multa per aequora vectus
advenio has miseras, **frater**, ad inferias,
ut **te** postremo donarem munere mortis
et **mutam** nequiquam alloquerer **cinerem**.
quandoquidem fortuna mihi tete abstulit ipsum.
heu miser indigne frater adempte mihi,
nunc tamen interea haec, prisco quae more parentum
 tradita sunt tristi munere ad inferias,
accipe fraterno multum manantia fletu,
 atque in perpetuum, frater, ave atque vale!

Language <-> Compressed Blend

Racine: “Un fil n'eût point assez rassuré **votre amante.**”

Catullus: “**mutum . . . cinerem**”

Wallace Stevens, “The Snow Man”

. . . listener, who listens in the snow,
And, nothing himself, beholds
Nothing that is not there and the nothing that is.

Jail Bait

Consider "jail bait," a phrase used to refer to an under-age girl whom an of-age man finds sexually attractive. "Jail" comes from the domain of human criminality, while "bait" comes from the domain of fishing or trapping. In the mapping between them, attraction to the girl corresponds to attraction to the bait, initiating sex corresponds to swallowing the bait, and ending up in jail (for sex with a minor) corresponds to ending up caught. The conceptual elements named in the integrated syntactic form "jail bait" are not counterparts in the conceptual mapping. Here, obviously, we are prompted to borrow the compressions and intensities of the fishing frame for the purpose of compressing the "sex with a minor" frame and intensifying many of its vital relations. For example, the causal chain in the "sex with a minor" space can be long and diffuse, from perception to incarceration. But the fishing frame, by contrast, has direct human-scale causation: a single bodily action results in immediately being caught.

Jail Bait

There is extraordinary emergent structure: in the blend, the man is not to blame. In the space of fishing, the fish does not know that the bait is bait. In the space with the man and the minor, the man certainly does know about laws and jail and he recognizes that sex with the girl is legally forbidden. But in the blend, he is blameless for the action, indeed even the prime victim, even though he understands the law, the prohibition, the possible punishment, and the reasons for it. The 'jail-bait' blend may acquire further emergent structure through the Principle of Intensification of Vital Relations. In the fishing space, the intentionality is in the fisherman's attempt to trick the fish and catch it. In the other input ('sex with a minor') the intentionality is in the man's attraction. There is no counterpart for the fisherman in the space with the minor, but it is nevertheless possible to project something like the fisherman's intentionality into the blend. One corresponding interpretation holds the girl herself responsible for what befalls the man. Another might bring in the Devil. Another might bring in the injustice of the world, society and its laws.

From Poetry and Idiom to Politics and Self

Churchill

— If Churchill had been prime minister in 1938 instead of Neville Chamberlain, Hitler would have been deposed and World War II averted.

1938
Churchill
Not PM
opposition to
Germany
etc.

1938
Chamberlain
Prime Minister
appeasement
etc.

Holocaust

Churchill
Prime Minister
opposes
Hitler
WWII averted
No holocaust
etc.

Some Aspects of Blending

- Blends exploit and develop counterpart connections between influencing spaces.

The space with Churchill and the space with Chamberlain share many identity-counterparts, such as date, England, Germany, Hitler, and international tension. Churchill and Chamberlain are additionally frame-counterparts, that is, they are values of the same role in the same frame: each is an English political figure, holding a political office, with views about Germany.

Some Aspects of Blending

- Counterparts may or may not both be brought into the blend, and may or may not be fused in the blend.

Many paired counterparts are brought into the blend as fused units: Hitler in the blend is a single fused entity corresponding to Hitler in each of the influences but not equal to them—the Hitler in the blend has a different life. Churchill is brought into the blend but not Chamberlain. Chamberlain's political office is brought in but not Churchill's.

Some Aspects of Blending

- The projection from the influencing spaces is selective.

The blend takes from the space with Churchill his opposition to Germany but not his political office or his reputation in 1938 as having poor judgment of the sort that would prevent him from obtaining a position of leadership. The blend takes from the space with Chamberlain the role *prime minister* and the situation faced by the prime minister in 1938, but not Chamberlain himself or the default knowledge attached to *prime minister* that world leaders facing aggression are concerned greatly to avoid unnecessary war. We frame Chamberlain according to this default knowledge but keep it out of the blend, where we need a prime minister who views conflict as inevitable.

Some Aspects of Blending

- Blends recruit a great range of conceptual structure and knowledge without our recognizing it.

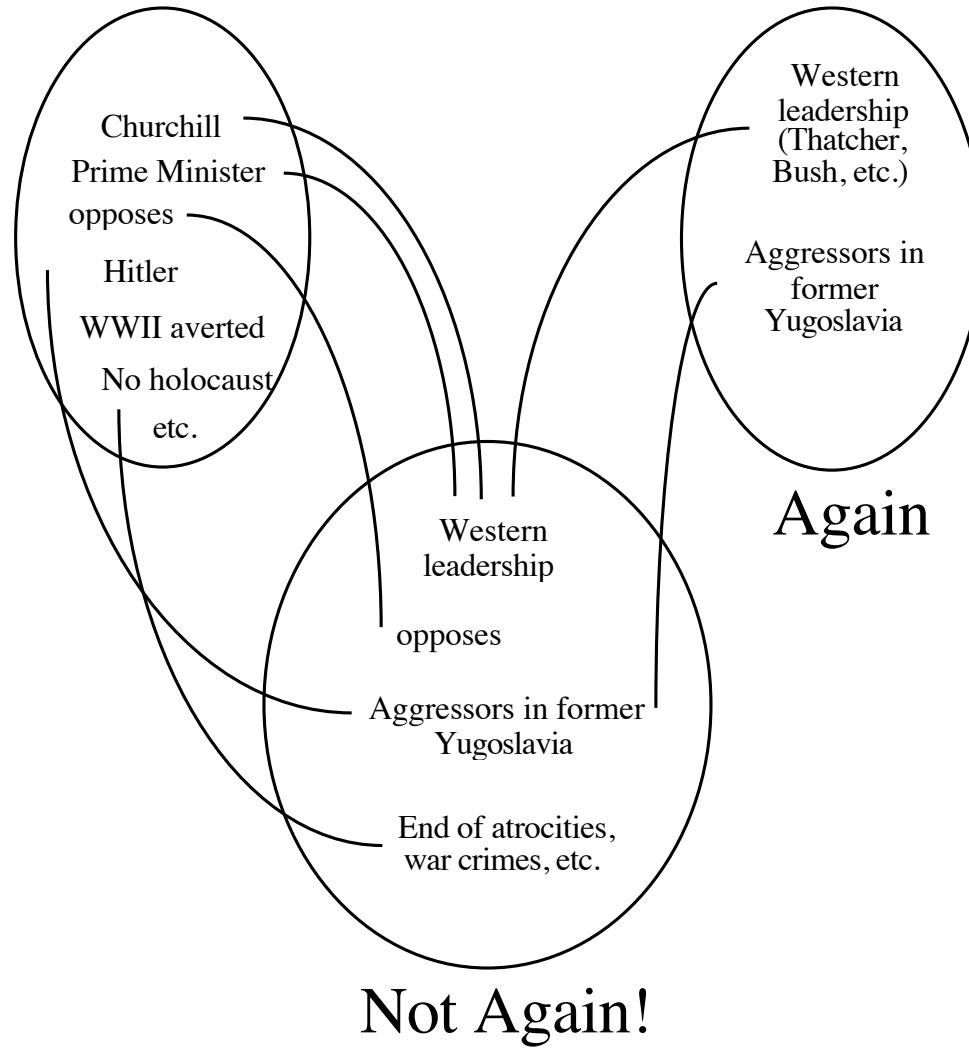
Very little of the structure needed for the contrary-to-fact blended space is mentioned. The Churchill blend recruits conceptual frames of world leaders, political aggression, and wars. It recruits the relevant history of Germany and England. These recruitments are needed for the reasoning to work properly in the blend. Academic theories may also be recruited to the blend—game-theoretic interaction during political aggression or deterrence by "power-maximizing" actors. These recruitments may drive the elaboration of the blend in one direction or another.

Some Aspects of Blending

- Blending is a process that can be applied repeatedly, and blends themselves can be inputs to other blends.

Someone might respond to the Churchill counterfactual, "That's only because Hitler was irrational: a more rational Hitler would have seen that his strategic chances were still excellent, and would not have backed down." This new counterfactual blend takes part but not all of the original Churchill blend, and additionally takes part but not all of the characteristics of Hitler from spaces that refer to actual situations. In the new counterfactual hyper-blend, World War II is not averted.

Thatcher: Not Again!



Some Aspects of Blending

- Blends develop structure not provided by the influencing spaces.

Typically, the blend is not a simple cut-and-paste reassembly of elements to be found in the influencing spaces but instead resembles what Kahneman (1995) calls a "mental simulation," in which it develops considerable emergent structure. Usually, we focus on this additional emergent structure. For example, in the Churchill blend, but not in any of its influences, Hitler backs down and World War II is averted.

Some Aspects of Blending

- Projection back to the influencing space.

E.g., Churchill should have been put into power; the personality of the leader is important; etc. A student of large and systematic historical patterns, transcending mere individuals, that supposedly led to World War II might know Churchill's personality well but not have brought what she knows to bear on her conception of appeasement in 1938. The Churchill blend might challenge her to reconsider the causal weight of personality. Thatcher's blend might lead someone to rethink the situation in Bosnia and even to choose to intervene.

Some Aspects of Blending

- Selectivity of projection and variability of recruitment can lead to different constructions and inferences.

Many people, hearing the "Not Again!" blend proposed by Thatcher, which asks us to compose a scene in which Western powers intervene in a distant country, will complete that blend with structure from a "Vietnam" frame. Thatcher's blend will then include disaster for the intervening Western powers. Thatcher's blend is meant to lead people to reason to one political choice, but it can lead them to reason to the opposite choice if it is completed and elaborated differently.

Philosopher in a coma

Law professor, writing in *The Los Angeles Times*: “Even if everyone agrees she [the comatose woman] was pro-life at 19, she is now 29 and has lived in PVS [persistent vegetative state] for 10 years. Do we ask: 'Was she pro-life?' Or do we ask more appropriately: 'Would she be pro-life as a rape victim in a persistent vegetative state at 29 years of life?’”

"As an unwanted child myself . . ."

Seana Coulson reports the following excerpt from a letter, written by Lee Ezell to the editor of *The Los Angeles Times* in 1992:

I say thanks that no Planned Parenthood Clinic was available to me in 1963, when, as a virgin teenager, I was raped and became pregnant. The state of California would have been taking advantage of me in my crisis state by offering me this seemingly easy out. As an unwanted child myself, I decided abortion was too permanent a solution to my temporary problem.

- The counterfactual blend in which Lee's mother did not have the child Lee (because she didn't get pregnant, or didn't have intercourse, or had an abortion . . .)
- The counterfactual blend in which Lee in 1963 was not raped and therefore did not have Julie (the child that she had as a consequence of being raped, named elsewhere in the letter).
- The space in which it is 1992 and there are Planned Parenthood Clinics providing abortions to teenage rape victims.
- The space in which it is 1963 and Lee is pregnant and there are no Planned Parenthood Clinics and Lee considers having an abortion by some available means but decides against it.
- The counterfactual blend in which it is 1963 and there are Planned Parenthood Clinics and Lee has an abortion at one of them (the "easy out").
- The counterfactual blend in which it is 1963 and no Planned Parenthood is available but Lee still has an abortion.
- The counterfactual blend in which it is 1992 and Lee did have the abortion in 1963 and so Julie does not exist.

Urban blight

The experts concluded that if the community were to be **healthy**, if it were not to revert again to a **blighted** or slum area, as though possessed of a congenital **disease**, the area must be planned as a whole. It was not enough, they believed, to remove existing buildings that were unsanitary or unsightly. It was important to redesign the whole area so as to eliminate the conditions that cause slums—the overcrowding of dwellings, the lack of parks, the lack of adequate streets and alleys, the absence of recreational areas, the lack of light and air, the presence of outmoded street patterns. It was believed that the piecemeal approach, the removal of individual structures that were offensive, would be only a palliative. The entire area needed redesigning so that a balanced, integrated plan could be developed for the region including not only new homes but also schools, churches, parks, streets, and shopping centers. In this way it was hoped that the cycle of decay of the area could be controlled and the birth of future slums prevented.

—Justice William O. Douglas, 1954 opinion on the constitutionality of the Federal Urban Renewal Program

Compressions

Future Hypotheticals, Counterfactuals, and the Present

Look in thy glass and tell the face thou viewest
Now is the time that face should form another;
Whose fresh repair if now thou not renewest,
Thou dost beguile the world, **unbless** some mother.
For where is she so fair whose unear'd womb
Disdains the tillage of thy husbandry?
Or who is he so fond will be the tomb,
Of his self-love to stop posterity?
Thou art thy mother's glass and she in thee
Calls back the lovely April of her prime;
So thou through windows of thine age shalt see,
Despite of wrinkles this thy golden time.
But if thou live, remember'd not to be,
Die single and thine image dies with thee.

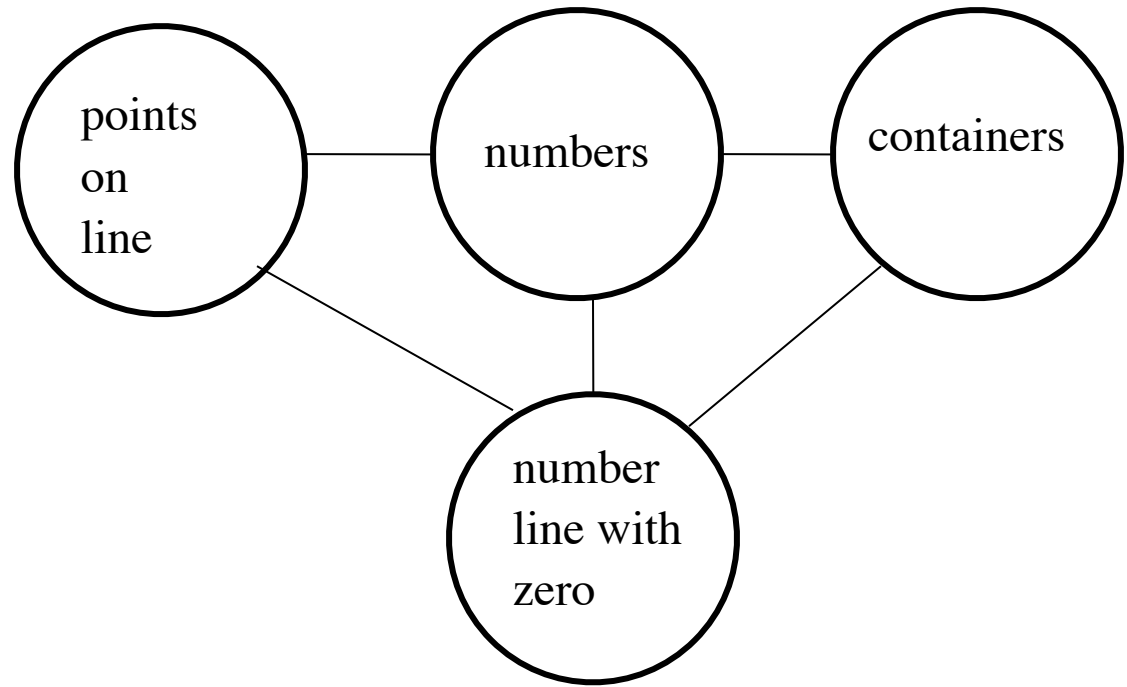
Sonnet 3

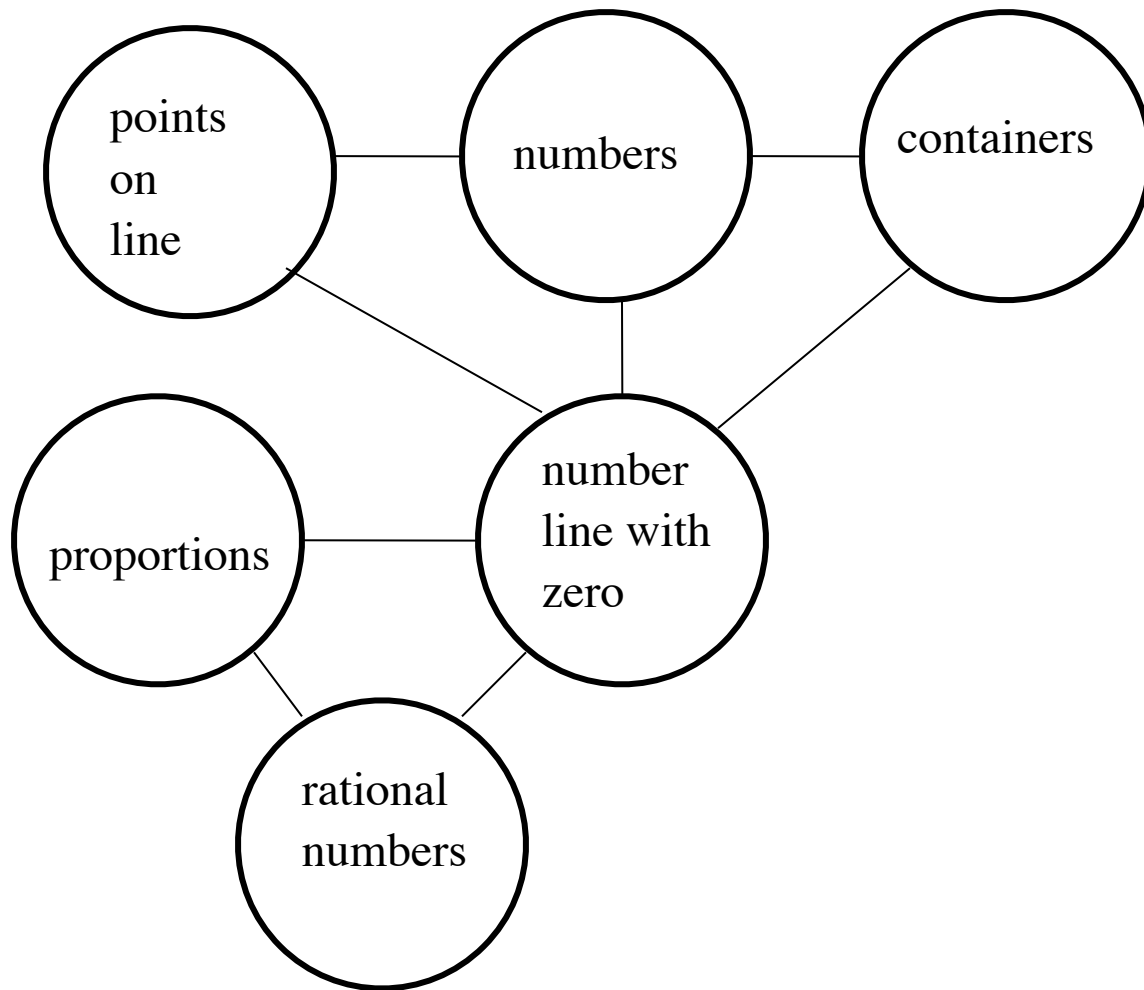
Polysemy ("Multiple Meanings")

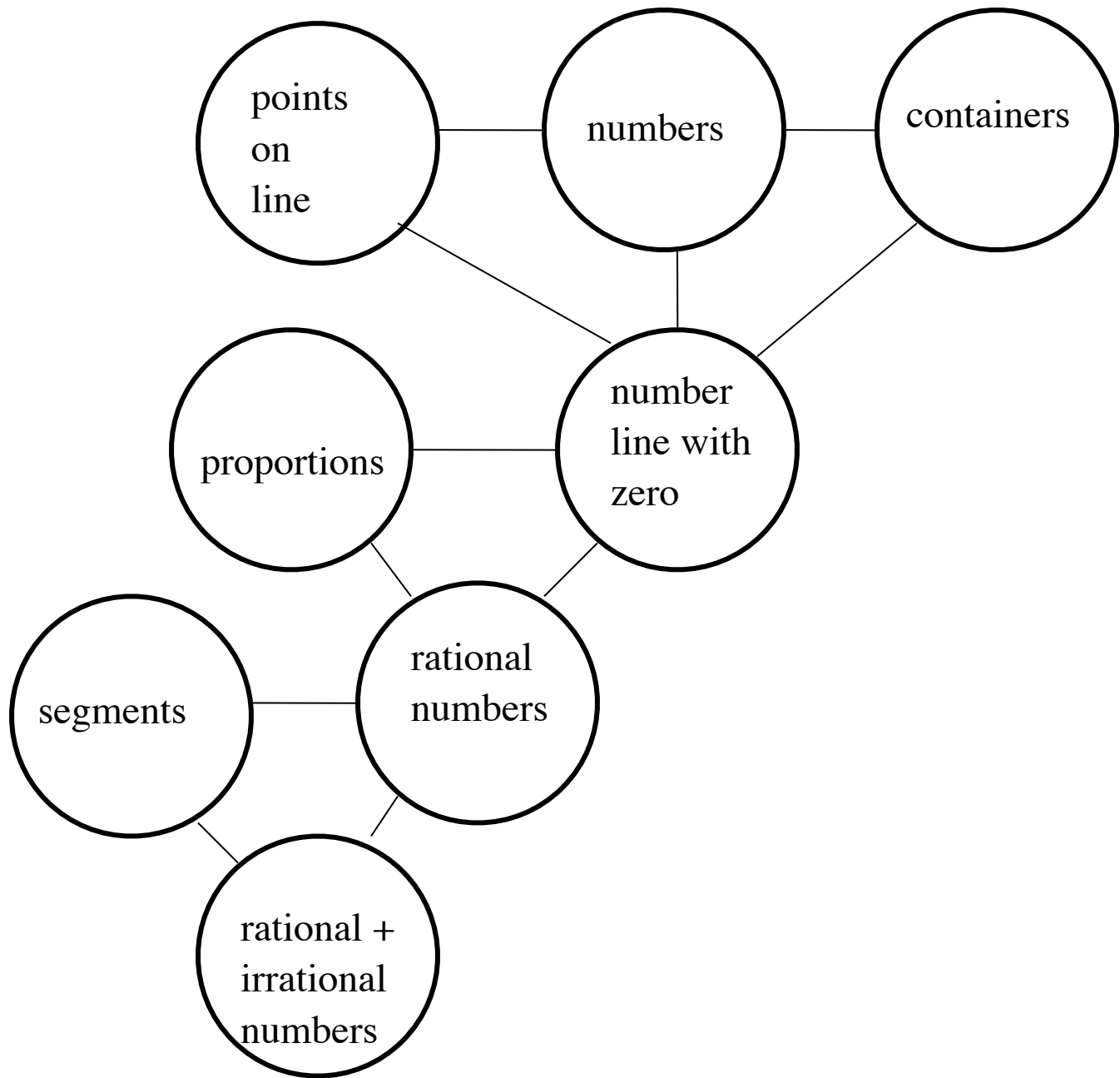
Principle 1.

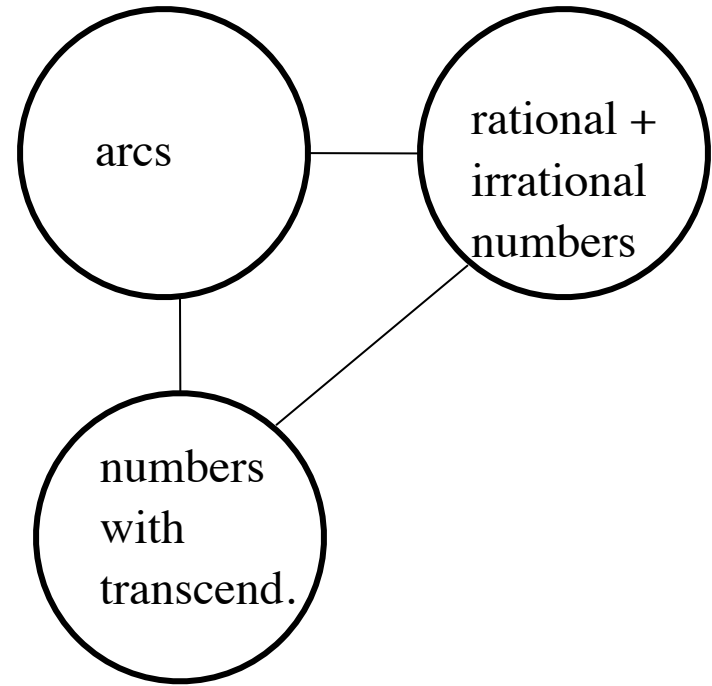
Through selective projection, **expressions applied to an input can be projected to apply to counterparts in the blend**. In this way, blends harness existing words in order to express the new meanings that arise in the blend.

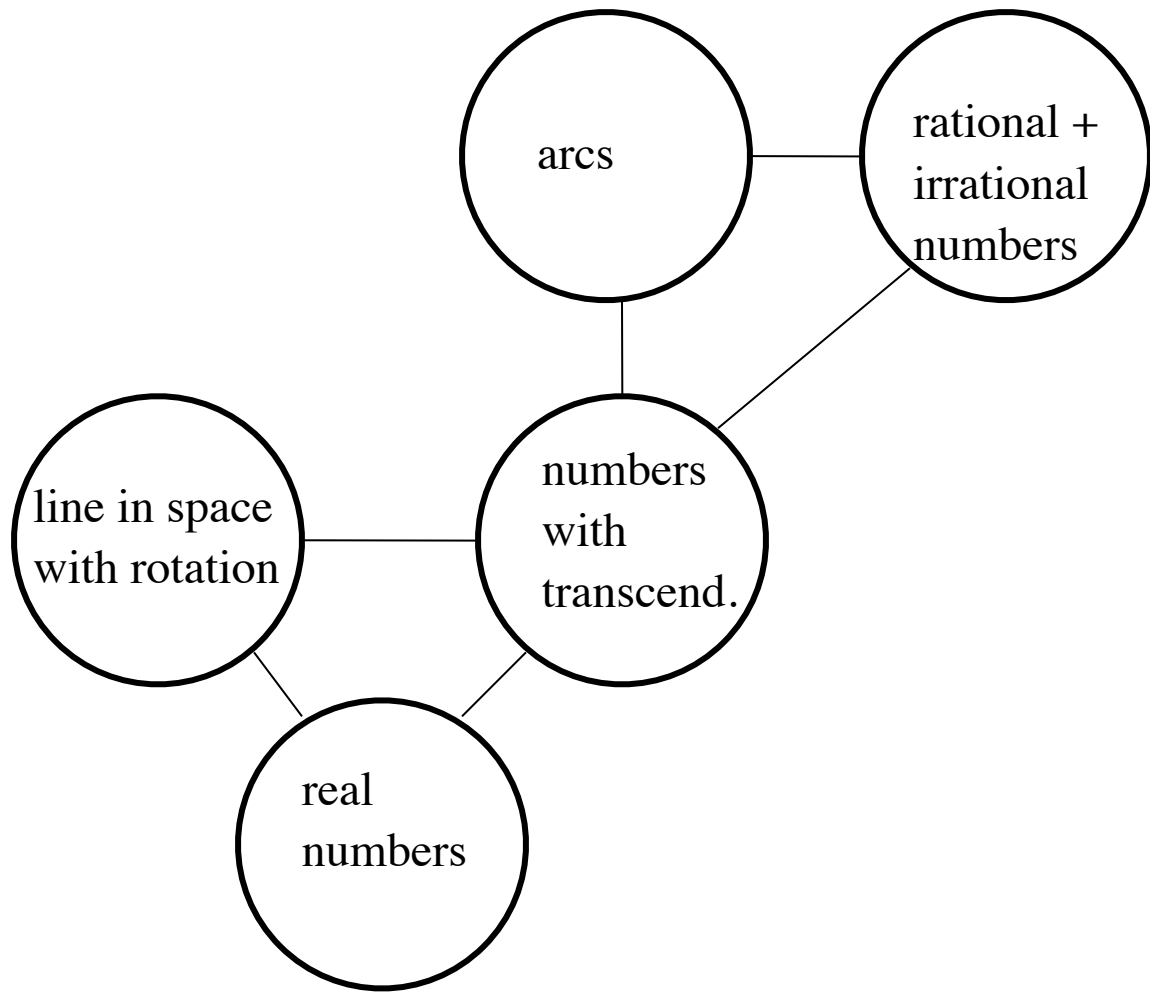
- I got a virus from your email message.
- Number, addition, multiplication, angle, product, sum . . .
- Same-sex marriage.

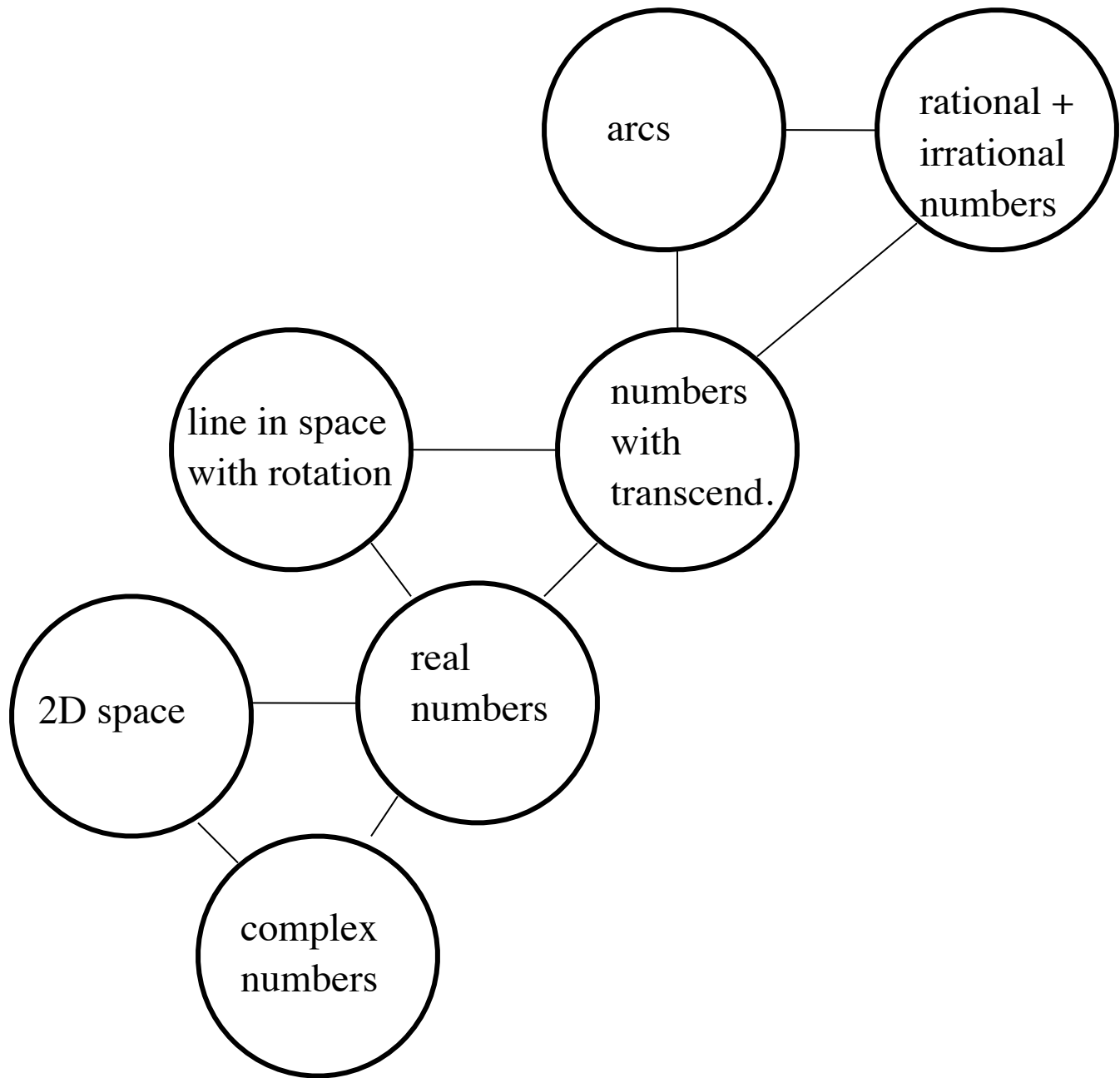












Number

Number -> Number -> Number -> Number -> ->
(counting) (rational) (real) (complex)

Polysemy ("Father")

- Paul is the father of Sally.
- Zeus was the father of Sarpedon. He watched from Mount Olympus as his mortal son met his fated death.
- Zeus is the father of Athena. She was born out of his head, fully clad in armor.
- Joseph was the father of Jesus.
- The Pope is the father of all Catholics.
- The Pope is the father of the Catholic Church
- George Washington is the father of our country.
- Newton is the father of physics.
- Fear, father of cruelty.
- The Child is Father of the man.

Polysemy ("Multiple Meanings")

Principle 2:

Combinations of expressions from the inputs may be appropriate for picking out structure in the blend even though those combinations are inappropriate for the inputs. **Grammatical but meaningless phrases can thus become grammatical and meaningful for the blend.** For example, once we have the complex number blend, we can say meaningfully, using pre-existing words and grammatical patterns, **"The square root of negative one."** Once we have the same-sex marriage blend, we can say meaningfully, **"The brides married each other at noon."** We can do this even though neither of these expressions is meaningful for the pre-existing inputs.

Polysemy ("Multiple Meanings")

Principle 3:

We often have **terms for emergent structure in the blend and can use them even though those terms cannot be applied to the inputs themselves**. For example, in the Debate With Kant, we can say that "Kant has no **answer**," and this does indeed tell us something about the input space with Kant, even though "answer" has no application in that space.

Polysemy ("Multiple Meanings")

Principle 4:

Blending routinely and inevitably extends the uses of words, but we rarely notice these extensions. "Safe," for example has many more "surface" "meanings" than we realize.

—“Safe.” Even very simple constructions in language depend upon complex blending. It is natural to think that adjectives assign fixed properties to nouns, so that “the cow is brown” assigns the fixed property *brown* to *cow*. By the same token, there should be a fixed property associated with the adjective “safe” that is assigned to any noun it modifies. Consider the following unremarkable uses of “safe” in the context of a child playing at the beach with a shovel: “The child is safe,” “The beach is safe,” and “The shovel is safe.” There is no fixed property that “safe” assigns to *child*, *beach*, and *shovel*. Consider also “The jewels are safe.” “The packaging is safe.” “Drive at a safe speed.” “Have a safe trip.” “This is a safe bet.” “The beach is shark-safe” vs. “The beach is child-safe.”

—“The beach is safe” shows that the “matches” are not achieved independently of the blend, and that there is nothing simple about “matching.”

—"Safe" is not an exceptional adjective, with special semantic properties that set it apart from ordinary adjectives. It turns out that the principles of integration suggested above are needed quite generally. Even color adjectives, which at first blush look as if they must assign fixed features, turn out to require non-compositional conceptual integration. "Red pencil" can be taken to mean a pencil whose wood has been painted red on the outside, a pencil that leaves a red mark (the lead is red, or the chemical in the pencil reacts with the paper to produce red, or . . .), a pencil used to record the activities of the team dressed in red, a pencil smeared with lipstick, not to mention pencils used only for recording deficits. Theories of semantics typically prefer to work with examples like "black bird" or "brown cow" since these examples are supposed to be the prototypes of compositionality of meaning, but in fact as we will show later, even these examples illustrate complicated processes of conceptual integration.

Fictivity

Fictive Change

Fictive Motion

Fictive Interaction

Fictive Conversation

Theatricality in Discourse

Talmy's fictive motion blends

Len Talmy's fictive motion example, "The mountain range goes all the way from Mexico to Canada," has as its purpose to give us global insight into the location of the mountain range and its spatial relationship to Mexico, Canada, and the United States. We see here that a static scene is presented using motion: *goes all the way from . . . to . . .* Far from being unusual, this is a standard way to present static scenes in many and perhaps all languages. As Talmy writes, "Most observers can agree that languages systematically and extensively refer to stationary circumstances with forms and constructions whose basic reference is to motion" (Talmy 1995). "The mountain range goes all the way from Mexico to Canada" is a basic and idiomatic expression that does not feel either figurative or complex. And yet, on inspection, we see that a dimension of motion has been added to the static scene. We are confronted with a paradox: we now have something that is more complex and also patently false: the mountain range is not really engaged in directed motion along a path from Mexico to Canada.

Talmy's fictive motion blends

There are many opportunities and many ways to project motion to the blend in order to enhance its human scale quality. Talmy provides an insightful taxonomy of sources of motion for fictive motion blends. In our terms, this taxonomy presents a range of different motion inputs and a range of different projections to the blend.

Talmy's fictive motion blends

The formal blending in fictive motion expressions is particularly noticeable in what Talmy calls "Access Path" expressions, such as "The bakery is across the street from the bank." The static input could be expressed by "The bakery is on the street." The motion input has something departing from one point, traversing some surface, and arriving at another point. The words "across" and "from" come from the motion input. The expression for the blended space combines grammatical elements from the two inputs, so we can say "The bakery is *across* the street *from* the bank." The mountain range example and the bakery example have the same motion input. In the bakery example, the motion input has a surface that is traversed. Its counterpart in the static input is the street. In the blend, the surface traversed is fused with the street, and we can use the label "the street" to pick out that fused element in the blend and we can put "the street" in the grammatical position for the surface traversed ("across *the street*").

Talmy's fictive motion blends

Similarly, the endpoints of the trajectory in the motion input have counterparts in the static input: the bank and the bakery. In the blend, we fuse the endpoints of the trajectory with their counterparts in the static input, and we can use the labels from the static input (“the bank” and “the bakery”) to pick out the fused elements in the blend, and place those labels in the grammatical positions for the endpoints. In the mountain example, the surface traversed is left implicit: although typically the United States will show up in the conceptual blend as the surface traversed, it is assigned no expression. But one could say “The mountain range goes across the United States from Mexico to Canada.” The kinds of fictive motion blends that can be achieved are driven by the governing principles of conceptual integration and the availability of motion inputs. Principles that play an essential role include Topology, Integration, Unpacking, Maximization of Vital Relations, and Intensification of Vital Relations. They contribute to satisfy the Overarching Goals, most notably Achieve Human Scale and Strengthen Vital Relations.

Talmy's fictive motion blends

Under “Advent Paths,” Talmy gives the example, “The palm trees clustered together around the oasis.” Here, the motion input has multiple trajectors and trajectories converging on a location. This time, the trajectors in the motion input have counterparts in the static scene, namely the fixed palm trees. The trajectories, on the other hand, have no counterpart in the mental space of the static scene. Blends of this type incorporate the static scene as the end state of elaborate motion in the blended space.

Talmy's fictive motion blends

In the palm tree example, there is no motion and no change in the static input. The motion is projected from a different input. Similarly, in Talmy's example, "As I painted the ceiling, paint spots slowly progressed across the floor," the motion that is relevant in the fictive motion blend is not available from the input with the paint spots. The motion of the paint drops falling from ceiling to floor has nothing to do with the motion of the paint spots progressing across the floor in the blended space. In this case, too, the trajectors have counterparts, namely the paint spots, but the mapping is one to many, because each trajector in the motion space with multiple positions is mapped onto each of many distinct paint spots, each with a single position.

Talmy's fictive motion blends

Under "Shadow Paths," Talmy gives the example "The tree threw its shadow down into the valley." In this case, the end state of the motion (in the motion input) has as its counterpart the perceptible shadow in the static scene. Here, fictive motion creates motion by exploiting the already available blend in which a shadow is a changing and moveable object and not just an area of diminished lighting. That blend is already lexicalized in English by the word "shadow."

Talmy's fictive motion blends

It turns out then that fictive motion blends are strongly double-scope. They blend an essentially static scene with an essentially dynamic scene to create a blend with emergent properties that draws on the organizing frames of both inputs. Often, the path of the motion in the blend is not available to real trajectories in the real world, but part of the emergent meaning in the blend is the possibility and indeed actuality of this motion. Fictive motion blends are double-scope at the conceptual level, but they are also at the formal level, drawing grammatical elements from both inputs to create double-scope syntactic blends to express the conceptual structure in the blended space.

Fictivity

Fictive Change

Fictive Motion

Fictive Interaction

Fictive Conversation

Theatricality in Discourse

The Runaway Bunny

“O, Magali”

Provençal song ‘O, Magali,’ embedded in Frederic Mistral’s 1858 *Mireille*, a suitor calls from the street below to his beloved, Magali, who is in her room above.

“O, Magali,” *Mireille*, Frederic Mistral

- I will become a fish in the sea and swim away from you.
- If you become a fish, I will become a fisherman.
- Well then, I will become a bird and fly away.
- Then I will become a hunter and hunt you.
- Then I will become a flowering herb in the wild.
- Then I will become water and sprinkle you.
- Then I will become cloud and float away to America.
- Then I will become the seabreeze and carry you.

“O, Magali,” *Mireille*, Frederic Mistral

- Then I will become the heat of the sun.
- Then I will become the green lizard who drinks you in.
- Then I will become the full moon.
- Then I will become the mist that embraces you.
- But you will still never have me, because I will become the virginal rose blossoming on the bush.
- Then I will become the butterfly who kisses you and becomes drunk on you.

“O, Magali,” *Mireille*, Frederic Mistral

—Go ahead, pursue me, run, run. You will never have me. I will become the bark of the great oak hidden in the dark forest.

—Then I will become the tuft of ivy and will embrace you.

—If you do that, you will cling only to an old oak, for I will have turned into a novice in the monastery of Saint Blaise.

—If you do that, I will become a priest and be your confessor and hear you.

“O, Magali,” *Mireille*, Frederic Mistral

—If you pass through the portal of the convent, you will find all the nuns walking in a circle around me, because you will see me laid out under a shroud.

—If you become the poor dead girl, I will therefore become the earth. And then I shall have you.

“O, Magali,” *Mireille*, Frederic Mistral

This suite of blends has a profound persuasive effect on Magali, and it leads her to think about changing her judgment of the suitor’s character, or at least her visible response to his courtship. She says, ‘Now I begin to believe that you are not merely engaging in pleasantries with me. Here is my little glass ring for remembrance, handsome young man.’

The Runaway Bunny and 'O, Magali' rely on another kind of double-scope blending that is both common and effective. The pattern of the storytelling has a form that is blended with the event structure of the narrated human interactions. The lives of the mother and child, or lover and beloved, are vast, uncertain, and diffuse, stretching over time and place, conditioned by every kind of environment, emotion, and intentionality common to human lives. The question is, what will happen in these lives? Will these lives have any reliable structure? By contrast, the form of the expression has a very crisp structure: two people speak in a short, witty conversation. The conversation consists of a challenge begun by one of them, and each time, the challenge is answered. Whenever the child or beloved escapes into a new blend, the mother or lover follows ingeniously and to the same effect, until the child or beloved becomes convinced by the pattern. The pattern of the brief *conversation* is blended with the pattern of the extended *life*. The dedication of the mother or lover in staying with the witty *conversation*, always rising to the *rhetorical* challenge during the ten or fifteen minutes it takes to conduct the conversation, is blended with the dedication of the mother or lover in *life*, always rising to the *biographical* challenge of staying with the child or beloved through changes over years.

Quite interestingly, the quality of the **rhetorical performance** of the mother or lover is indicative of the **biographical performance** toward the child or the beloved. Why should the beloved give the lover her little glass ring just because he can conduct the exchange? Why should a brief, human-scale conversation between two people have any influence on her judgment of his character and his future performance as a lover? The answer is that she, like all cognitively modern human beings, can do double-scope blending, and in this case, blends two radically different things, namely a brief rhetorical form and the rhythm of an extended life. Fiction, poems, and plays are brief and cannot contain patterns that are diffuse in life. But they can prompt us to blend such diffuse patterns with human-scale stories and human-scale forms to produce blends that count as human-scale representations of the otherwise diffuse stories. The result is compressed blends that give us insight into what is otherwise beyond our grasp.

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://marktturner.org>

Department of Cognitive Science



CASE WESTERN RESERVE
UNIVERSITY EST. 1826

Frame Blending: RISK

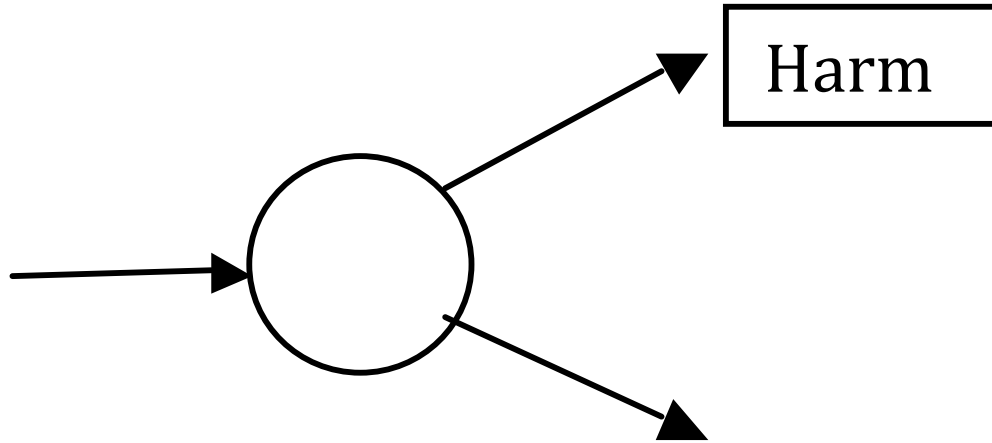
HARM

CHANCE

CHOICE

- Turner, Mark. 2008. "Frame Blending." In *Frames, Corpora, and Knowledge Representation*, edited by Rema Rossini Favretti. Bologna: Bononia University Press, 2008. 13-32. Available on the Cognitive Science Network (<http://ssrn.com>).

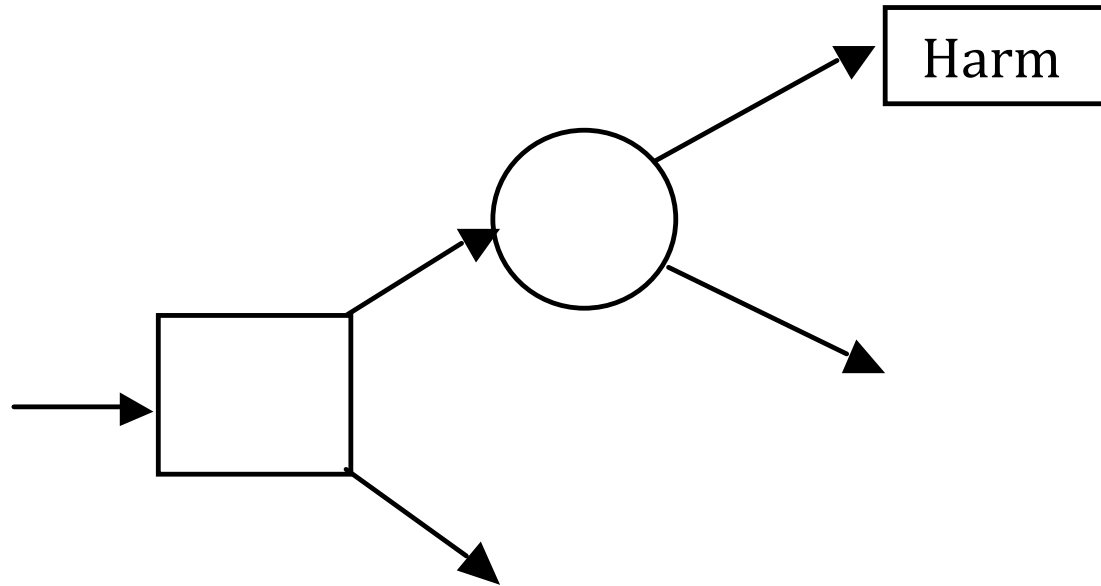
Frame Blending: RISK



Risk-running

(circle = chance)

Frame Blending: RISK



Risk-taking

(circle = chance; square = choice)

Frame Blending: RISK

As Fillmore and Atkins observe,
[W]hen "smearing" something on some surface results in covering that surface, the verb SMEAR acquires the syntax of COVER, as in "I smeared the wall with mud," and when loading hay onto the truck results in filling the truck, LOAD can take on the syntax of FILL, as in "I loaded the truck with hay." (97)

Frame Blending: RISK

Fillmore and Atkins make similar observations for RISK, as follows. It can "acquire" the syntax for POSSIBILITY, "as in 'there is a slight risk / danger / possibility that such-and-such will happen'." (97). It can "acquire" the syntax for EXPOSE, "and we find in the clause a secondary complement appropriate to EXPOSE, namely the TO-phrase representing the threat against which something is unprotected" as in "We would have to reinforce it before risking it *to* the waves" (97). It can "acquire" the syntax for INVESTING "in" something, as in "Roosevelt risked more than \$50,000 of his patrimony *in* ranch lands in Dakota Territory" (98). It can "acquire" the syntax for BET, WAGER, and GAMBLE as in "He's likely to risk a week's salary *on* a horse" (98).

Part of double-scope blending is the blending of grammar associated with the frames being blended. Double-scope blending is the mechanism that provides what Fillmore and Atkins refer to as "acquiring" "associated syntax."

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Blended Stories

Racine, Phèdre

PHEGRE

Oui, Prince, je languis, je brûle pour Thésée.
Je l'aime, non point tel que l'ont vu les enfers,
Volage adorateur de mille objets divers,
Qui va du Dieu des morts déshonorer la couche ;
Mais fidèle, mais fier, et même un peu farouche,
Charmant, jeune, traînant tous les coeurs après soi,
Tel qu'on dépeint nos Dieux, ou tel que je vous vois.
Il avait votre port, vos yeux, votre langage,
Cette noble pudeur colorait son visage,
Lorsque de notre Crète il traversa les flots,
Digne sujet des vœux des filles de Minos.
Que faisiez-vous alors? Pourquoi sans Hyppolyte
Des héros de la Grèce assembla-t-il l'élite?
Pourquoi, trop jeune encor, ne pûtes-vous alors
Entrer dans le vaisseau qui le mit sur nos bords?
Par vous aurait péri le monstre de la Crète,
Malgré tous les détours de sa vaste retraite.
Pour en développer l'embarras incertain,
Ma soeur du fil fatal eût armé votre main.
Mais non, dans ce dessein **je l'aurais devancée :**
L'amour m'en eût d'abord inspiré la pensée.

C'est moi, Prince, c'est moi dont l'utile secours
Vous eût du Labyrinthe enseigné les détours.
Que de soins m'eût coûté cette tête charmante!
Un fil n'eût point assez rassuré **votre amante**.
Compagne du péril qu'il vous fallait chercher,
Moi-même devant vous j'aurais voulu marcher ;
Et Phèdre, au Labyrinthe avec vous descendue,
Se serait avec vous retrouvée ou perdue.

HIPPOLYTE

Dieux! qu'est-ce que j'entends? Madame, oubliez-vous
Que Thésée est mon père et qu'il est votre époux?

PHEDRE

Et sur quoi jugez-vous que j'en perds la mémoire,
Prince? Aurais-je perdu tout le soin de ma gloire ;?

HIPPOLYTE

Madame, pardonnez. J'avoue, en rougissant,
Que j'accusais à tort un discours innocent.
Ma honte ne peut plus soutenir votre vue ;
Et je vais...

PHEDRE

Ah! cruel, tu m'as trop entendue.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Mapping between elements of the two stories. Blending two stories always involves at least a provisional mapping between them. The mapping typically involves connections of identity, analogy, similarity, causality, change, time, intentionality, space, role, part-whole, or representation. In *Phèdre*, the mapping involves analogy and time. There is a causal link as well, because Phèdre's existence in Theseus's household is a result of his earlier trip to Crete and his vanquishing of the minotaur.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Selective projection. Different elements of the stories are projected to the blended story. In *Phèdre*, we take from the historical story of the myth the scene of the labyrinth, the minotaur, and the roles of both the hero and the daughter of Minos who helps him, but now we bring Hippolytus and Phèdre in from the other story as the values of those roles. In the story of the minotaur, the daughter of Minos who helps Theseus is Ariadne, not Phèdre.

The blended story of Phèdre and Hippolytus manifests standard features of blending:

Emergent structure. In the blended story of Phèdre and Hippolytus as lovers, we have astonishing emergent structure. Now it is Hippolytus who conquers the minotaur, and it is Phèdre who helps him. Moreover, Phèdre goes into the labyrinth because of her great love. Emergent structure in integrating stories comes from three sources: composition, completion, and elaboration. Composition is putting together elements from different conceptual arrays. Completion is the filling in of partial patterns in the blend. Elaborating the blended story occurs when we develop it according to its principles. In the case of Phèdre, elaboration of the blend leads to a great range of new meaning.

Language <-> Compressed Blend

Racine: “Un fil n'eût point assez rassuré **votre amante.**”

Catullus: “**mutum . . . cinerem**”

William Butler Yeats, “Among School Children”

**I walk through the long schoolroom questioning;
A kind old nun in a white hood replies;
The children learn to cipher and to sing,
To study reading-books and history,
To cut and sew, be neat in everything
In the best modern way—the children's eyes
In momentary wonder stare upon
A sixty-year-old smiling public man.**

**I dream of a Ledaean body, bent
Above a sinking fire, a tale that she
Told of a harsh reproof, or trivial event
That changed some childish day to tragedy --
Told, and it seemed that our two natures blent
Into a sphere from youthful sympathy,
Or else, to alter Plato's parable,
Into the yolk and white of the one shell.**

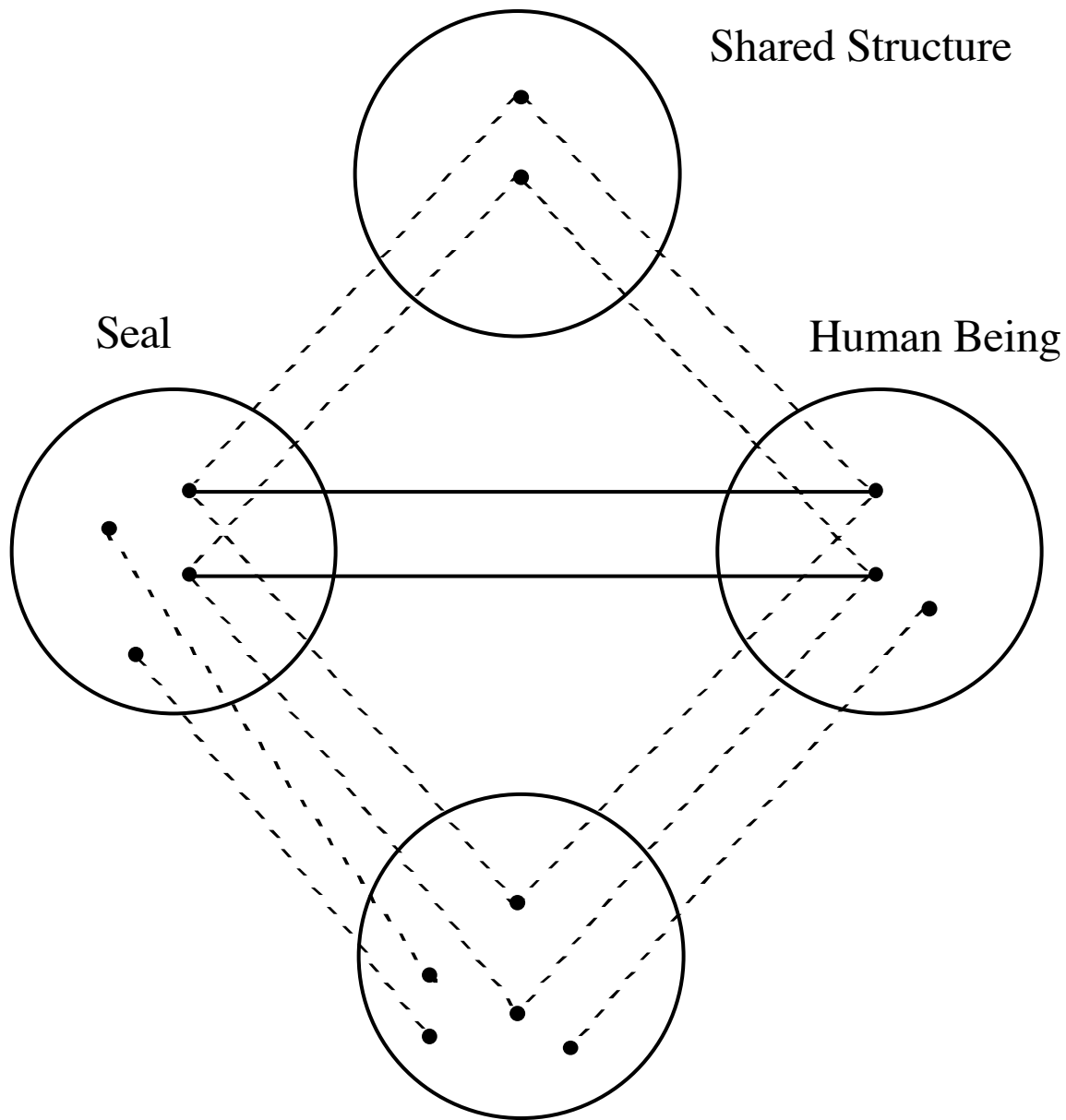
**And thinking of that fit of grief or rage
I look upon one child or t'other there
And wonder if she stood so at that age—
For even daughters of the swan can share
Something of every paddler's heritage—
And had that colour upon cheek or hair,
And thereupon my heart is driven wild:
She stands before me as a living child.**

Language <-> Compressed Blend

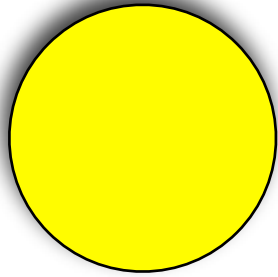
Yeats: "**She stands** before me as a living child."

Racine: "Un fil n'eût point assez rassuré **votre amante.**"

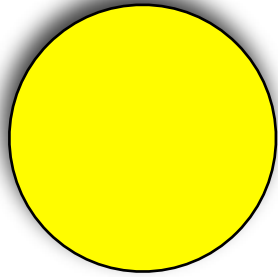
Catullus: "**mutum . . . cinerem**"



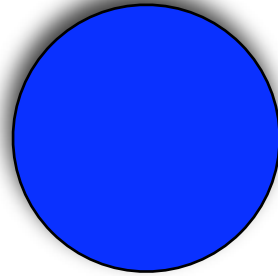
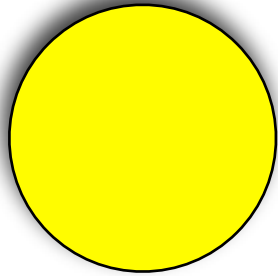
Blend:
Seal with a mind



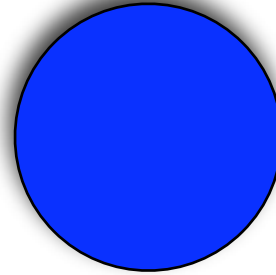
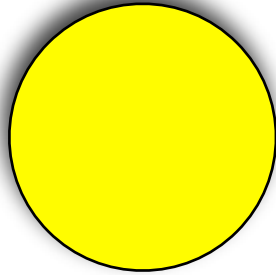
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Seal

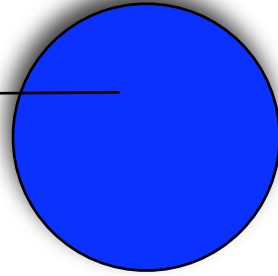
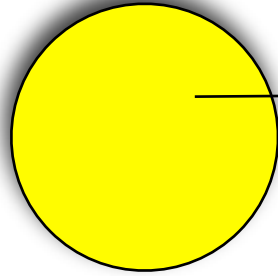


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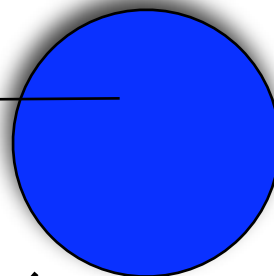
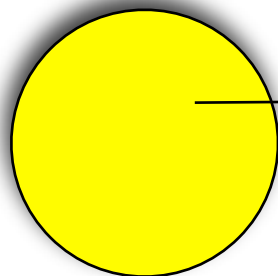
Human Being

Seal

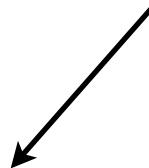
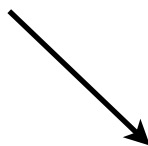


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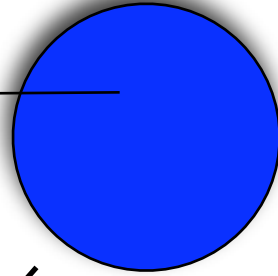
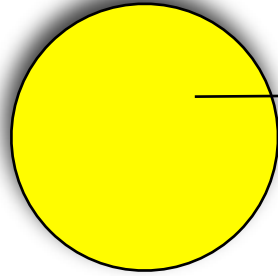
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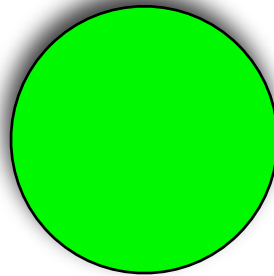
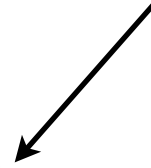
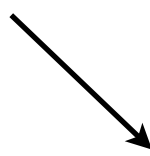
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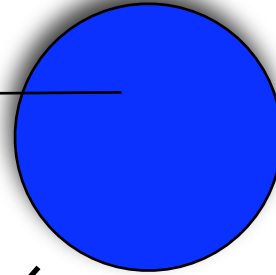
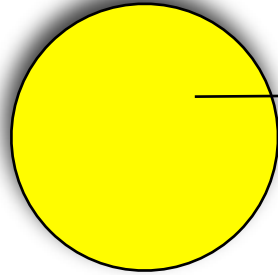
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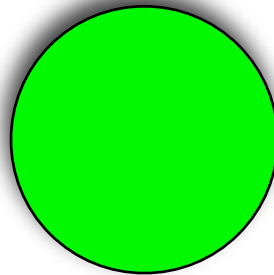
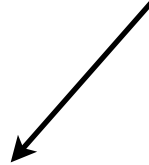
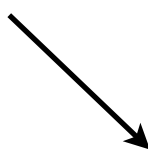
Human Being



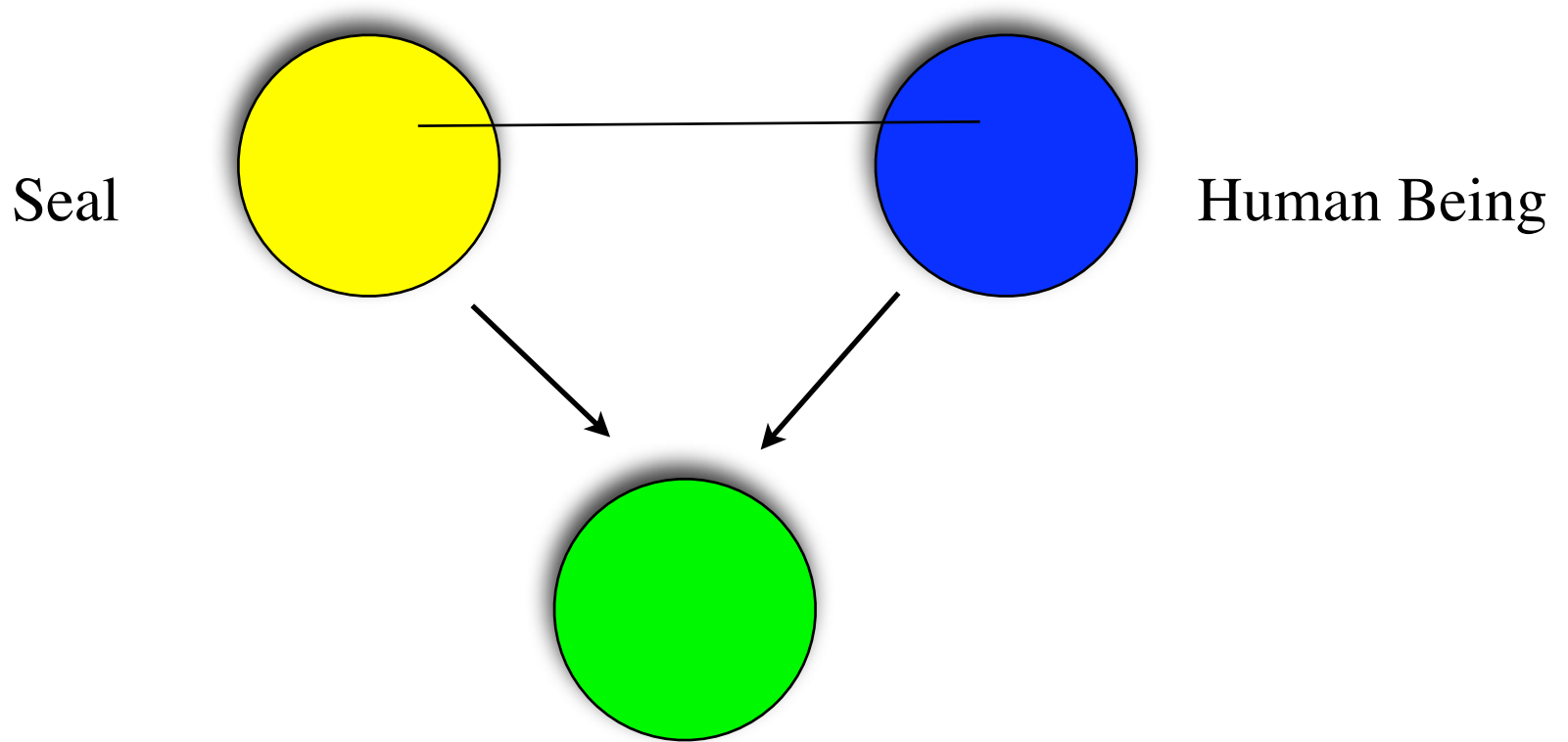
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Human Being

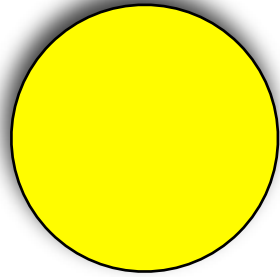


Blend: Seal with a Mind

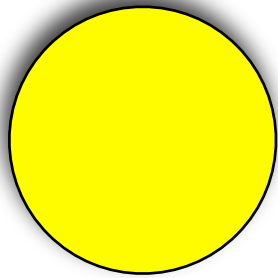


Blend: Seal with a Mind

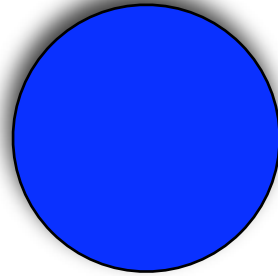
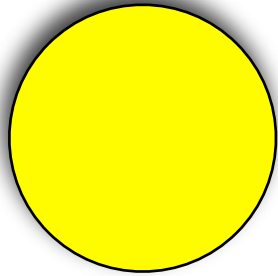
- Inspection, Attention, Intention, Perspective



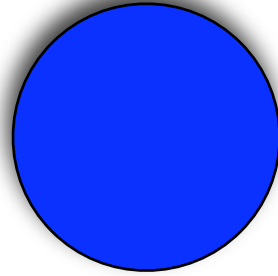
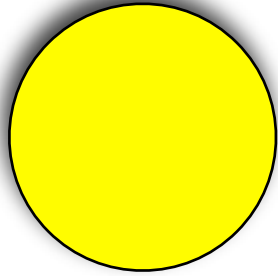
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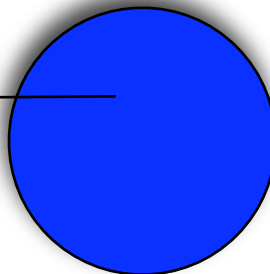
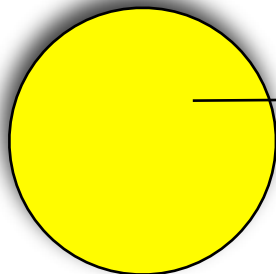


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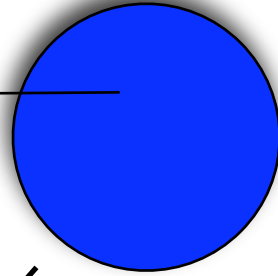
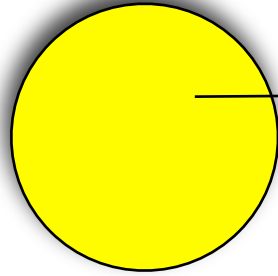
Human Being

Seal

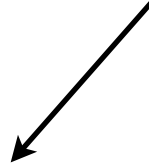
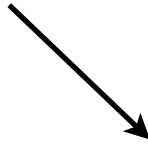


Human Being

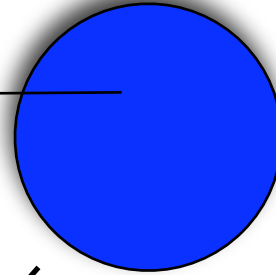
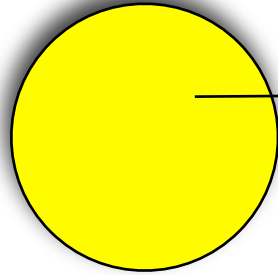
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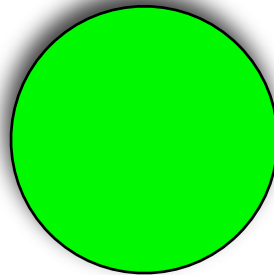
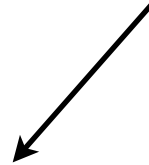
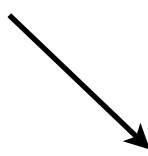
Human Being



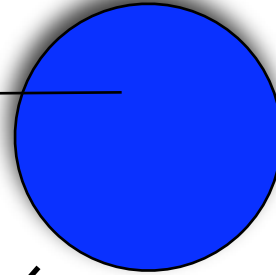
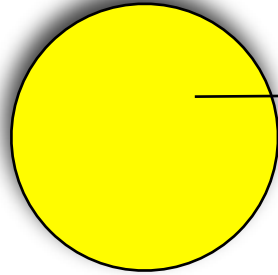
Seal



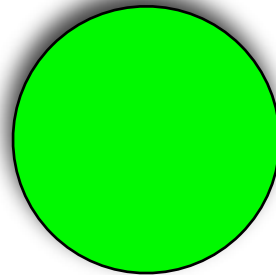
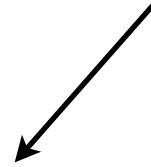
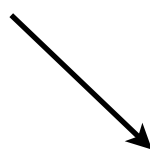
Human Being



Seal

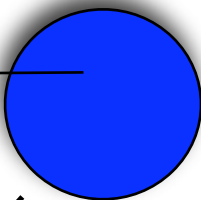
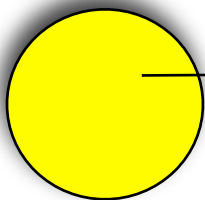


Human Being

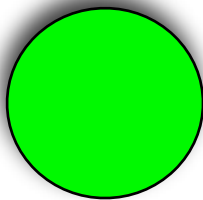


Selkie

Seal

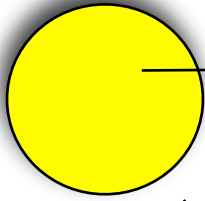


Human

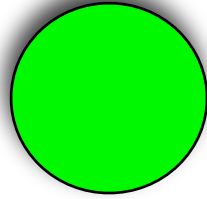
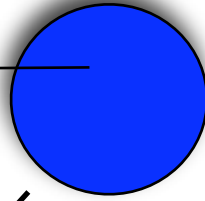


Selkie

Seal



Human



Selkie

- Inspection, Attention, Intention, Perspective
- Talking Animals (Goofy, Pluto, Scooby Doo, Donald Duck)
- Removable coat (clothes, naked). Mating: children with selkie properties.
- Explaining, reifying (referring emergent properties back to input vs. in blend)
- Spiderman, Martha Blah-Blah
- Death by drowning vs. cosmic justive vs. fallen angels: fairies and selkies

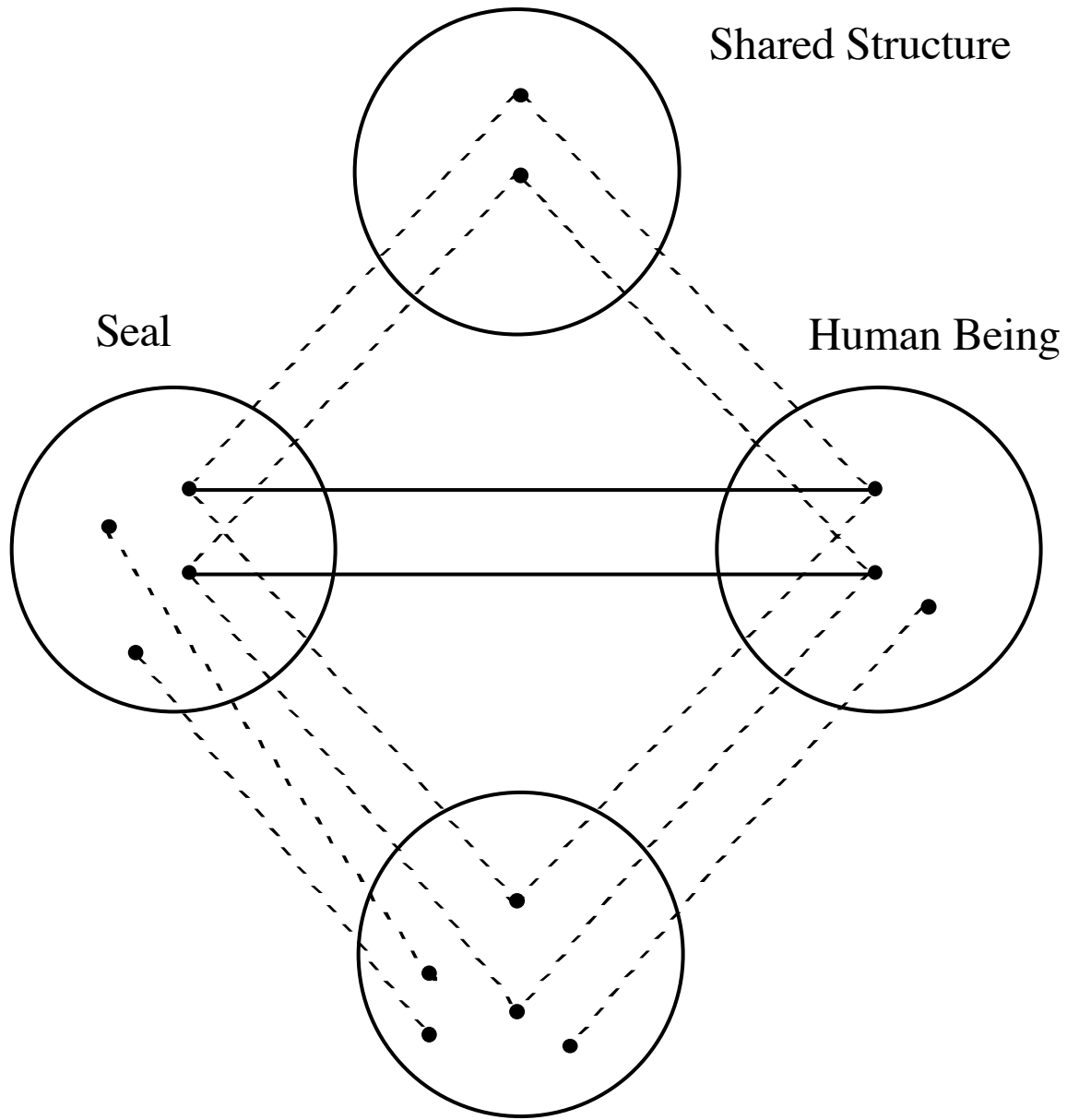
Selkies

**"Aunt Charlotte and the NGA
Portraits."**

Olga Weathers and the lost coat.

Hidden in Picture World.

The origin of selkies

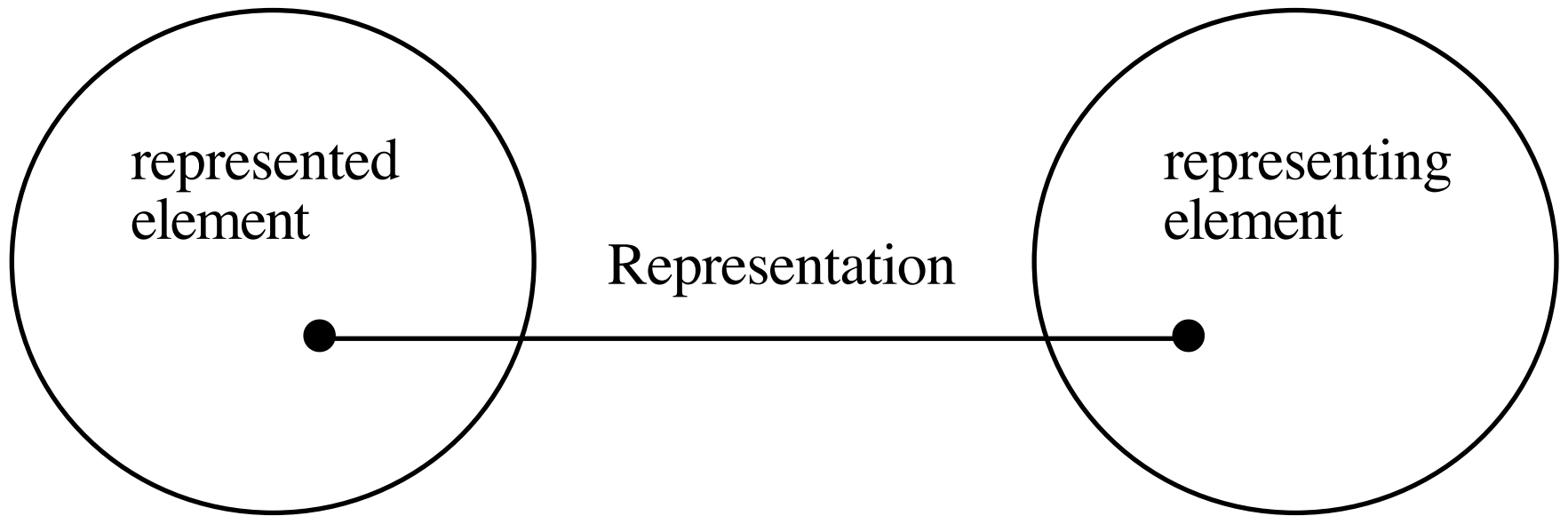


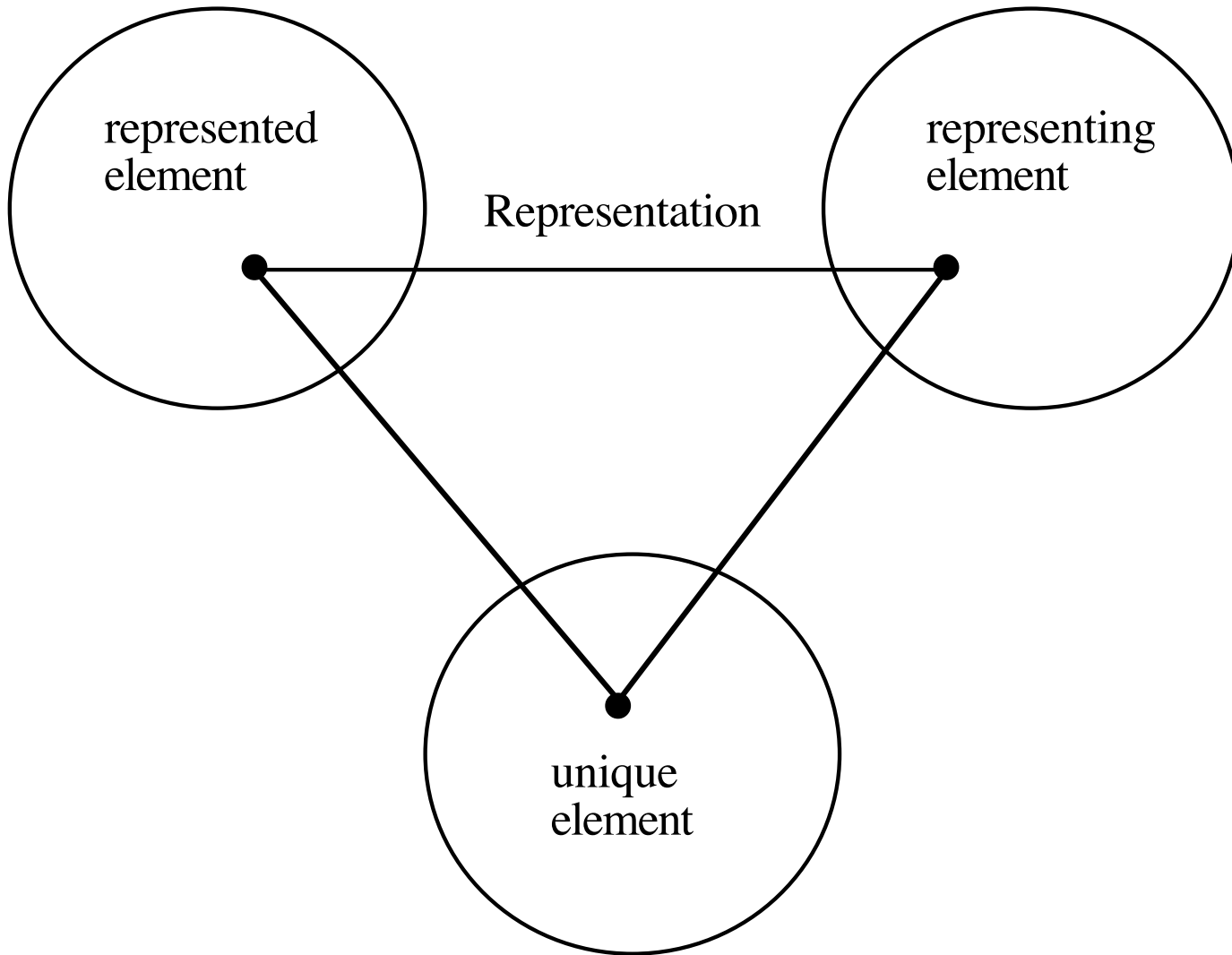
Shared Structure

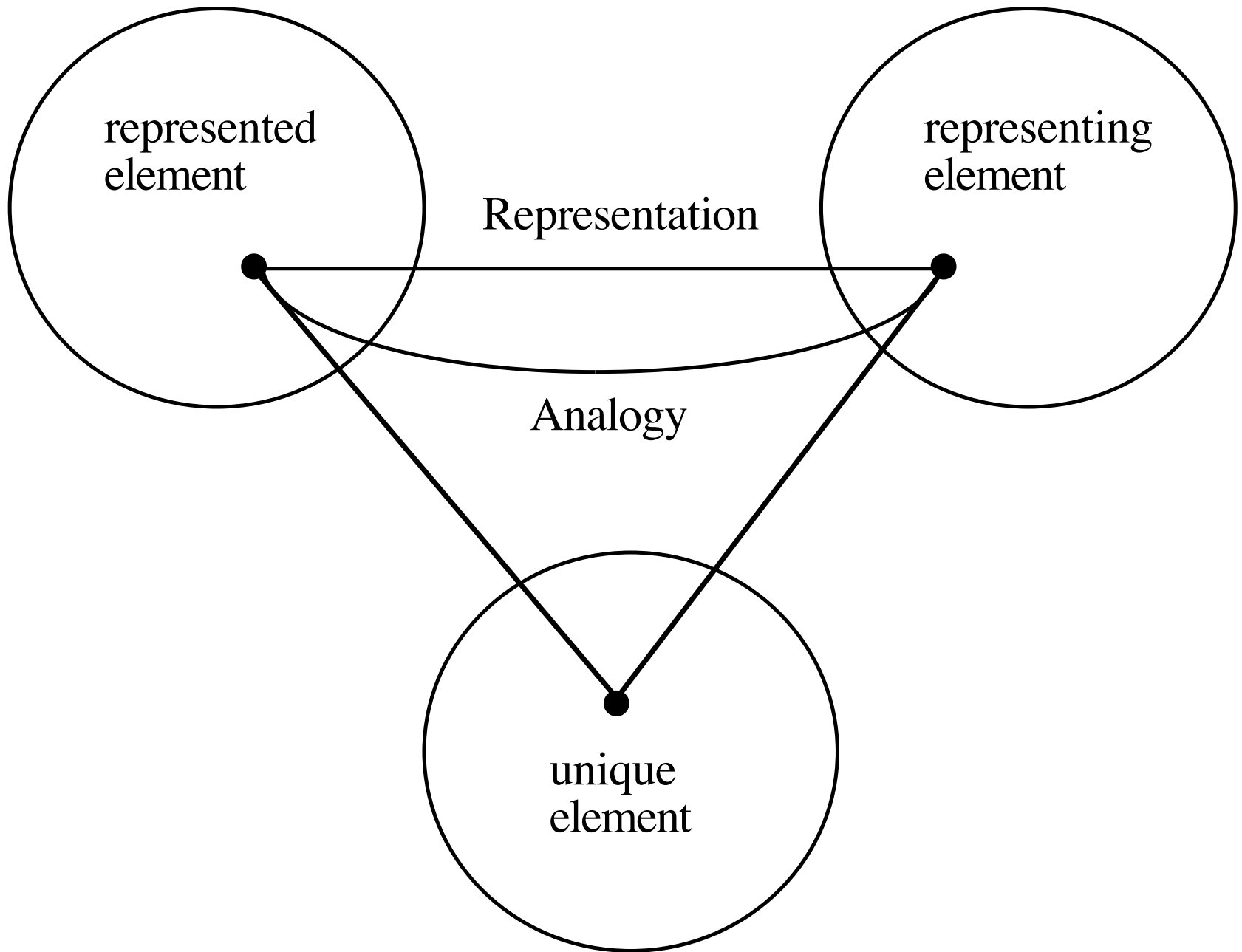
Seal

Human Being

Blend:
Seal with a mind







Window, gap in the curtain, portal.

“Framed glimpse.”

Photographs, sketches, paintings.

Prolonging the glimpse to a stare: a view of motion, dynamism.

“Putting” something into the picture.

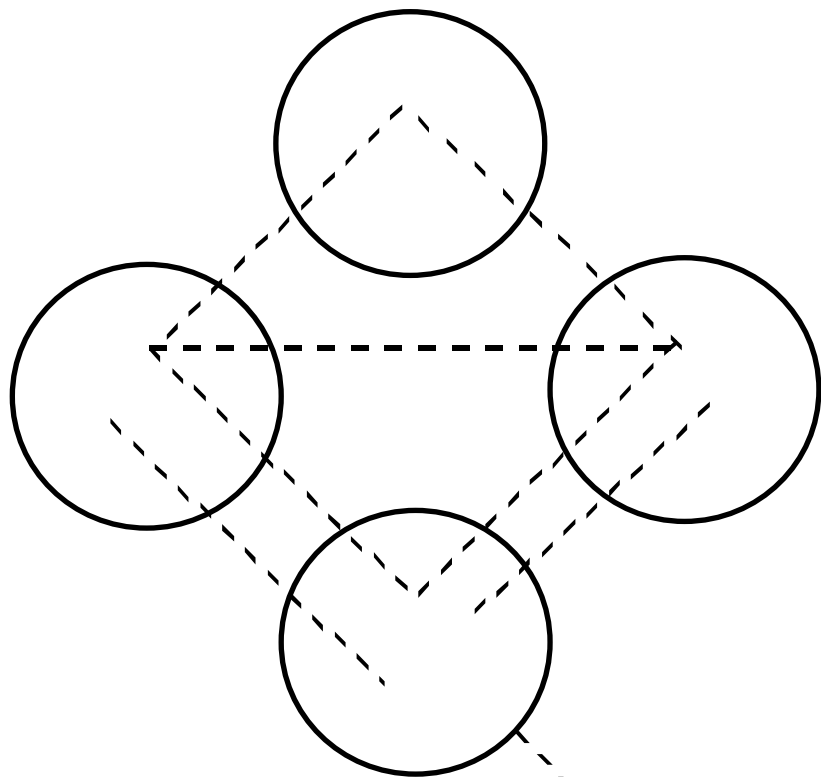
Throwing something through a portal.

Passing through the portal.

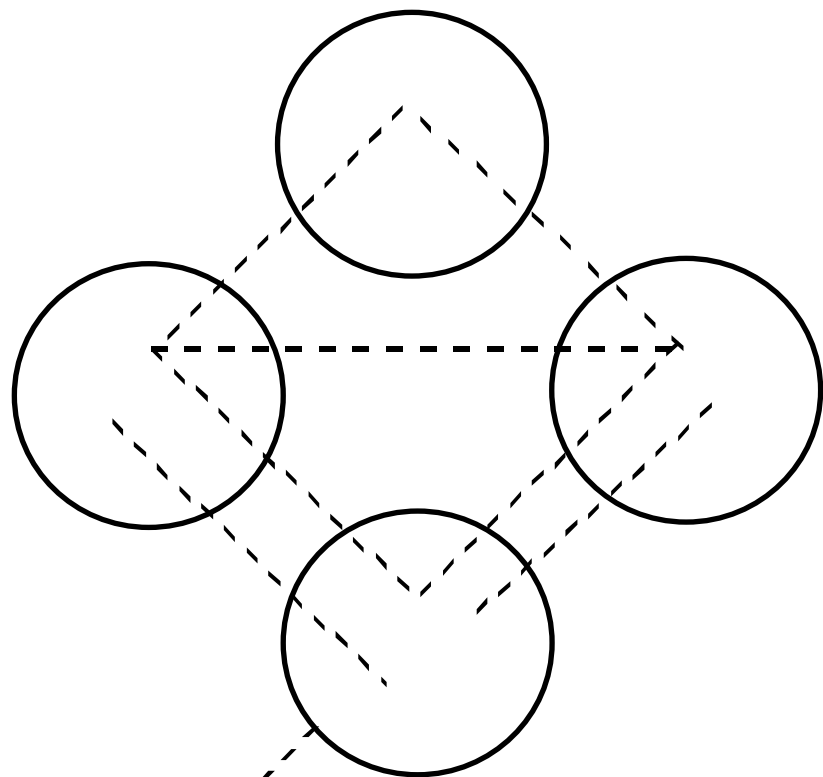
Interacting.

“Picture World.” *John’s Picture*.

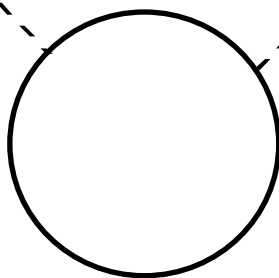
Blending multiple picture worlds: Celeste, Antonio, Caroline, and Rannuccio



Selkie World



Picture World



Selkie/Picture
World

I turned the knob and pushed open the door. Celeste, Antonio, Caroline, and Rannuccio came behind me, but when they reached the doorway, they found they could go no farther.

“This is not the painting,” said Antonio.

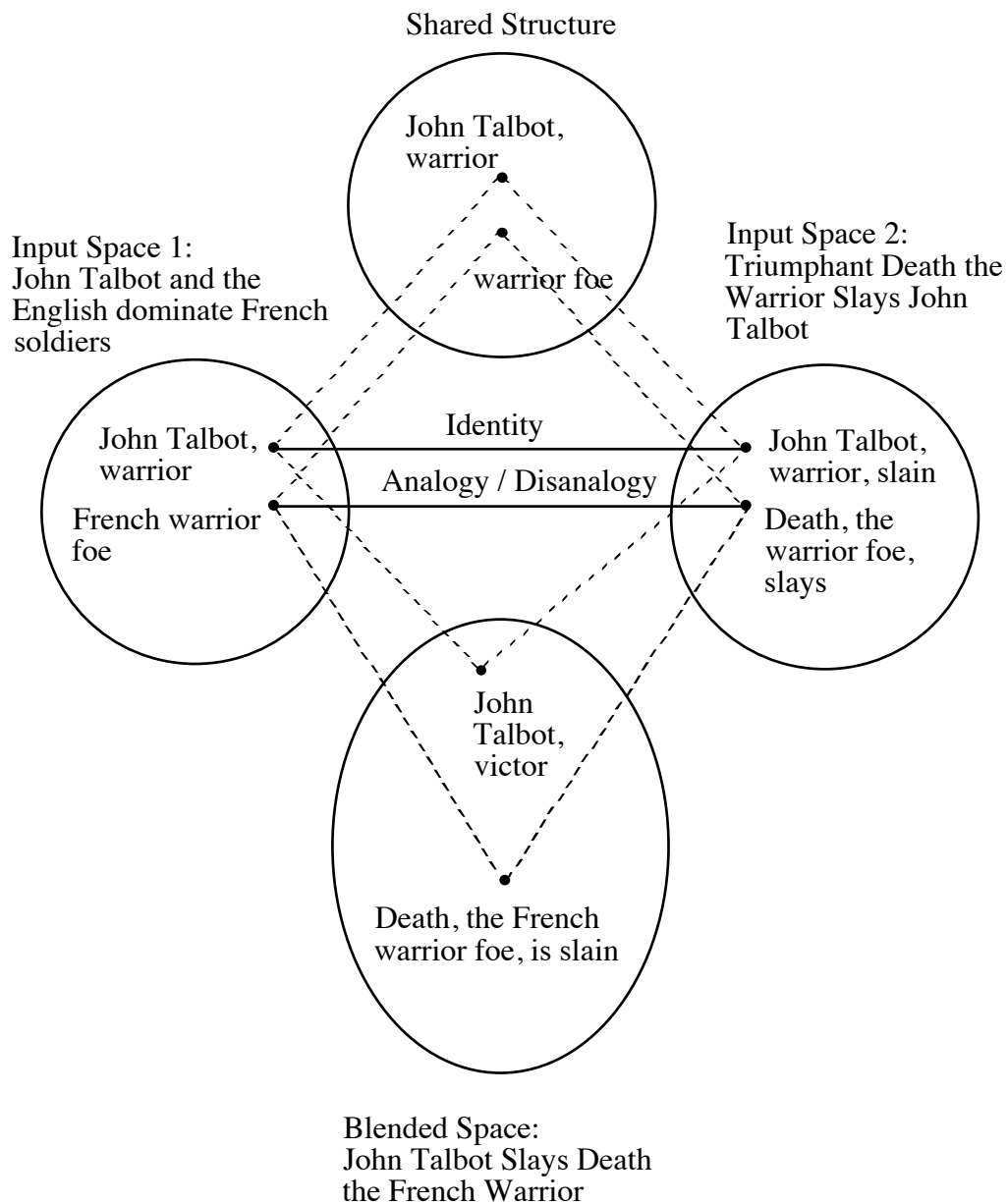
The harlequin: two possible kinds of blending networks.

Charlotte, Marguerite, the child reader.

Triumphant death, smear'd with captivity,
Young Talbot's valour makes me smile at thee.
When he perceiv'd me shrink and on my knee,
His bloody sword he brandish'd over me,
And like a hungry lion did commence
Rough deeds of rage and stern impatience;
But when my angry guardant stood alone,
Tend'ring my ruin and assail'd of none,
Dizzy-ey'd fury and great rage of heart
Suddenly made him from my side to start
Into the clust'ring battle of the French;
And in that sea of blood my boy did drench
His overmounting spirit; and there died,
My Icarus, my blossom, in his pride.

*-King Henry the Sixth, part one, Act 4, Scene 7, lines
3-16.*

Thou antic death, which laugh'st us here to scorn,
Anon, from thy insulting tyranny,
Coupled in bonds of perpetuity,
Two Talbots, winged through the lither sky,
In thy despite shall 'scape mortality.
O, thou, whose wounds become hard-favour'd death,
Speak to thy father ere thou yield thy breath!
Brave death by speaking, whether he will or no;
Imagine him a Frenchman and thy foe.
Poor boy! he smiles, methinks, as who should say,
Had death been French, then death had died to-day.
-King Henry the Sixth, part one, Act 4, Scene 7, lines 18-28.



If John were David, he would be married by now.

... he would be rich by now.

... he would be a stockbroker.

... he would use his mobile phone.

If John were French, he would have attended the École des Hautes Études en Sciences Sociales.

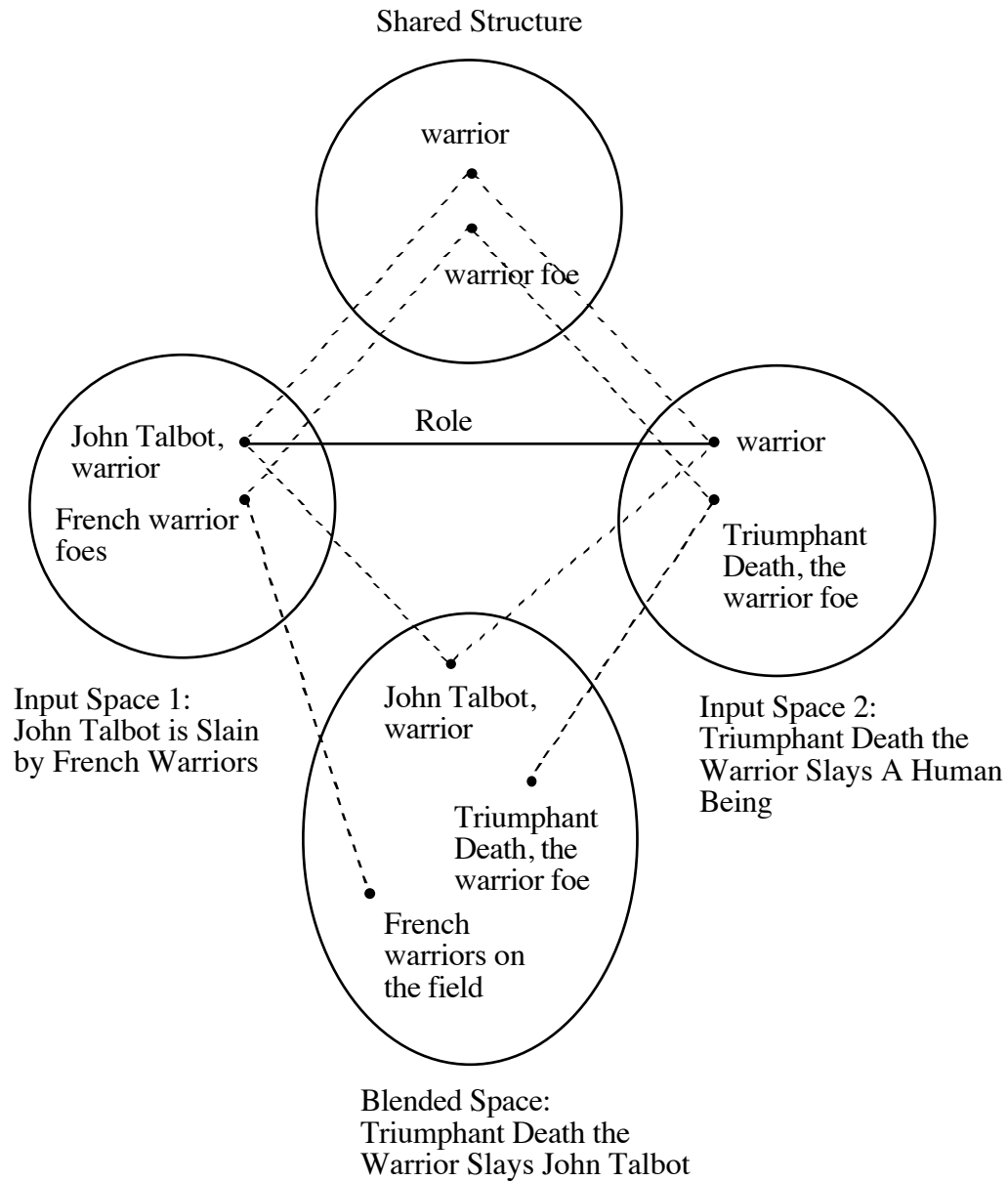
... he would prefer to lecture in English.

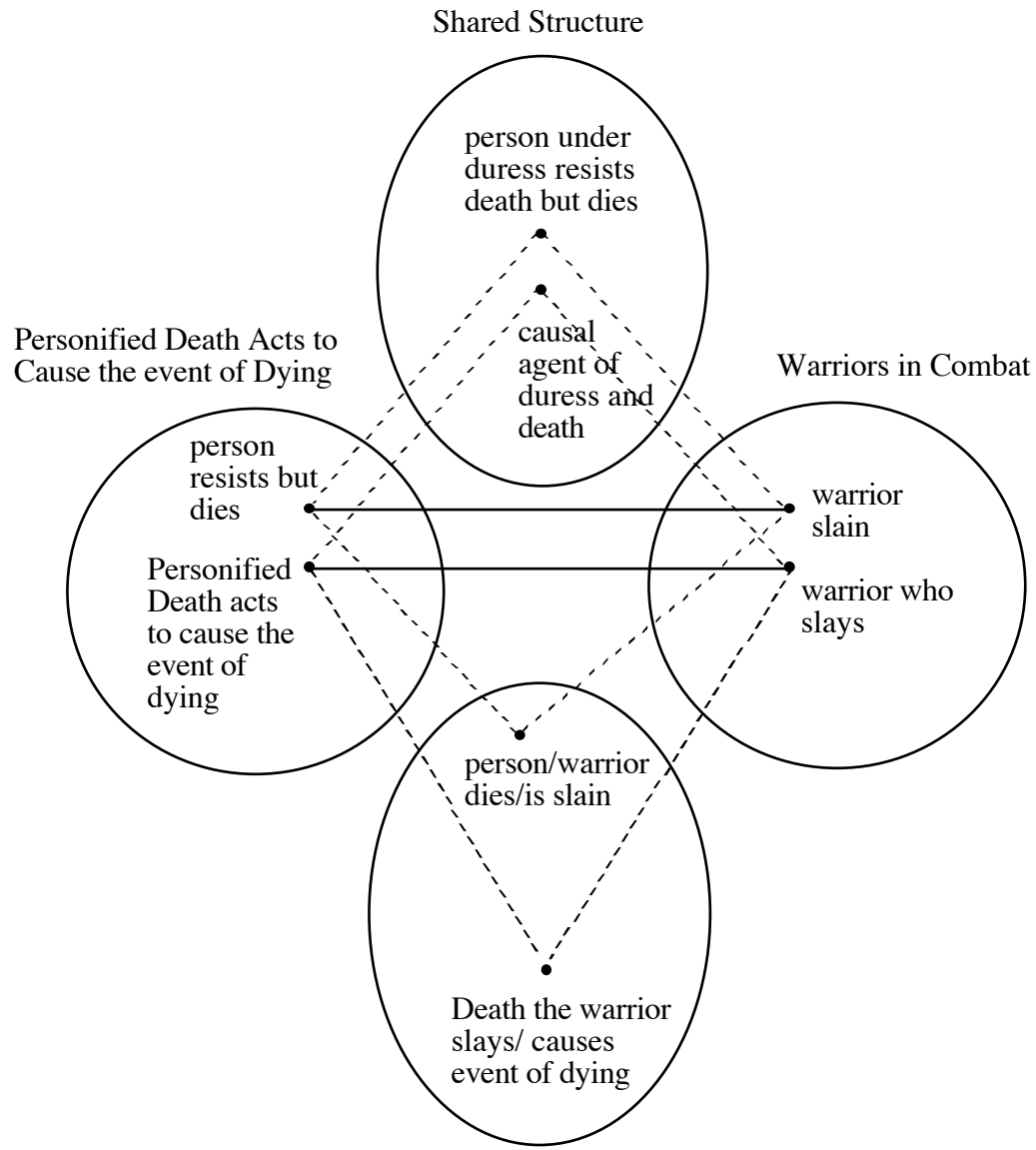
... he would live in the Lyonnais.

Crucially, there is *emergent structure* in each of these blends that is not directly available from either input. We can understand and even assent to the first set of assertions regardless of whether *married*, *wealthy*, *stockbroker*, or *possesses a mobile phone* can be found in either the *David* input space or the *John* input space. We can assent to each of the statements in the second set even though it is possible to be French without attending the *École des Hautes Études en Sciences Sociales*, without preferring English, and without living in the *Lyonnais*, and even if John has never attended college, has never spoken English, and has never lived in France. Conceptual blending develops new meaning out of old. It helps us re-conceive old meaning, even in cases where the blend itself is regarded as false. (Incidentally, blending two people or a person and a category of person is by no means limited to counterfactual blends. We can say, “If John is David, he is rich,” in the case where we are wondering whether John and David are the same person, and we can say, “If John is French, he must do his military service,” in the case where we are uncertain of John’s nationality but suspect that he is French. We can also say it when it has been reported to us reliably that John is in fact French.)

Come, come, and lay him in his father's arms.
My spirit can no longer bear these harms.
Soldiers, adieu! I have what I would have,
Now my old arms are young John Talbot's grave. [Dies]

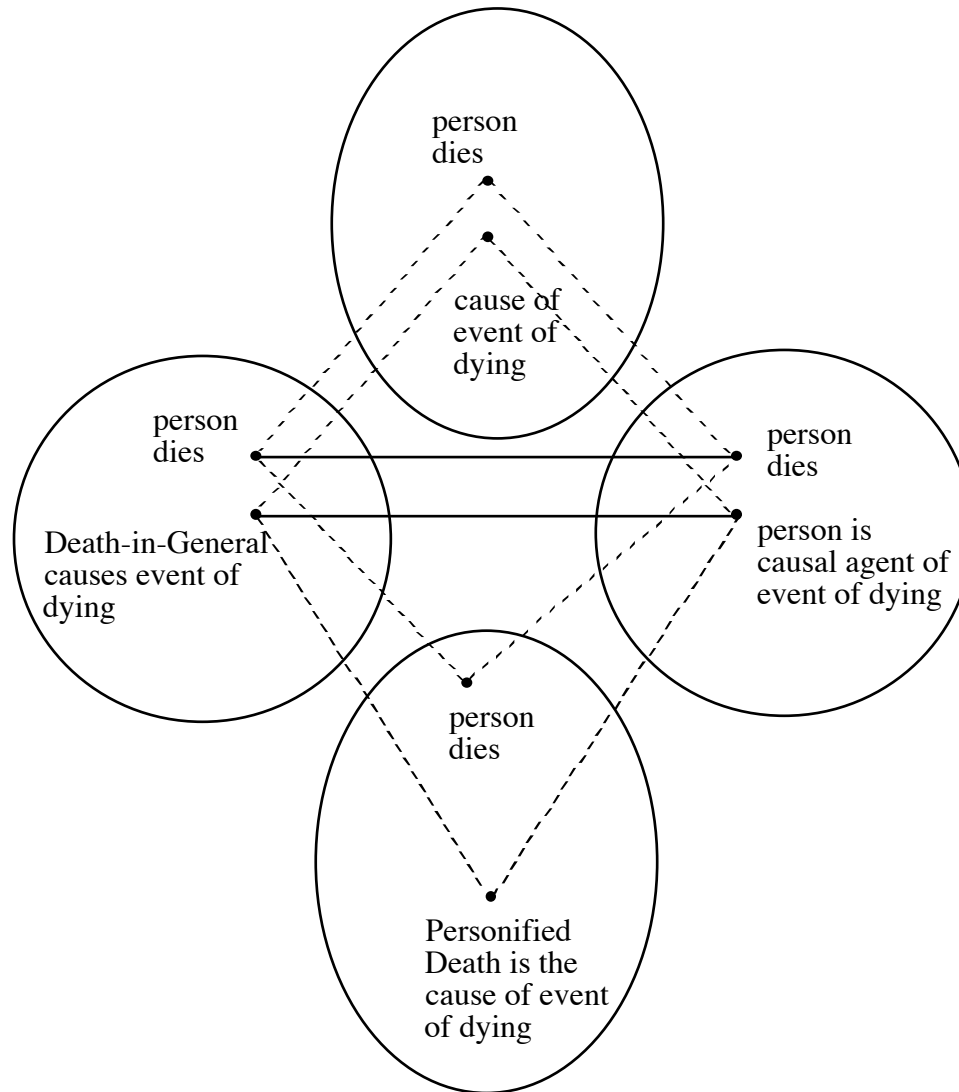
-King Henry the Sixth, part one, Act 4, Scene 7, lines 29-32.



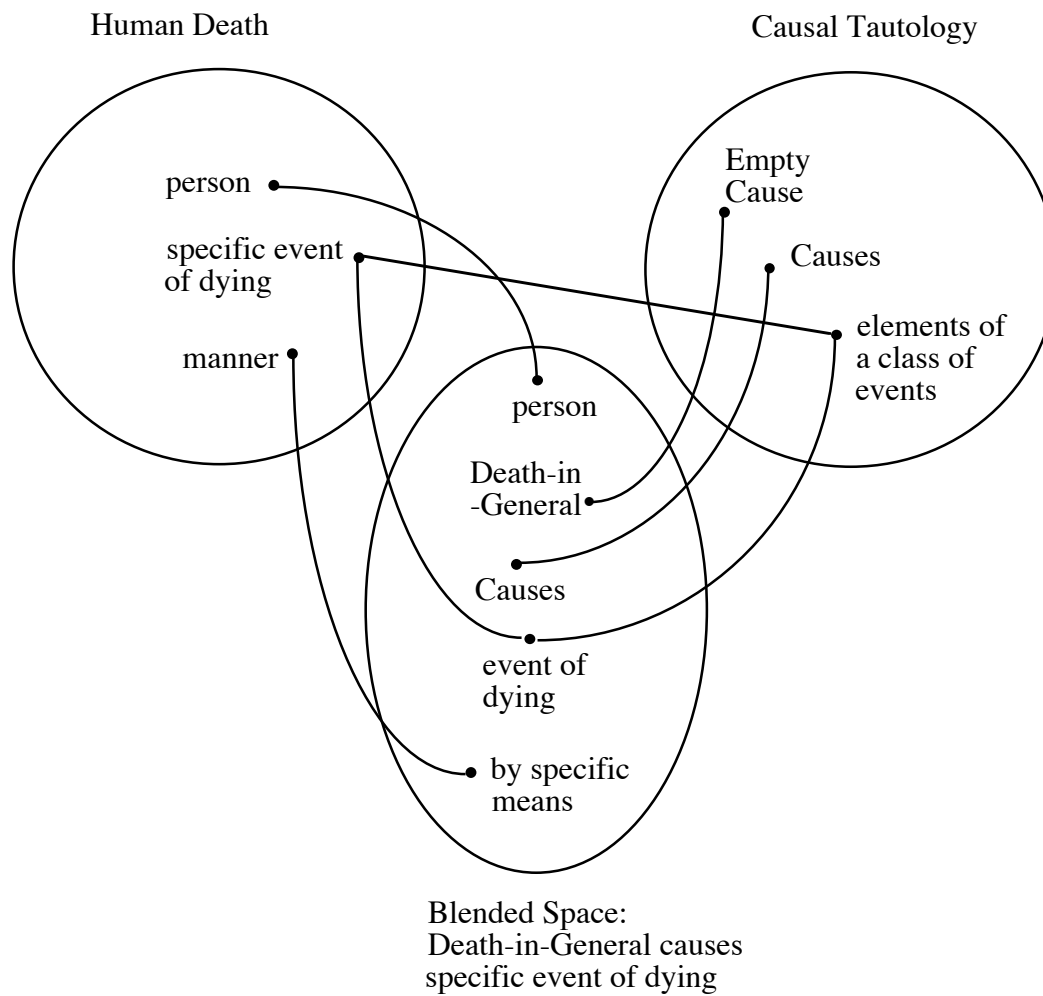


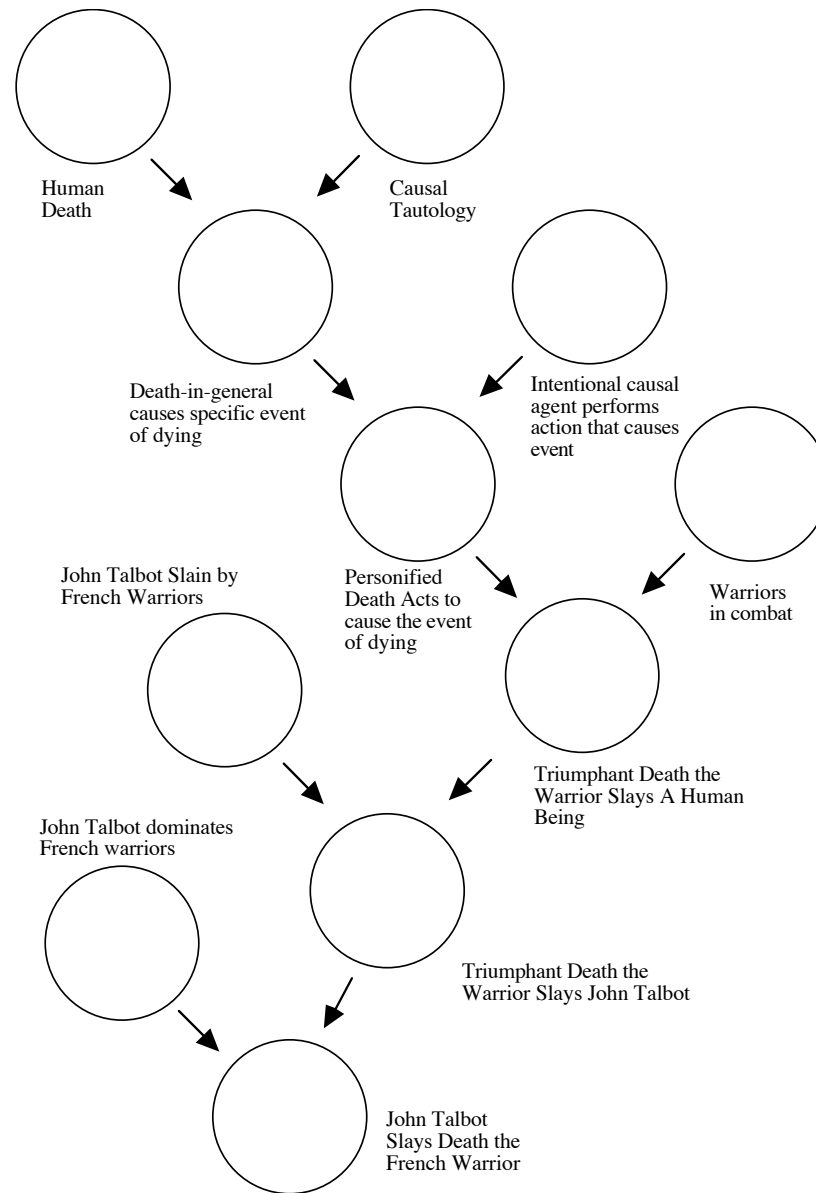
Blended Space:
 Triumphant Death the Warrior
 Slays A Human Being

Shared Structure



Blended Space:
Personified Death causes
event of dying





Lord Talbot understands that imagined scenes can arouse strong emotions and powerfully shape the way we think and behave. Fervently wanting his son to speak to him before dying, and knowing his son's great motivation to defy the enemy, old Talbot prompts young Talbot to construct a blend in which Death intends to terminate John and his activity, to shut him down, to silence him. In such a blend, merely speaking becomes an act of defiance and bravery. This blend accordingly allows the son to tap his greatest sources of energy: his will to obey his father, his will to respect his father, and his will to defy the enemy. In the blend, they all motivate him in the same direction. In the blend, for John, to speak at all becomes simultaneously an act of obedience and respect for his father and an act of defiance of their joint enemy.

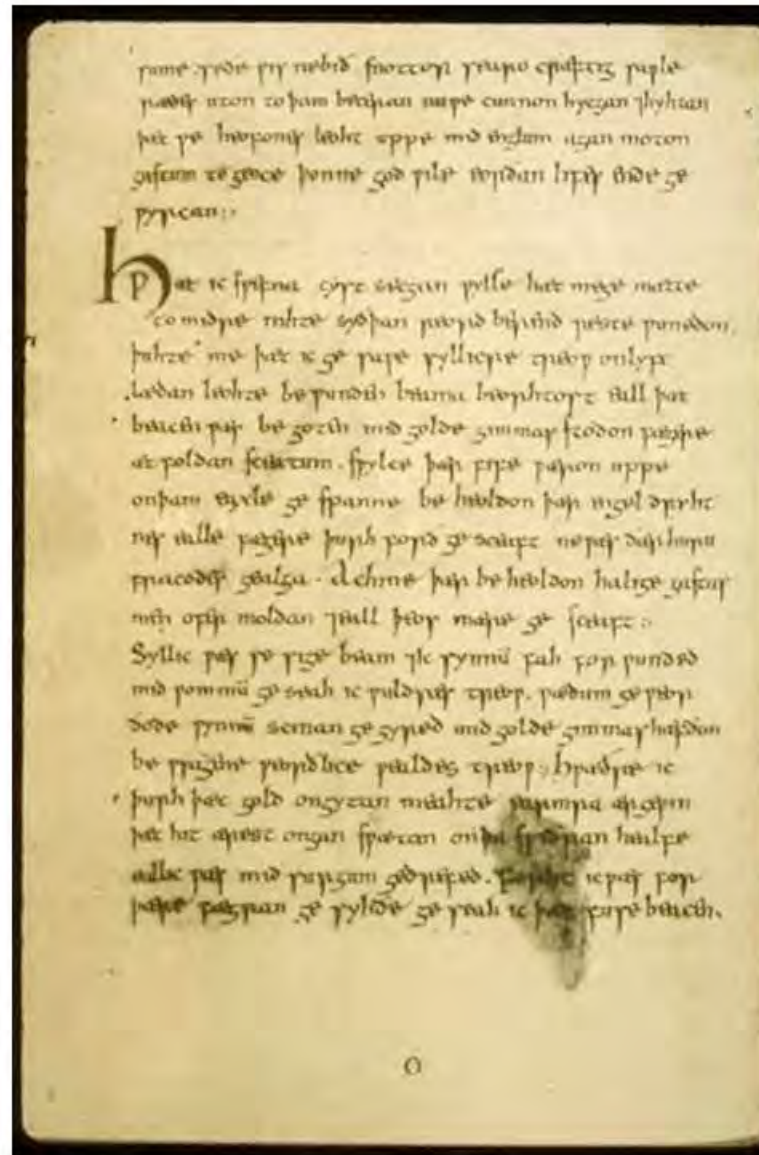
Paradise Lost, Book 2

These yelling Monsters that with ceaseless cry
Surround me, as thou saw'st, hourly conceiv'd
And hourly born, with sorrow infinite
To me, for when they list, into the womb
That bred them they return, and howl and gnaw
My Bowels, thir repast; then bursting forth
Afresh with conscious terrors vex me round,
That rest or intermission none I find.

Paradise Lost, Book 2

At last this odious offspring whom thou seest
Thine own begotten, breaking violent way
Tore through my entrails, that with fear and pain
Distorted, all my nether shape thus grew
Transform'd.

Dream of the Rood



Ruthwell Cross







谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Ten Lectures on Mind and Language

<http://marktturner.org>

Department of Cognitive Science



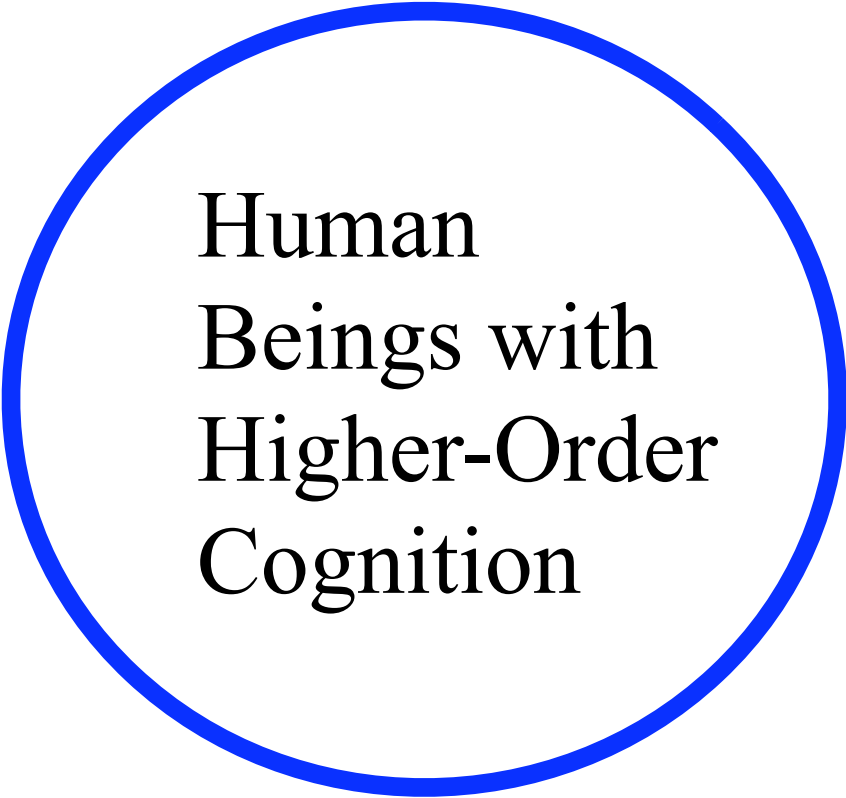
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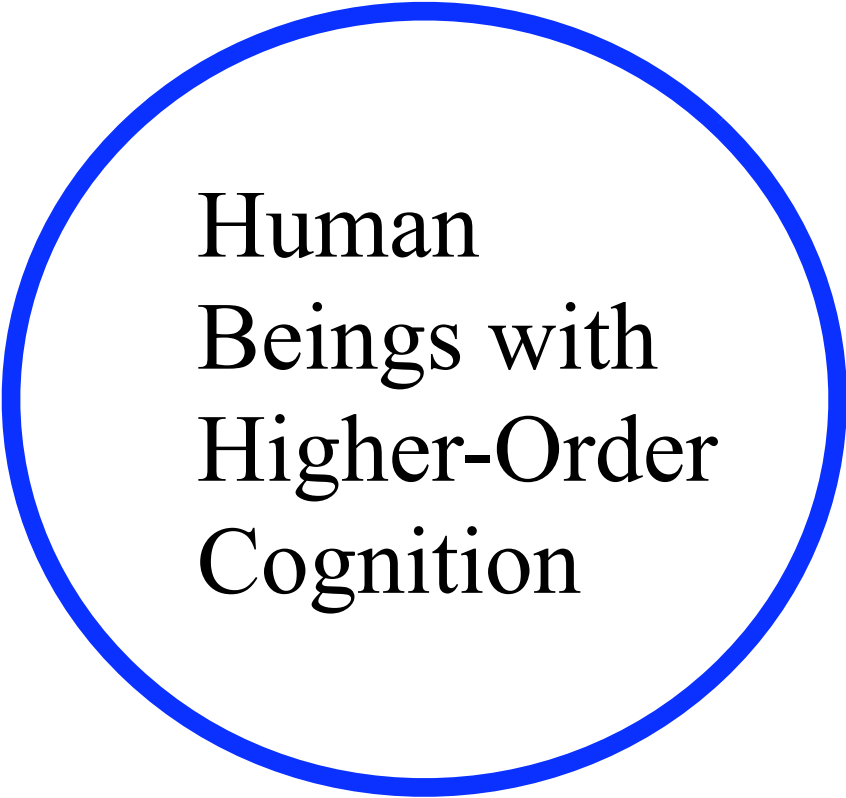
The Nature of Language



Human
Beings with
Higher-Order
Cognition



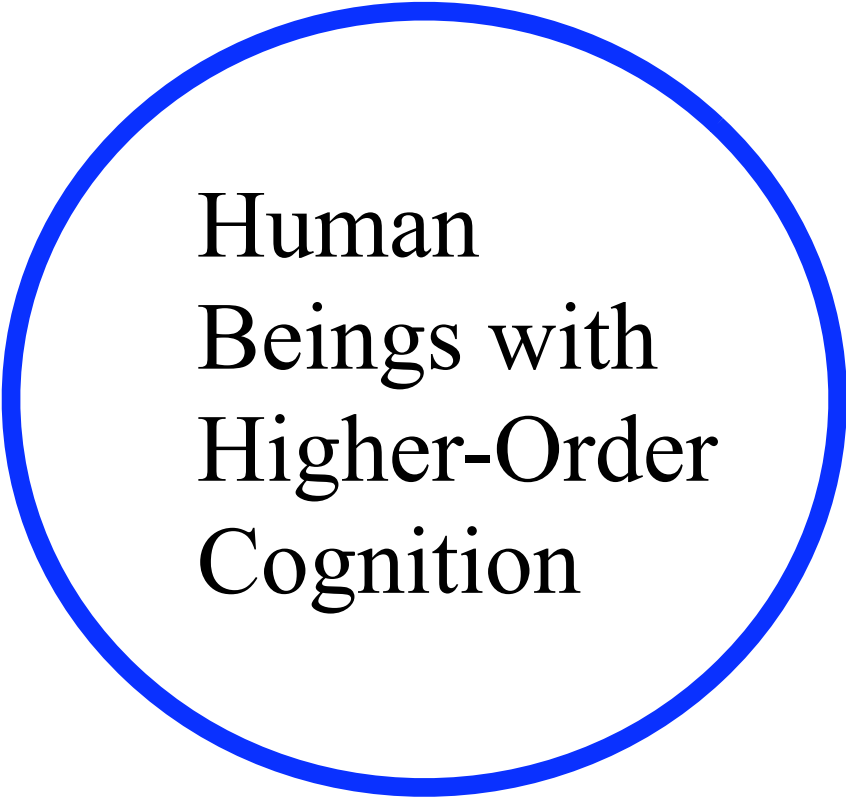
Social
Ontology &
Deontology



Human
Beings with
Higher-Order
Cognition



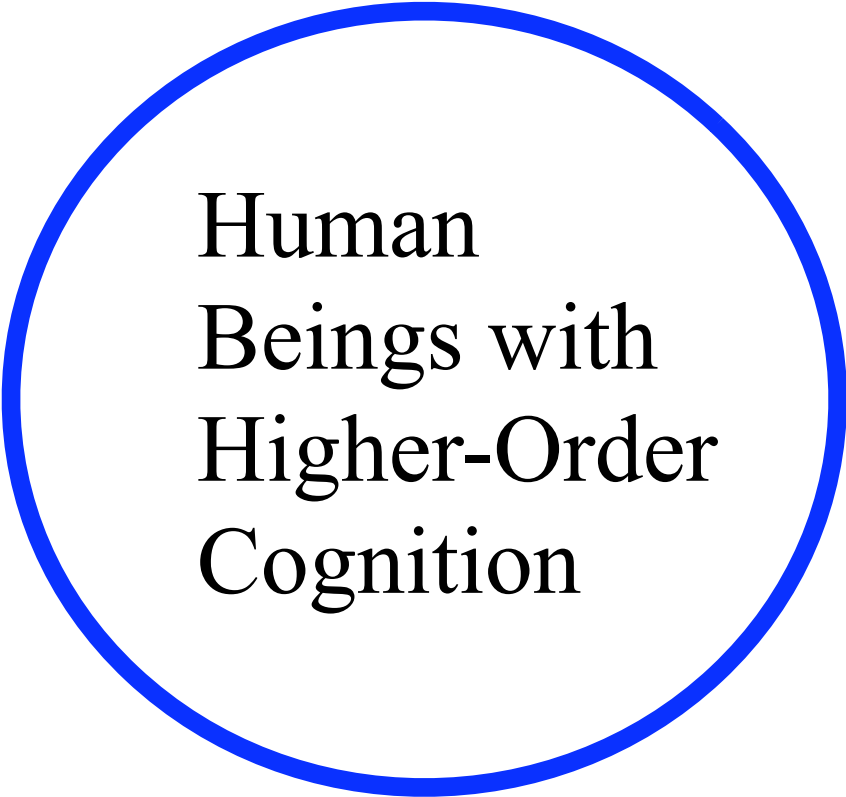
Social
Ontology &
Deontology



Human
Beings with
Higher-Order
Cognition



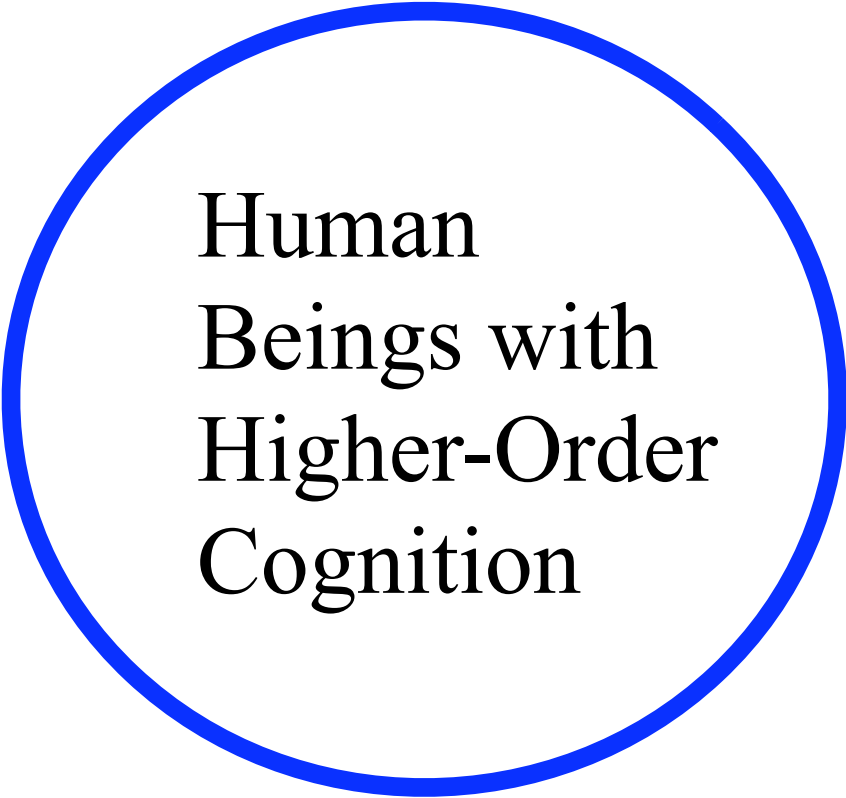
Social
Ontology &
Deontology



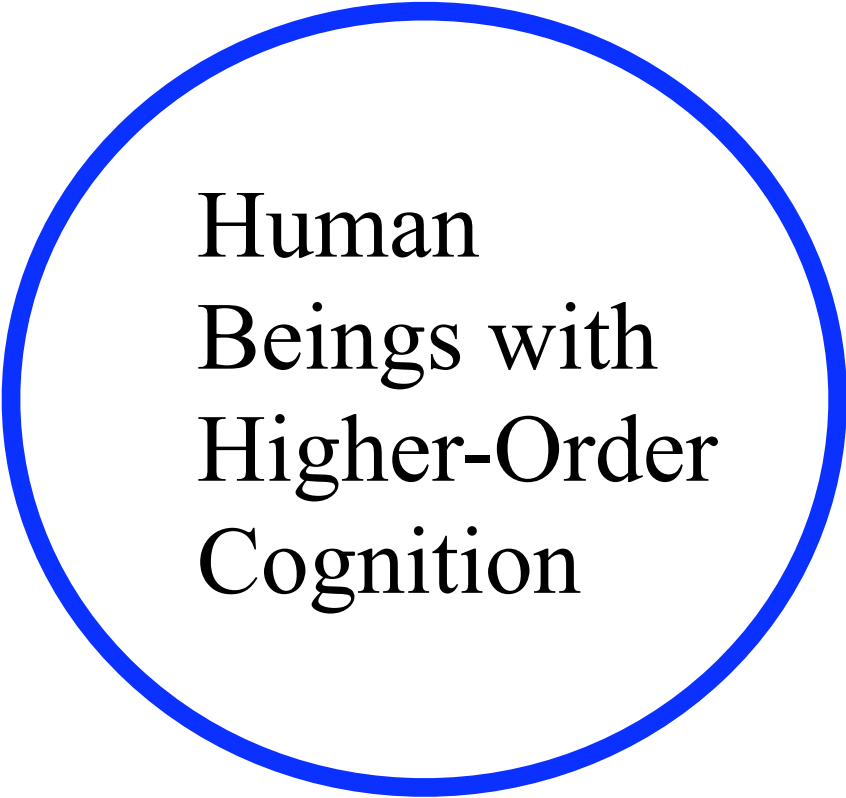
Human
Beings with
Higher-Order
Cognition



Social
Ontology &
Deontology

A blue circle is centered on the left side of the slide. Inside the circle, the text "Human Beings with Higher-Order Cognition" is written in a black serif font, arranged in four lines.

Human
Beings with
Higher-Order
Cognition

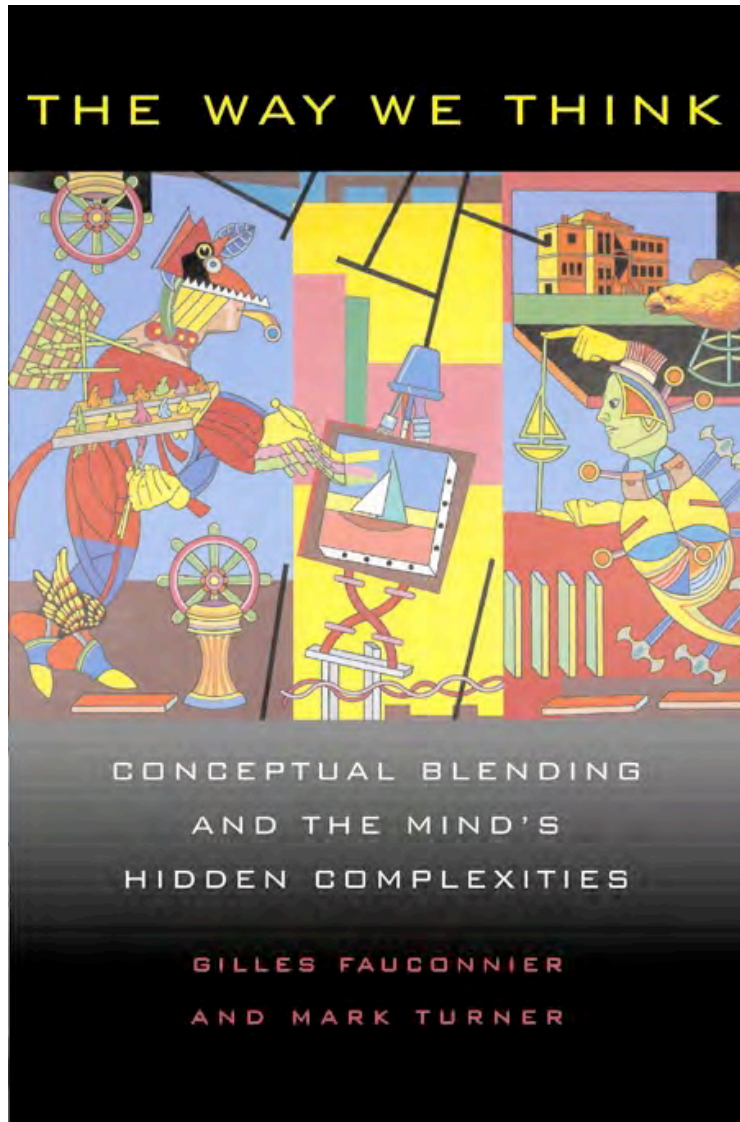


Human
Beings with
Higher-Order
Cognition



Social
Ontology &
Deontology

What is language and where
did it come from?



*The Way We Think:
Conceptual Blending and
the Mind's Hidden
Complexities*

Gilles Fauconnier & Mark
Turner, Basic Books, 2002

blending.stanford.edu

What is language and where did it come from?

- Nativist theories
- Modularity
- Coevolutionary
- Associative & learning theories

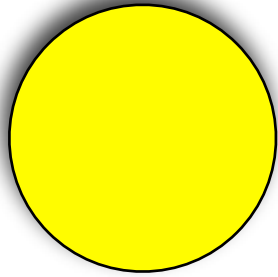
Cause-Effect Isomorphism Fallacy

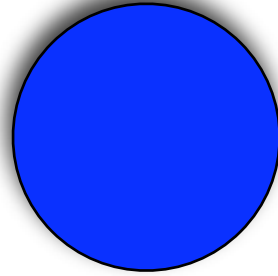
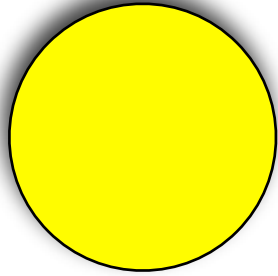
Function-Organ Isomorphism Fallacy

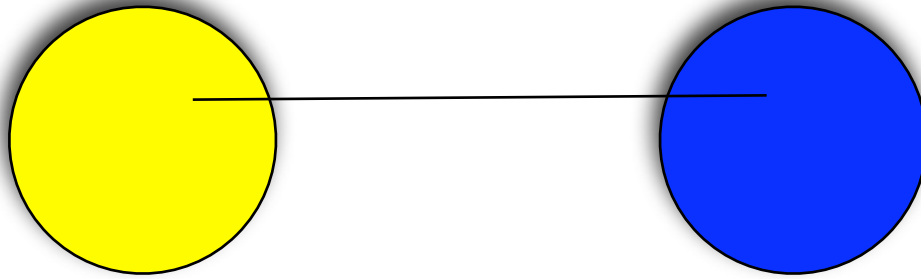
The origin of language as a product of the evolution of modern cognition

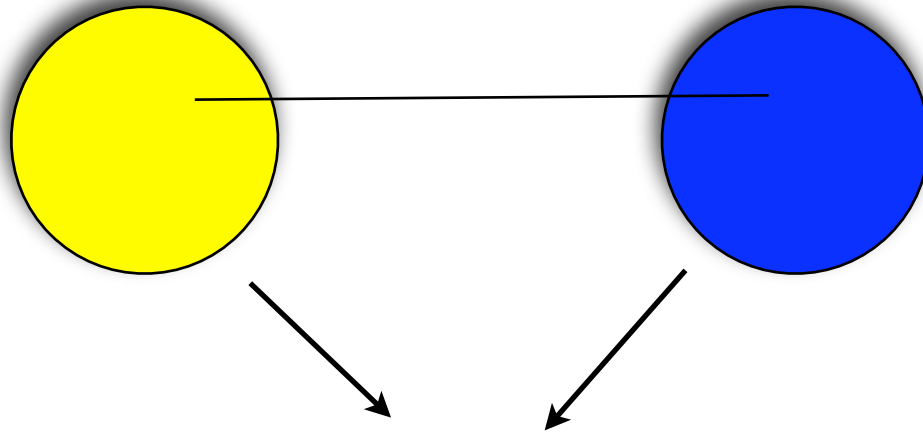
Blending and Language

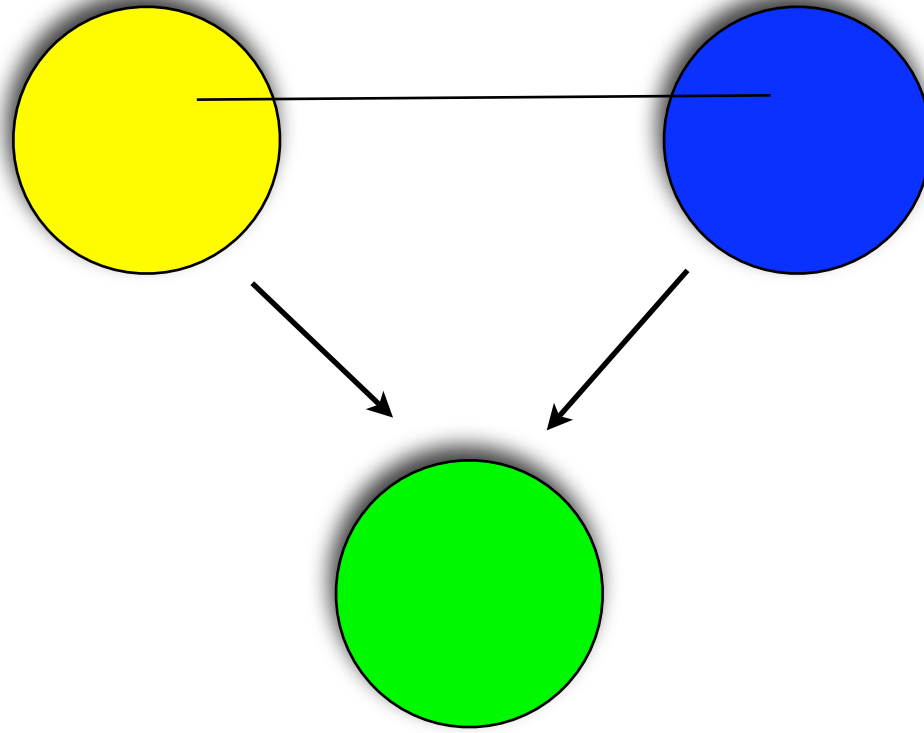
- Conceptual integration: Human beings have remarkable abilities to perform a basic mental operation we call **conceptual integration**, or **blending**.
- In particular, they have the ability to do the strongest form, called **double-scope blending**.
- Other species have the ability to do rudimentary blending. The ability to do blending has been evolving since early mammals.
- The evolution of **double-scope blending made human singularities possible**: language, art, science, advanced tool use, mathematics, fashions of dress, music and dance, culture.
- These human singularities are the products of double-scope blending. They have been invented by cognitively modern human beings in cultural time.











A Martian Sends A Postcard Home
By Craig Raine (1979)

Caxtons are mechanical birds with many wings
and some are treasured for their markings—

they cause the eyes to melt
or the body to shriek without pain

I have never seen one fly, but
sometimes they perch on the hand.

Mist is when the sky is tired of flight
and rests its soft machine on ground:

then the world is dim and bookish
like engravings under tissue paper.

Rain is when the earth is television.
It has the property of making colours darker.

Model T is a room with the lock inside—
a key is turned to free the world

for movement, so quick there is a film
to watch for anything missed.

But time is tied to the wrist
or kept in a box, ticking with impatience.

In homes, a haunted apparatus sleeps,
that snores when you pick it up.

If the ghost cries, they carry it
to their lips and soothe it to sleep

with sounds. And yet, they wake it up
deliberately, by tickling with a finger.

Only the young are allowed to suffer
openly. Adults go to a punishment room

with water but nothing to eat.

They lock the door and suffer the noises

alone. No one is exempt
and everyone's pain has a different smell.

At night, when all the colours die,
they hide in pairs

and read about themselves—
in colour, with their eyelids shut.

What features should a theory
of the origin of language
have?

—A recognition of the singularity of language. There is no evidence of sustained intermediate stages phylogenetically, and no evidence of present human languages that are rudimentary.

—Rejection of an extraordinary event as responsible for the extraordinary capacity. In other words, no Cause-Effect Isomorphism.

—A continuous path of evolutionary change over a very long period as the cause of language, since that is how evolution almost always works.

- A path that is a plausible adaptive story: each change along the path must have been adaptive in itself, regardless of where the path ultimately led.
- Hence a continuous evolutionary path that produces singularities.
- A model of what mental operations developed along that path, and in what order.

—An explicit account of what continuous changes produced what singularities, and how they did it.

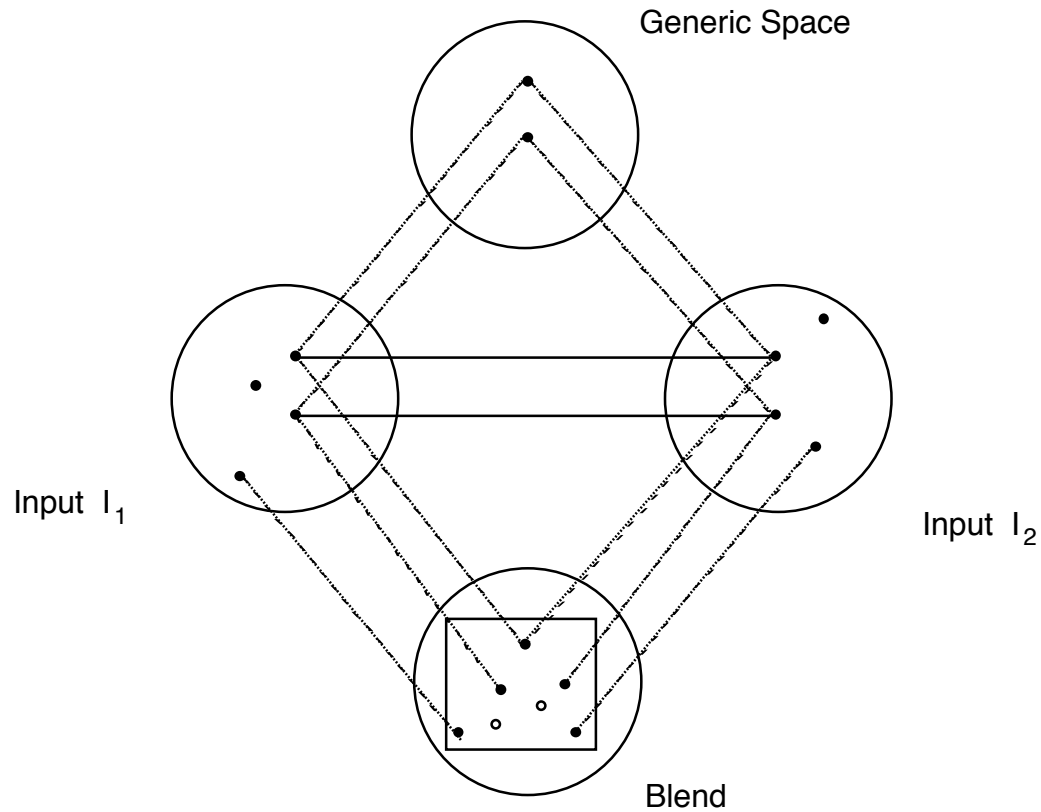
—Robust evidence from many quarters that human beings actually perform the mental operations on that hypothetical path.

—Intermediate steps not for the function of language itself but for the cognitive abilities that finally led to the precipitation of language as a product.

—Evidence in the anatomy or behavior of today's human beings pointing to the history of these steps, just as anatomical evidence in today's human beings points to our once having had tails.

—Other things being equal, a parsimonious way of explaining the emergence of many related human singularities as products that arise along the same continuous evolutionary path.

A typical network



Blending Networks

Simplex

Mirror

Frame-Compatible

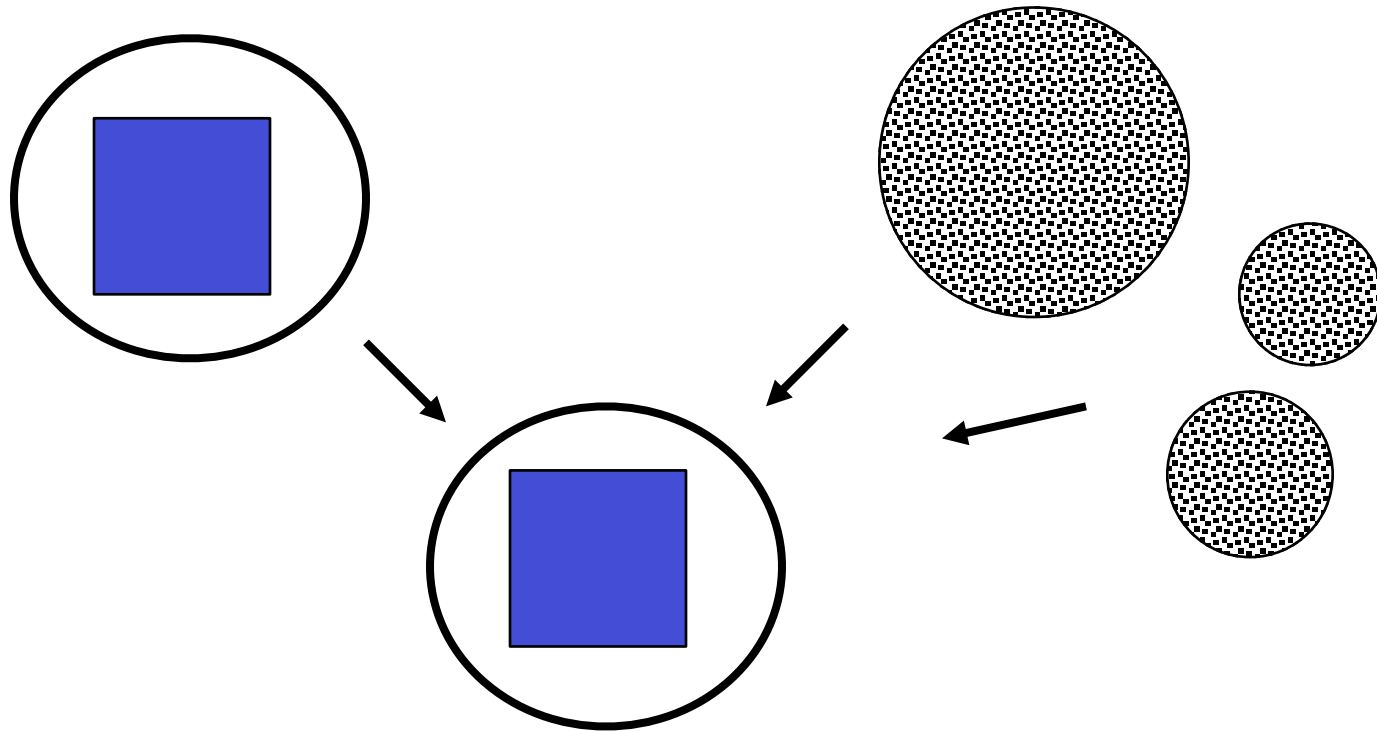
Single-Scope

Double-Scope

Blending Networks

Blending produces
compressions to
human scale

Borrowing a Compression By Blending



Borrowing a Compression Borrows Constructions

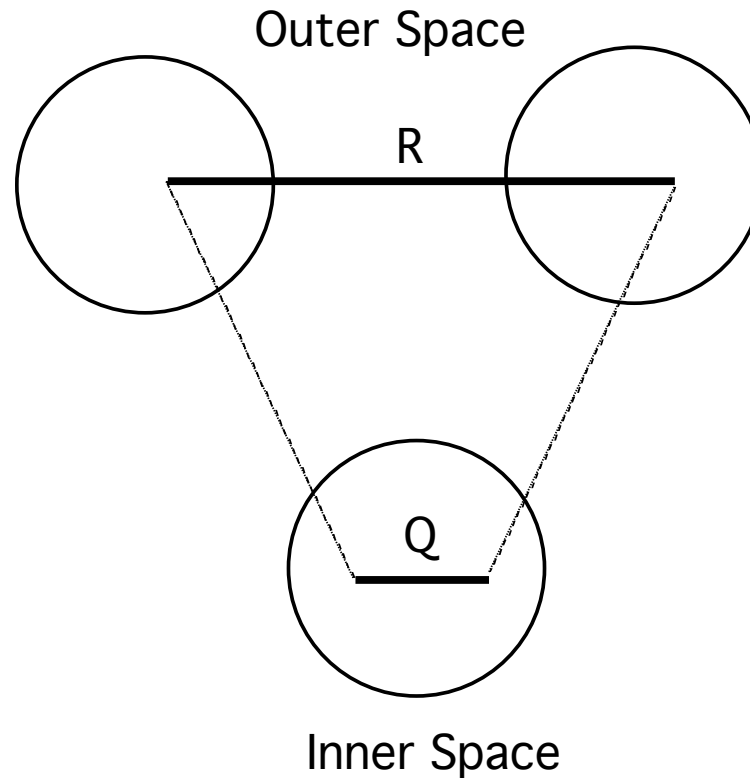
“You are digging your own grave.”

**“If Clinton were the Titanic, the iceberg
would sink.”**

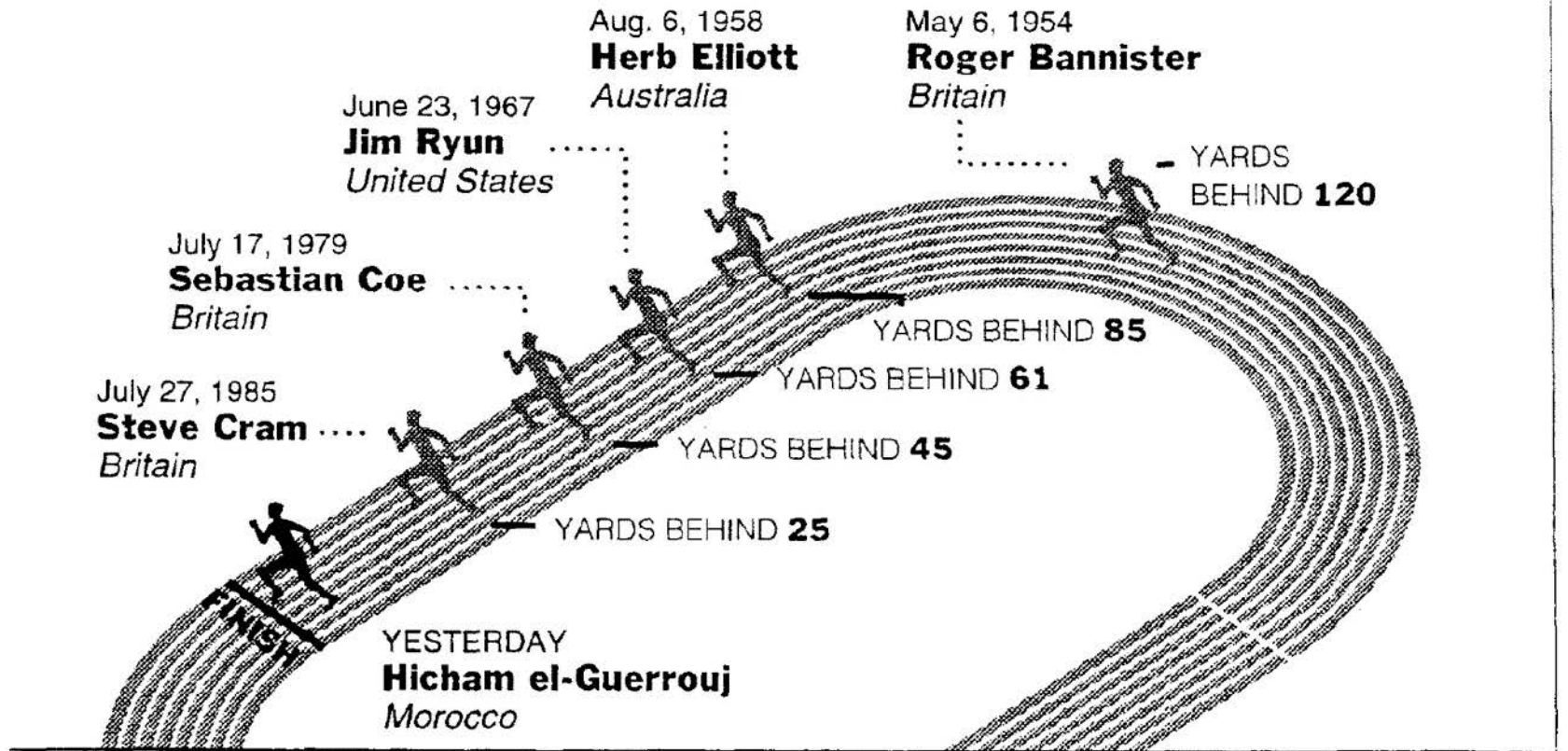
**This happens routinely: basic metaphors,
force-dynamics, mind is a body moving in
space, fictive motion, image-schemas,
images, . . .**

Compressing
outer-space vital relations
into
inner-space structure
in the blend

Compressing Outer-Space Vital Relations to Inner-Space Structure



Mirror Network



The New York Times

World Record in the Mile

chair

Disanalogy

table

table

counterfactual input

“real” input

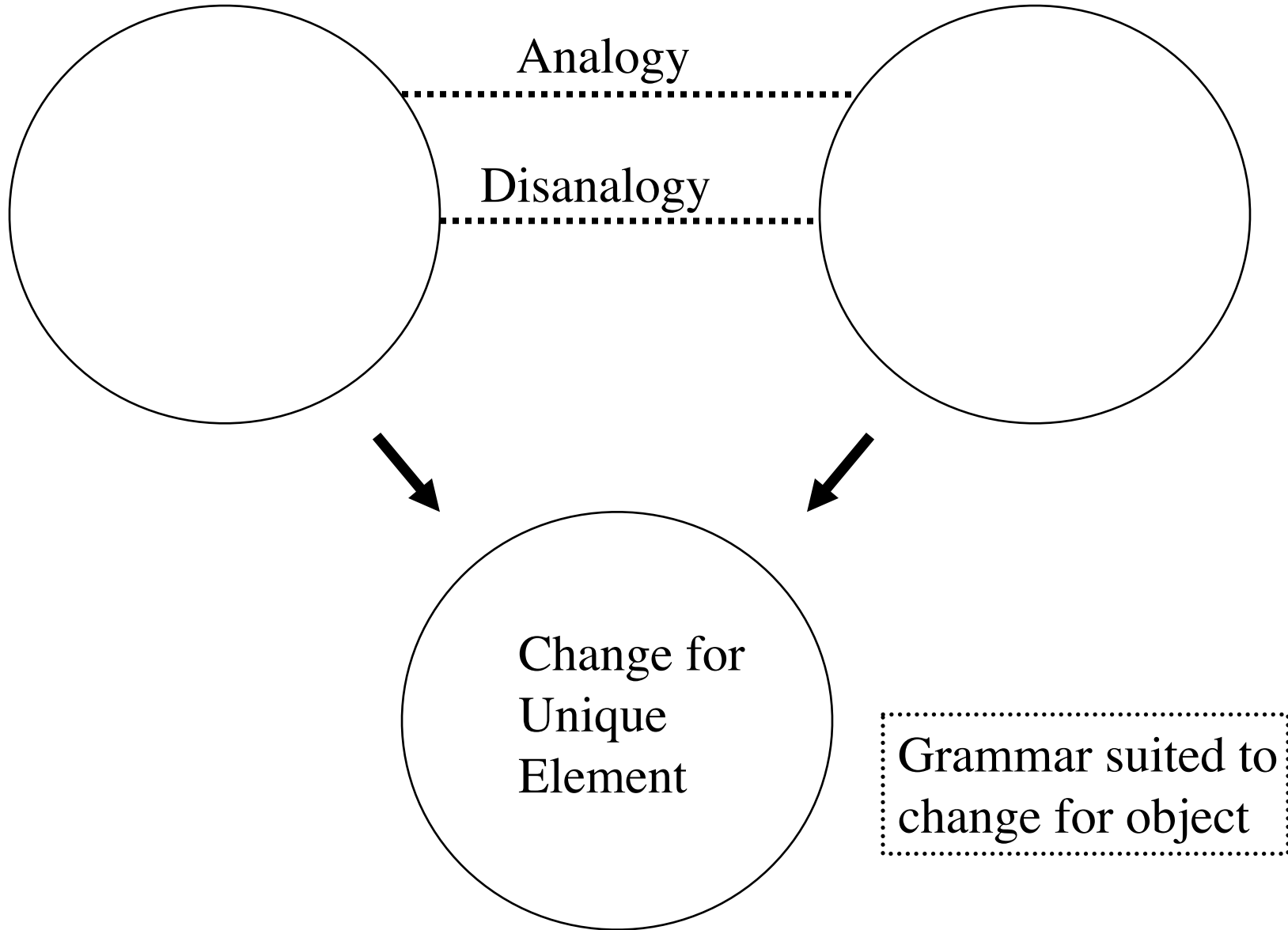
missing chair

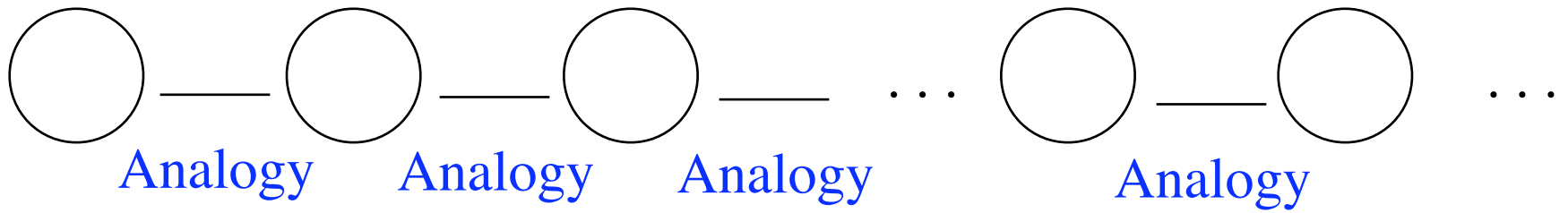
table

Grammar:

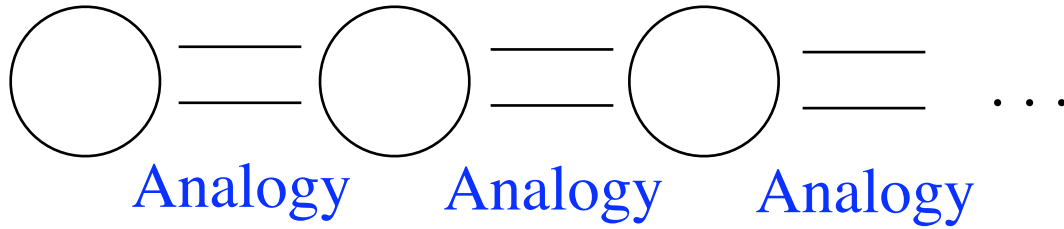
Adj+N

(property-thing)

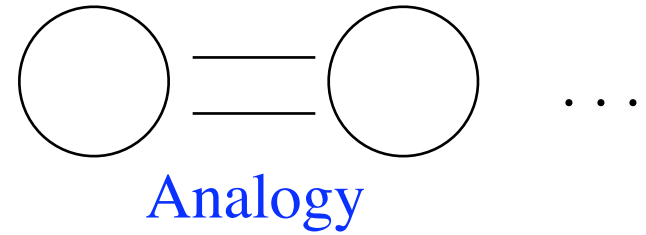




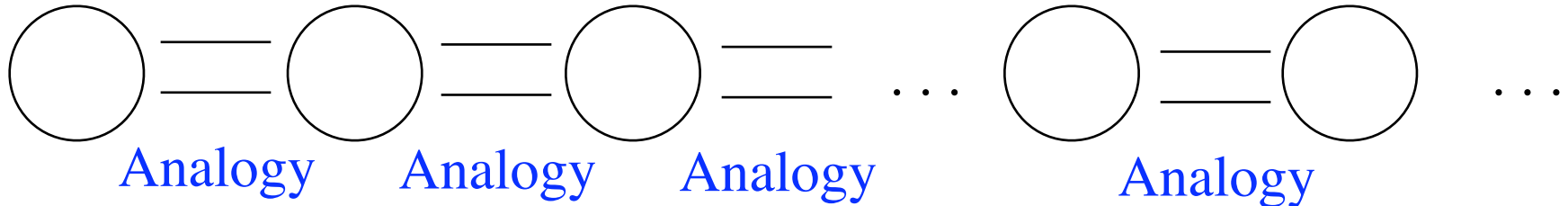
Disanalogy Disanalogy Disanalogy



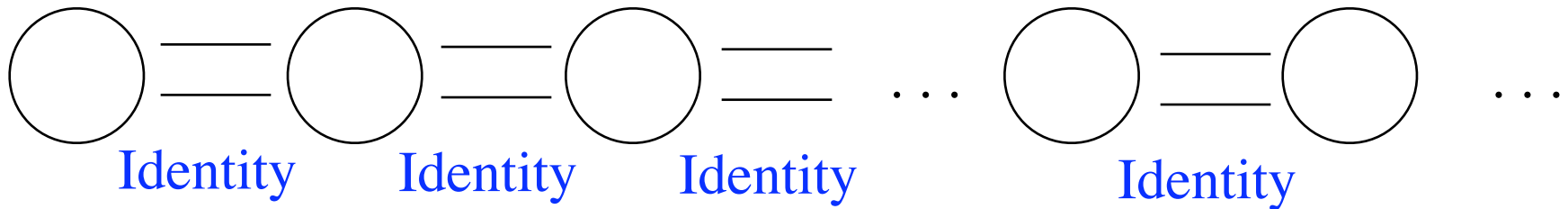
Disanalogy



Disanalogy Disanalogy Disanalogy

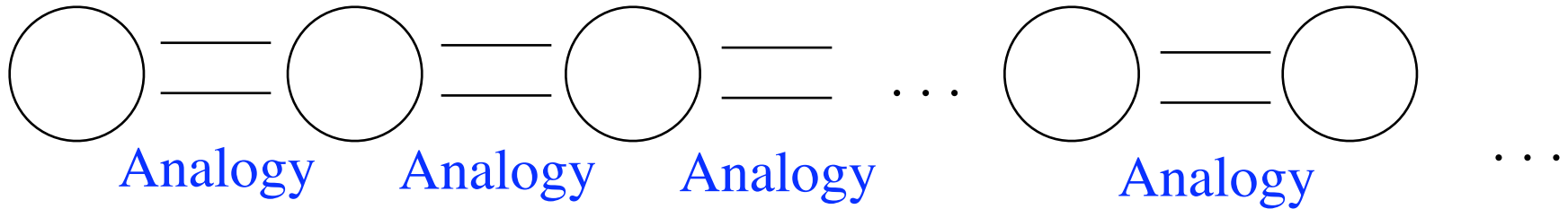


Change Change Change



Disanalogy Disanalogy Disanalogy

Disanalogy

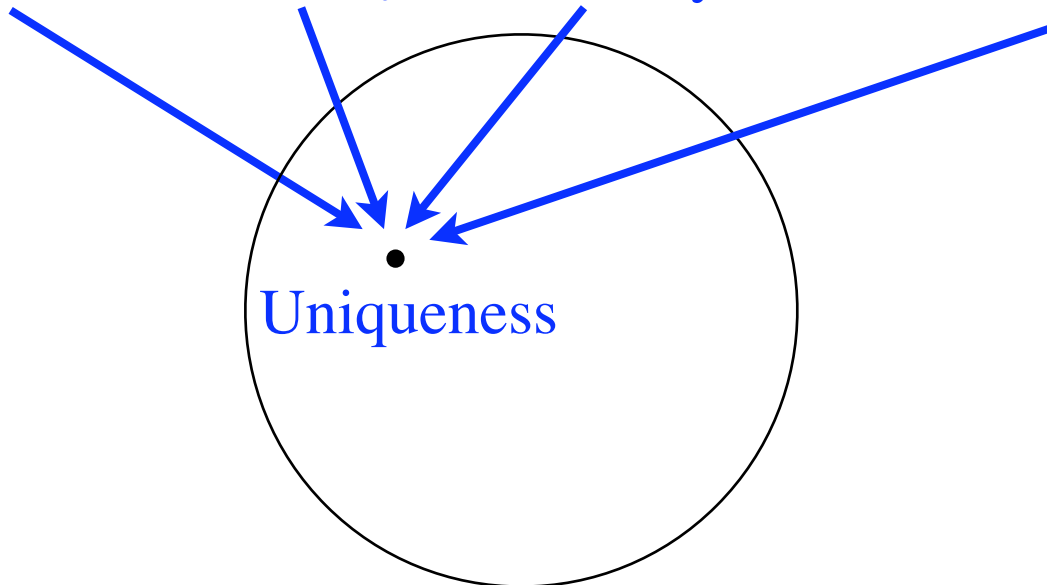
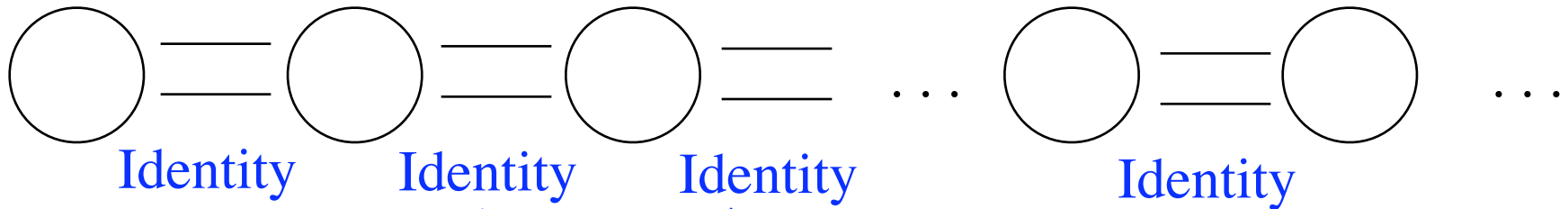


Change

Change

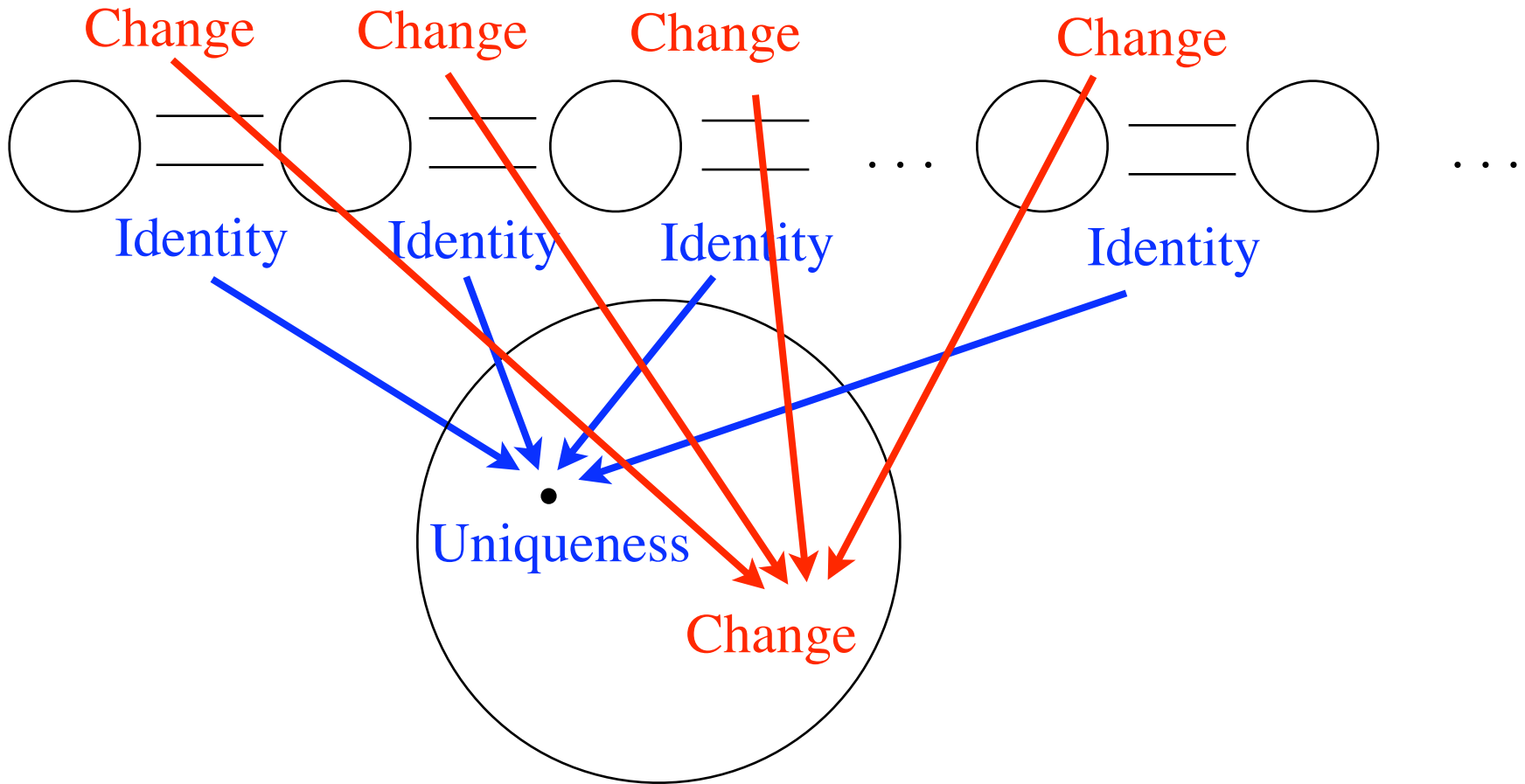
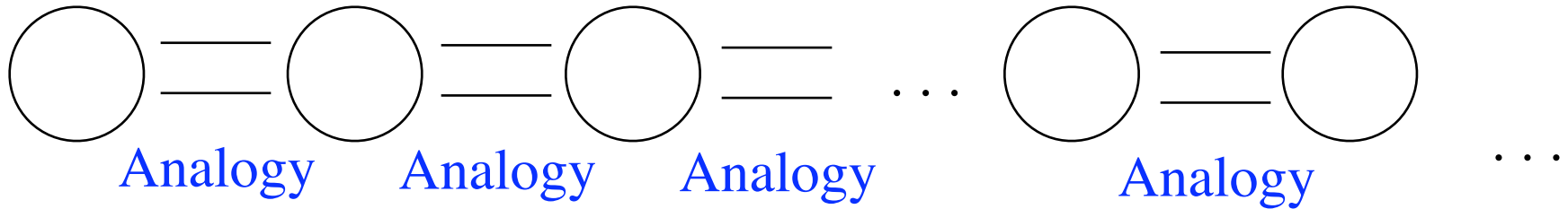
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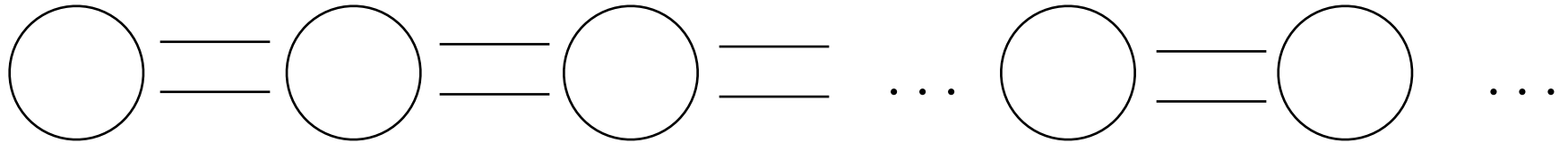
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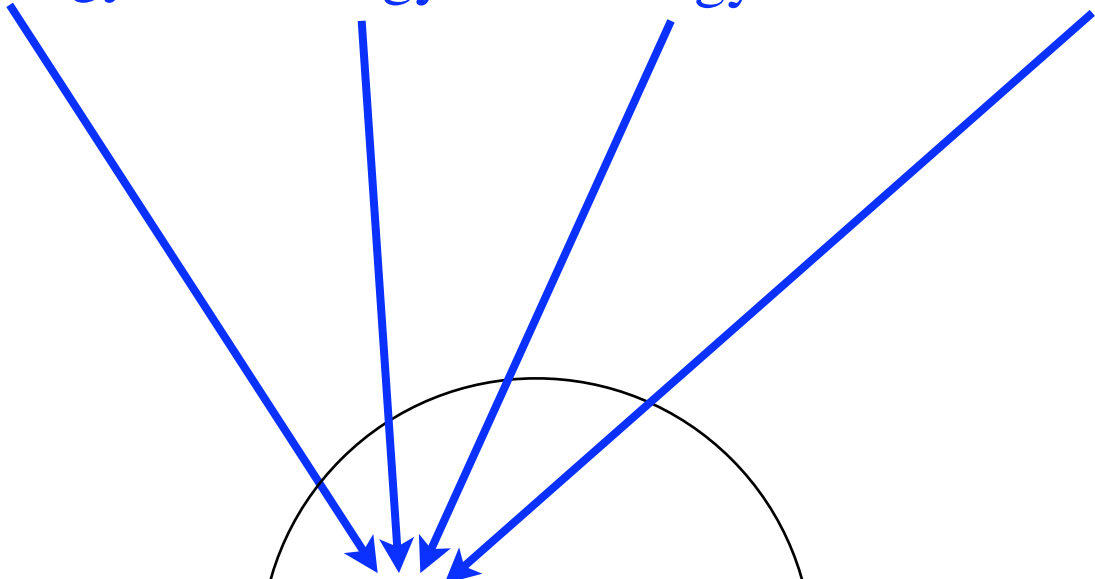
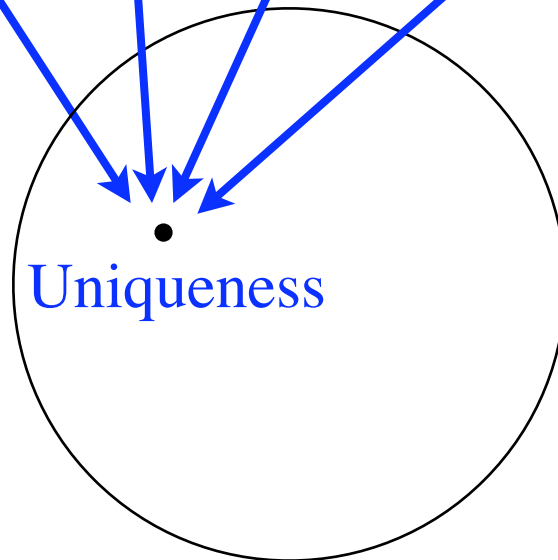


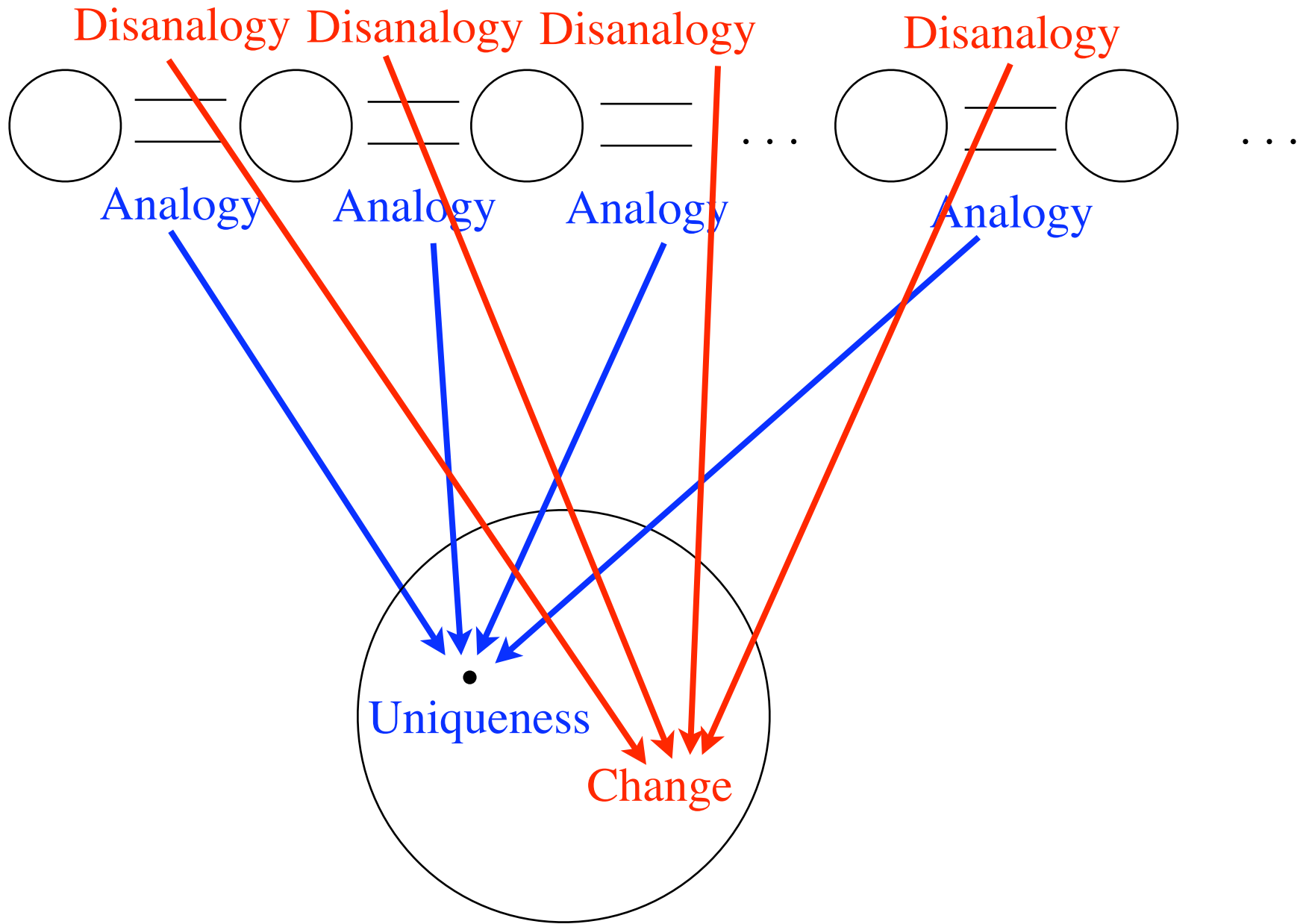
Analogy

Analogy

Analogy

Analogy





“The cars get three feet bigger when you enter Pacific Heights,” (Sweetser 1997)

“The fences get taller as you move westward across the United States,” (Sweetser 1997)

“The paint gets darker as you move down the wall.” (Sweetser 1997)

INPUT 1

NP

agent

a

V

causal action

e

means

manner

motion

NP

object

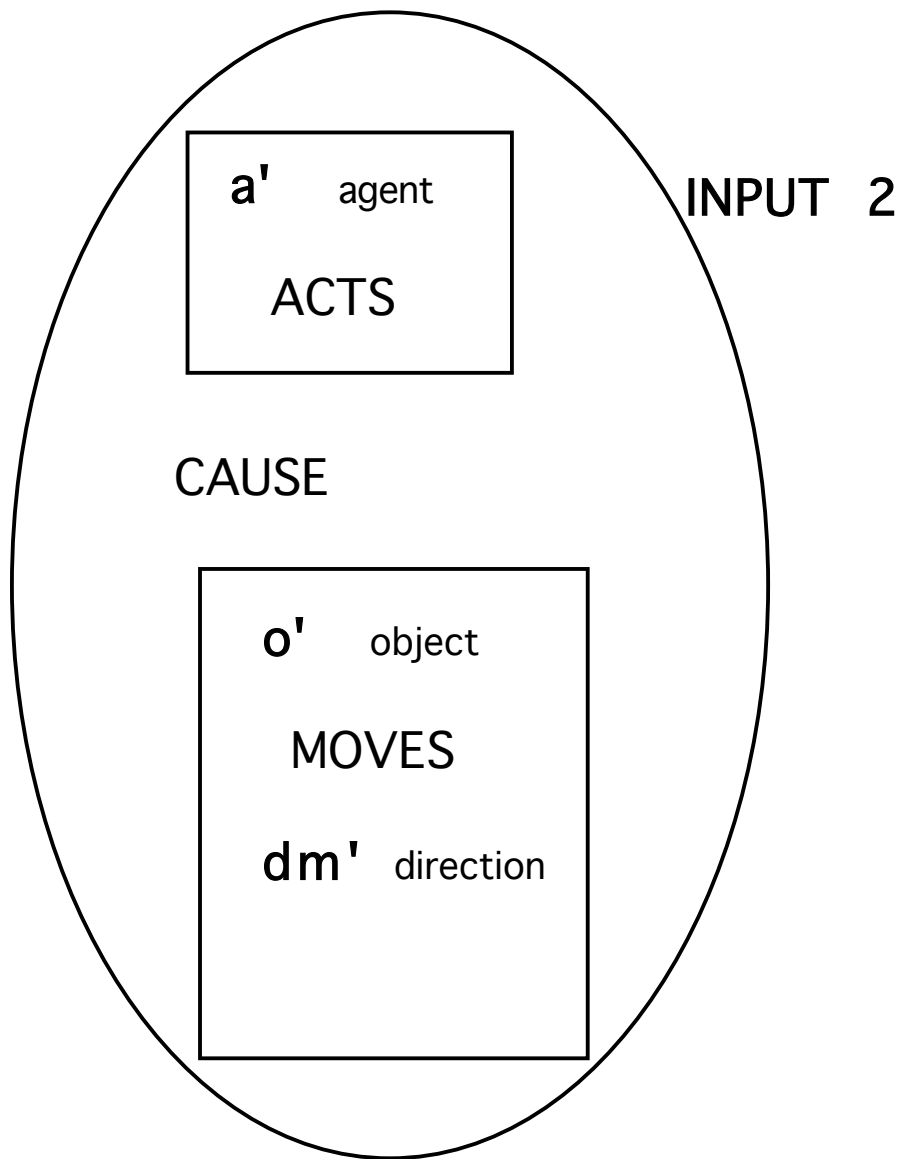
o

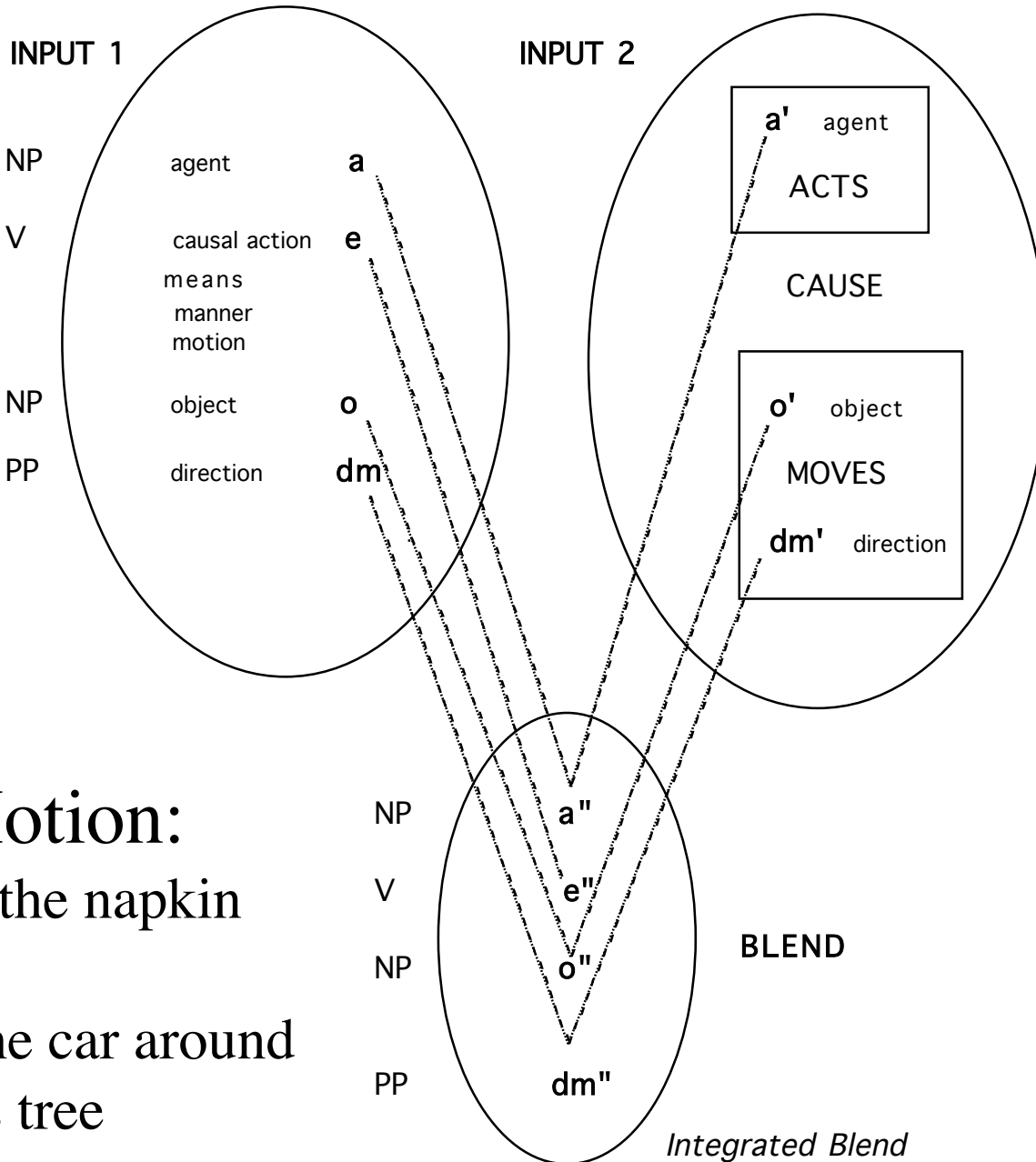
PP

direction

dm

Caused-Motion:



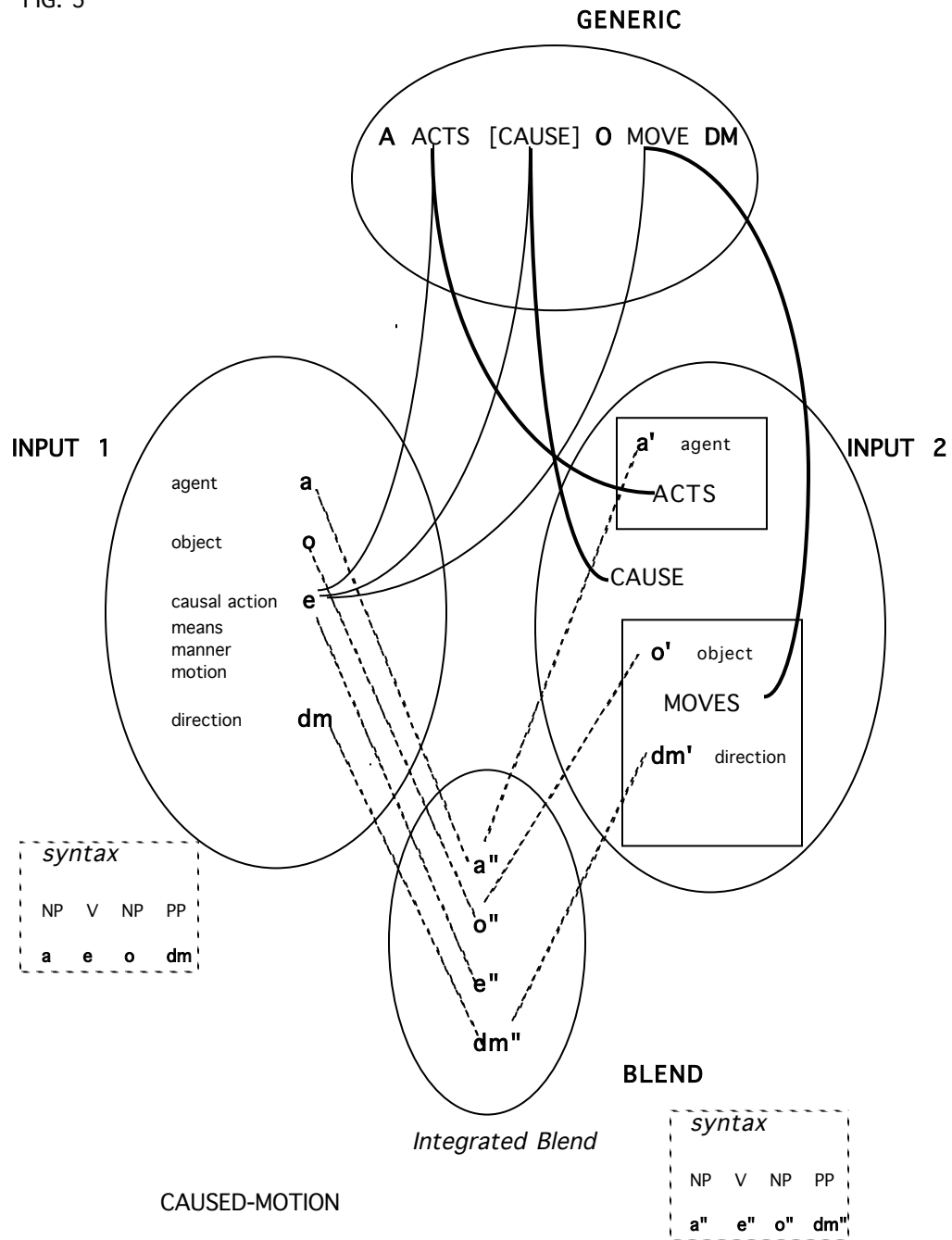


Caused-Motion:

Paul sneezed the napkin
off the table.

Junior sped the car around
the Christmas tree

FIG. 5



Integrated Blend

a" o" e" dm"

CAUSED-MOTION

syntax

NP V NP PP

a e o dm

BLEND

syntax

NP V NP PP

a" e" o" dm"

Caused Motion clausal construction

"I walked him into the room."

"He sneezed the napkin off the table."

"I pointed him toward the door."

"They teased him out of his senses."

"I will talk you through the procedure."

"I read him to sleep."

"They prayed the two boys home."

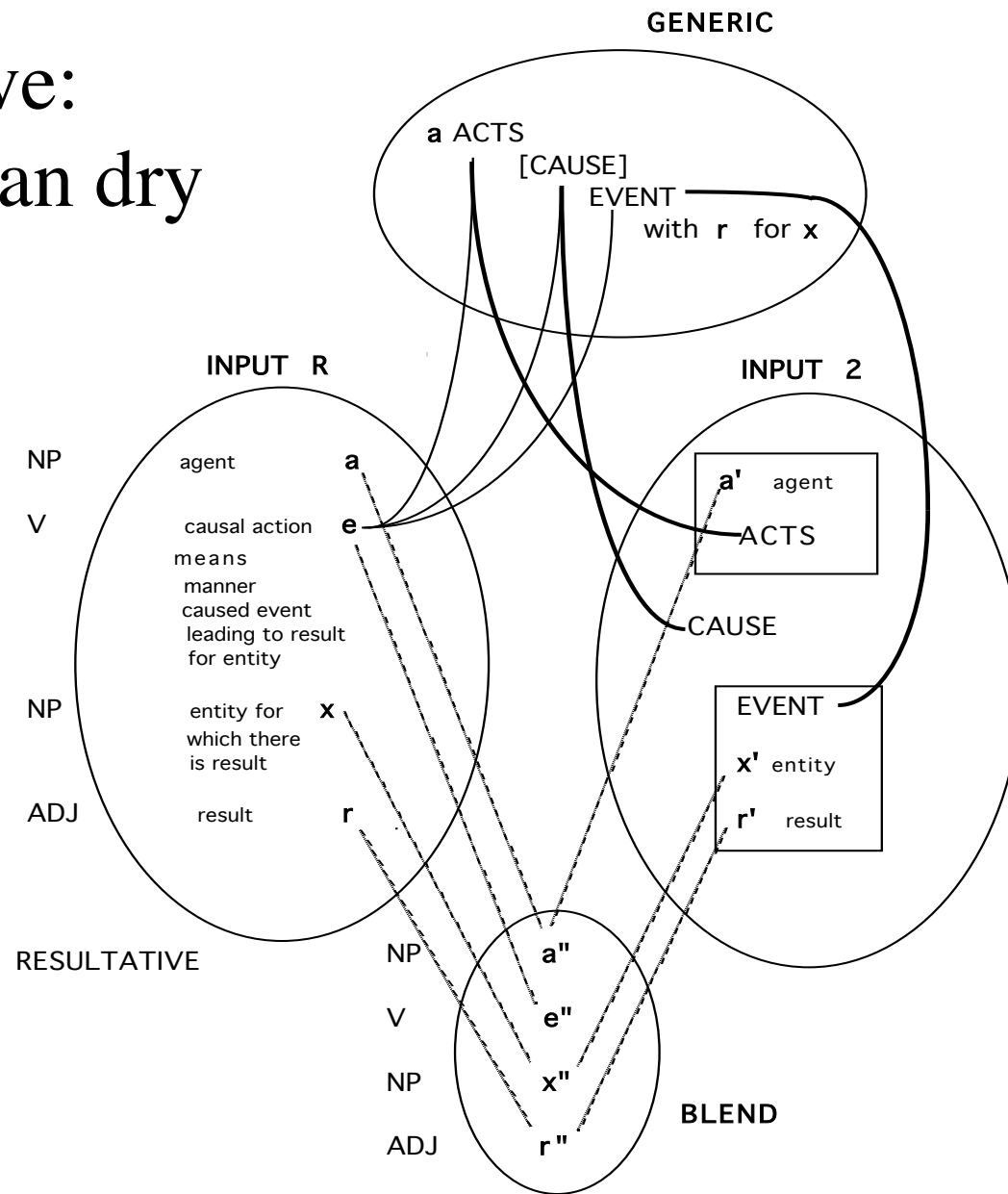
"I muscled the box into place."

"Hunk choked the life out of him."

"He floated the boat to me."

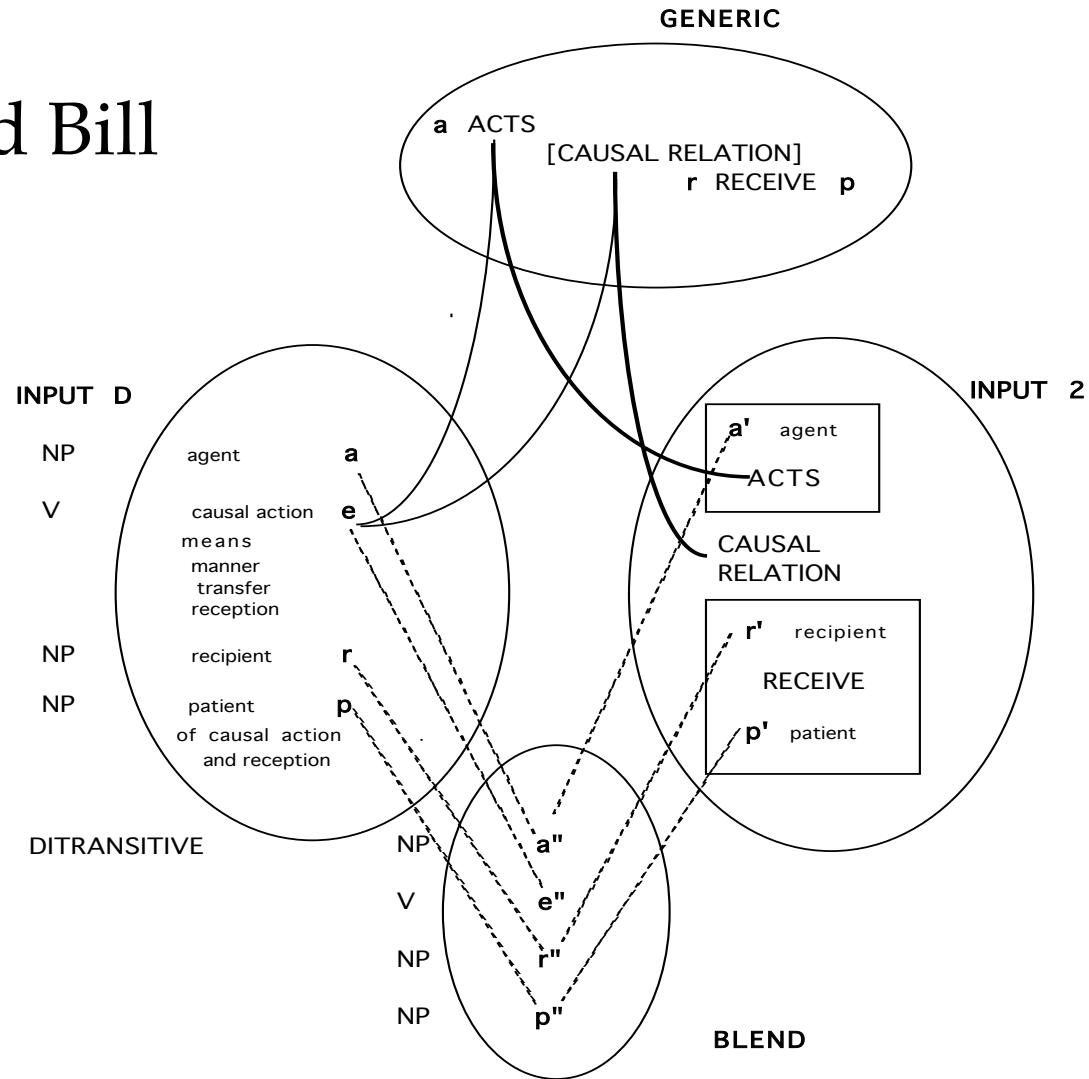
But also: "We blocked him from the door."

Resultative: I boiled the pan dry



Ditransitive:

“Mary poured Bill
some wine”



Ditransitive clausal construction

Paul handed her the book.

Paul made him a house.

She granted him his wish.

She gave him that premise.

She allowed him that privilege.

She won him a prize.

She bequeathed him a farm.

She gave him a headache.

She showed me the view.

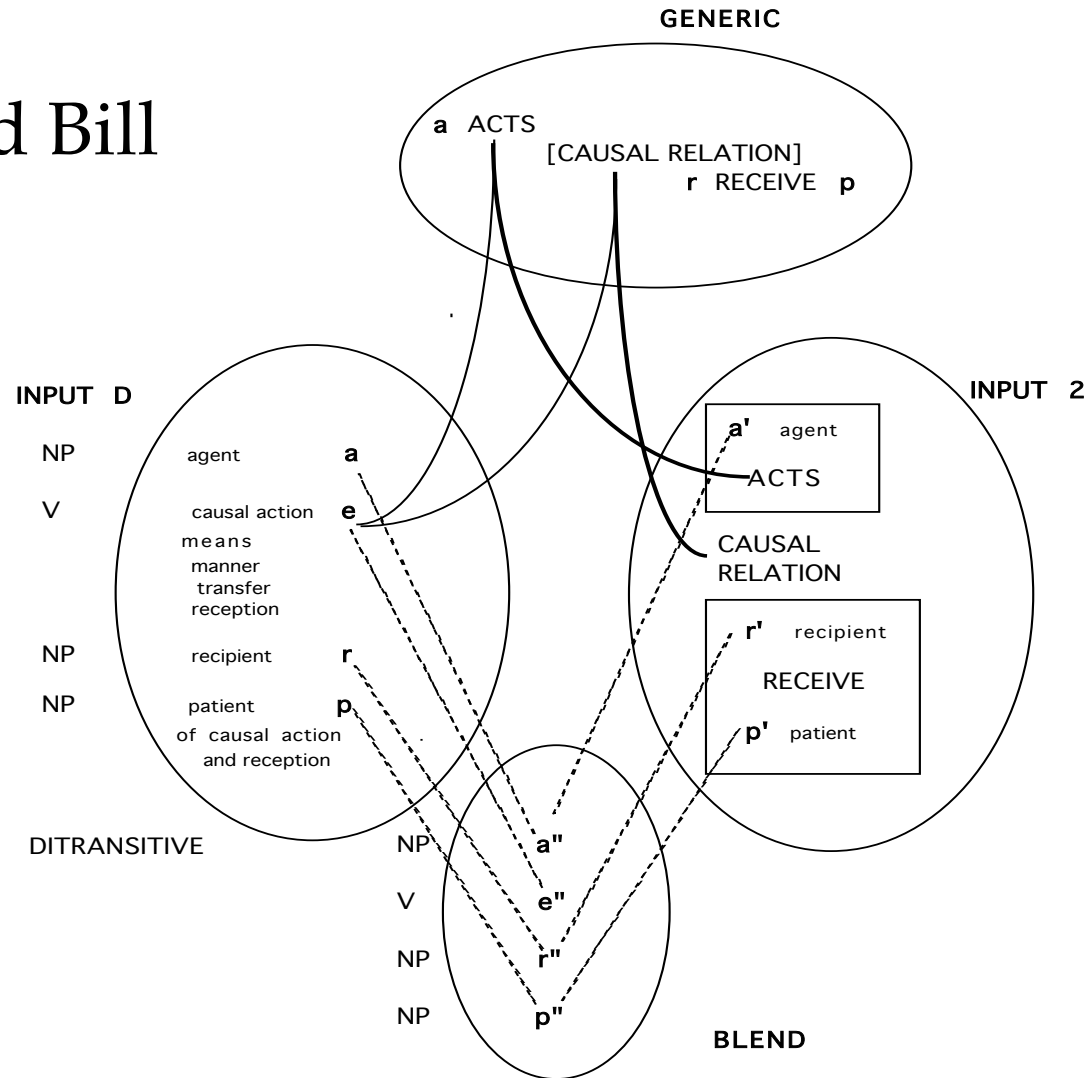
She told me a story.

She denied him the job.

She refused him that courtesy.

Ditransitive:

“Mary poured Bill
some wine”



Finding 1

Thinkers have been fascinated and puzzled since even before the time of *Aesop's Fables* by mental patterns that are commonly classified under labels such as analogy, category extension, metaphor, framing, counterfactuals, and grammatical constructions. It has been assumed that these names refer to separate kinds of things. Typically, these things are considered part of distinct disciplines: counterfactuals in philosophy and logic, metaphor in literature, analogy in psychology, framing in sociology and artificial intelligence, grammatical constructions in linguistics. A remarkable result of CIT is that, at a deeper level, all of these patterns are products of conceptual integration networks. The mental principles of their origin are uniform.

Finding 2

A central feature of integration networks is their ability to compress diffuse conceptual structure into intelligible and manipulable human-scale situations in the blended space. These compressed blends are memorable and can be expanded flexibly to manage their integration networks. Compressions have been studied in great detail. They operate on a set of twenty or so vital conceptual relations, such as Cause-Effect, Analogy and Disanalogy, Time, Space, Change, Identity, Part-Whole, and Representation. Relations can be compressed into a human-scale version of themselves, or into different vital relations.

Finding 3

Conceptual integration networks fall on a complexity gradient. There are some focal positions on this continuum: Simplex networks, Mirror networks, Single-Scope networks, and Double-Scope networks. The blended spaces of simplex networks provide framings, as in "Paul is the father of Sally." Mirror networks have inputs that have the same frame, and their blended spaces also have that frame, often with a slight extension. So, for example, the familiar behavior of talking to oneself is made possible by mirror networks. Single-scope and double-scope networks can work on inputs that have very different frames or even frames with clashes in their central structures. Double-scope networks, as we will see, are the most important for explaining the origin of language. Human beings became cognitively modern when they acquired the capacity to do double-scope integration. Human language, spoken or signed, is a product of that ability.

The central problem of language

Open class words: “food”,
“brown”, “house”

Closed class words: “of,”
“you”

Constructions: Caused Motion,
Ditransitive, Resultative.

The central problem of
language

"My cow is brown"

Resultative clausal construction

Catherine painted the wall white.

She kissed him unconscious.

Last night's meal made me sick.

He hammered it flat.

I boiled the pan dry.

The earthquake shook the building apart.

Roman imperialism made Latin universal.

Resultative clausal construction

The events described here are in completely different domains (Roman politics versus blacksmithing) and have strikingly different time spans (the era in which a language rises versus a few seconds of earthquake), different spatial environments (most of Europe versus the stovetop), different degrees of intentionality (Roman imperialism versus a forgetful cook versus an earthquake), and very different kinds of connection between cause and effect (the hammerblow causes the immediate flatness of the object, but eating the meal one day causes sickness later through a long chain of biological events).

What theory of the origin of language do we propose?

—Double-scope conceptual integration is characteristic of human beings as compared with other species and is indispensable across art, religion, reasoning, science, and the other singular mental feats that are characteristic of human beings.

—The hallmark virtue of advanced blending capacity is its provision of efficient, intelligible, strong compressions across ranges of meaning that are otherwise diffuse and unmanageable. There are many scenes that are immediately apprehensible to human beings: throwing a stone in a direction, breaking open a nut to get the meat, grabbing an object, walking to a visible location, killing an animal, recognizing a mate, distinguishing friend from foe. Double-scope blending gives us the supremely valuable, perhaps species-defining cognitive instrument of anchoring other meanings in a highly compressed blend that is like the immediately apprehensible basic human scenes, often because those scenes are used to help frame the blend.

— The development of blending capacity was gradual and required a long expanse of evolutionary time: basic blending is evident as far back as the evolution of mammals.

—Each step in the development of blending capacity was adaptive. From very simple Simplex blends to very creative Double-Scopes, each step of the capacity would have been adaptive because each step gives increasing cognitive ability to compress, remember, reason, categorize, and analogize.

—There is ample evidence of intermediate stages in the development of blending capacity. Some species, for example, seem able to do only simple Simplex networks. Others seem able to do slightly more unusual Simplex networks.

— There is also ample evidence of intermediate stages in human beings, in the sense that although we can do Double-Scope blending, we can of course still do Simplex blending.

— A special level of capacity for conceptual integration must be achieved before a system of expression with a limited number of combinable forms can cover an open-ended number of situations and framings.

— The indispensable capacity needed for language is the capacity to do Double-Scope blending.

—The development of double-scope blending is not a cataclysmic event but rather an achievement along a continuous scale of blending capacity, and so there is no Cause-Effect Isomorphism in the origin of language: the cause was continuous but the effect was a singularity.

—Language arose as a singularity. It was a new behavior that emerged naturally once the capacity of blending had developed to the critical level of Double-Scope blending.

—Language is like flight: an all-or-nothing behavior. If the species has not reached the stage of Double-Scope blending, it will not develop language at all, since the least aspects of grammar require it. But if it has reached the stage of Double-Scope blending, it can very rapidly develop a full language in cultural time because it has *all* the necessary prerequisites for a full set of grammatical integrations.

— The culture cannot stop at a "simpler" language, for example one that has only the Subject-Verb clausal construction. A grammatical system, to meet the crucial condition of equipotentiality, must be a full set of possible integrations and corresponding forms that can combine to give expressions suitable for any situation. Therefore, language will automatically be multiply double-scope and complex. And there will be no stopping the development of language from achieving that level, since the engine of double-scope blending that produces equipotentiality will be fully in place.

—The story of the origin of language does have room for intermediate stages, in the capacity: human beings still have the capacity to do simple forms of blending. But no intermediate stages will be found in the languages because full grammar precipitates quickly as a singular product of the blending capacity once it reaches the critical stage.

"Quickly" here does not mean instantaneously, but it within cultural rather than evolutionary time.

—The hallmark virtue of language is its ability to use grammatical patterns suitable for basic human scenes, to capture and convey much less tidy meanings. This is done through the massive compression offered by double-scope blending, which can achieve blends that fit the grammatical patterns associated with those basic human scenes.

—Language, in the strong sense, must be equipotential. It must be serviceable for the new situations we encounter. The only way for it to be equipotential is for the human mind to be able to blend those new situations with what we already know to give us intelligible blends with attached grammatical patterns so those existing grammatical patterns can express the new situations.

—To say something new, we do not need to invent new grammar—and a good thing, too! Rather, we need to conceive of a blend that lets existing grammar come into play. Only in this way can an individual with a small, relatively fixed vocabulary of words and basic grammatical patterns cope with an extremely rich and open-ended world.

—If we follow the view of Stephen Mithen, according to which other singular explosions in human capacity and society, such as tool design, art, religion, and scientific knowledge, were the result of "cognitive fluidity," then it is plausible that all these spectacular changes in human performance came about once the continuous improvement of blending capacity reached the critical level of double-scope blending.

Mithen explicitly places the origin of language far before the development of "cognitive fluidity." For him, it is an input to "cognitive fluidity." For us, by contrast, it is the most impressive behavioral product of double-scope blending.

Here are some fascinating individual truths about evolution and the origin of modern human beings that have been widely, if disparately, recognized but that have never been combined into a single coherent story:

- Biological evolution happens gradually.

- Human language appears, in evolutionary terms, very suddenly in recent prehistory.

- Art, science, religion, and tool use also appear very suddenly in recent prehistory.

- Human beings differ strikingly from all other species in having these behavioral singularities, and their performances in these areas are extraordinarily advanced.

- Anatomically modern human beings arose 150,000 years ago.

- But behaviorally modern human beings date from around 50,000 years ago. That is, evidence of advanced modern behavior in tool use, art, and religious practices appears in the archeological record around 50,000 years ago.

- There is no evidence of "simple" languages in other species.

- There is no evidence of "simpler" languages in other human groups.

- Children learn complex languages remarkably easily. But they go through what look like intermediate stages.

None of the proposals we have seen explicitly links all the singularities —language, science, religion, the arts—as deriving from a common cause. But there are other accounts that do see that linking as a priority. For example, Richard Klein, in *The Human Career*, offers the hypothesis that there was a dramatic mutation that produced neurological change about 50,000 years ago, and that this neurological change gave human beings some signal capacity such as language. Once that particular capacity was in place, it led to the development of advanced tool use and the invention of art and perhaps other abilities, and these neurologically advanced human beings spread throughout the world.

Our proposal for the origin of language has ample room for full linkage across the singularities in human performance that arose around 50,000 years ago, but does not require any one of them to have been the cause of the others. On the contrary, there is a deeper, underlying cause, namely the continuous development of blending capacity until it arrived at the critical point of double-scope blending, and all these staggering new performances of human beings fall out of that capacity as products developed in parallel. On our view, these new performances reinforced each other in cultural time. The evolutionary achievement of double-scope blending still needs cultural time in which to bear all its fruit. The visible products of the new cognitive capacity are all social and external—art, religion, language, tool use. There is every reason to think that once the capacity was achieved and the cultural products started to emerge, they reinforced each other. Language assisted social interaction, social interaction assisted the cultural development of language and language assisted the elaboration of tool use, as the tree of culture put forward these exceptional new products. Language and art became part of religion, religion part of art, language part of the technology of tools, all intertwined. Certainly this is the picture we see when we look at human beings today.

We agree with Klein that the singularities are linked, but this does not imply that one of them caused the others. They are all products of the underlying evolution of the capacity for double-scope blending. There is another aspect of Klein's work, however, that is crucial to our account. He places the origin of language near in date to the origin of the other singularities.

Why would a theorist like Mithen, who saw cognitive fluidity as the "big bang of human evolution," not have considered language as part of the constellation of singularities like art, science, and religion that resulted from that big bang? The answer is simple: he assumes that language falls out of a combination of big brains and modern vocal apparatus. Mithen writes, "During the last few years the argument that both archaic *H. sapiens* and Neanderthals had the brain capacity, neural structure and vocal apparatus for an advanced form of vocalization, that should be called language, is compelling." This would place the origin of language in the range of 100,000 to 400,000 years ago, and perhaps even as much as 780,000 years ago. Therefore, language must have arisen, on his view, at least 50,000 years before the explosion of art, science, and religion in the human record.

Yet Mithen himself takes the view that human beings about 50,000 years ago developed striking new mental abilities that did not require a change in brain size or in anatomy. We think that is exactly right, but that language was part of the suite of products that flowed from that evolution. This unifying hypothesis receives strong support from recent archeological and genetic studies that were not available to Mithen.

Klein provides archeological evidence that there are two distinct types of modern human beings—anatomically modern and behaviorally modern. Anatomically modern humans have our anatomy, but not our characteristic behaviors. Behaviorally modern humans have both. The anatomically modern human beings, dating from about 200,000 years ago, at some point cohabited with more archaic human beings, like Neanderthals. The behaviorally modern human beings originated much more recently, say about 50,000 years ago, and dispersed eastward from Africa, ultimately supplanting all other human beings.

Klein's view receives even stronger support from two genetics studies, one by Silvana Santachiara-Benerecetti, the other by Russell Thomson, Jonathan Pritchard, Peidong Shen, Peter Oefner, and Marcus Feldman. Santachiara-Benerecetti's work on mitochondrial DNA leads her to the conclusion that behaviorally modern human beings arose about 50,000 years ago out of Africa and migrated eastward into Asia, not northward into Europe as had been previously found for the more ancient anatomically modern human beings. The study by Russell Thomson and his colleagues looked at Y chromosomes in people around the world today and computed an expected time on the order of 50,000 years to our most recent common ancestor. That dating falls within a large range of uncertainty, but in any event moves the origin of behaviorally modern human beings closer to us by many tens of thousands of years.

Luigi Luca Cavalli-Sforza takes the final step and locates language as an invention of behaviorally modern human beings. He places it alongside the invention of boats and rafts and Aurignacian technology, which is to say, beads and pendants and other items of personal decoration used for social and ritual purposes. While Cavalli-Sforza brings the origin of language forward to about 50,000 years ago, other researchers would push the date of the invention of craft technologies like making string and weaving back by several tens of thousand years. James M. Adavaso, an anthropologist specializing in textiles, estimates that weaving and cord-making probably date from 40,000 BC, "at a minimum," and possibly much further.

These new findings converge to suggest the rapid cultural invention of a coordinated suite of modern human performances, dating from the same epoch, perhaps about 50,000 years ago. We have argued that all of these modern human performances, which appear as singularities in human evolution, are the common consequence of the human mind's reaching a critical level of blending capacity, double-scope conceptual integration.

Writing and Reading

Writing hardly seems the same kind of thing as a watch, a coin, or a cathedral. Yet when we look at it, we see physical marks on stone or paper or a computer screen, and these marks are circulated through the community. By themselves, these marks are meaningless: if we could send a sheet of writing back ten thousand years to a tribe of cognitively modern human beings, they would not have the slightest idea what to do with it, although the sheet would be a marvel. But we have elaborate conceptual and linguistic mental systems that can use these marks in culturally-supported ways. Just as we look at the watch to see what time it is, we look at a sentence in a letter to see what someone is saying to us.

Writing and Reading

Suppose a woman is reading a letter from her fiancé, a soldier at the front. What is she doing? From one perspective, she is looking at and distinguishing marks on a sheet of paper. But a horse or a pig can probably distinguish marks on a sheet of paper, and she is clearly doing something altogether different from the horse or the pig. There is one input in which the woman is alone, looking at a material object. There is another with the fiancé and his general capacity to speak to her. In the blend, her fiancé actually is speaking to her. The projections are selective and imaginative. It is emergent structure that they cannot answer each other in all the usual conversational ways, and that there is no audible sound from the fiancé.

Writing and Reading

The fact that the writing consists of words comes from the space of speaking. The specificity of those words/ marks comes from the space with the specific marks on the paper, combined with a general, culturally evolved cognitive mapping connecting equivalence classes of sounds to equivalence classes of marks—that is, connecting the mark "boy" to the sound *boy* (or, more precisely, a category of marks like boy, **boy**, *boy*, boy, Boy, BOY, boy . . . to a category of sounds that consists of all the ways of pronouncing the word *boy* —with high or low pitch, with a British or Australian accent, in a whisper, . . .).

Writing and Reading

A proficient reader ends up with a general blending template for writing and reading. In this template, one input has someone talking and the other has some medium with marks, and in the blend, the marks and the speech are fused in impressive ways. This blending template does not say what is being said in the blend. For that, we need a particular material anchor in the form of a particular letter, a particular book, a particular inscription. The emergent integrated activities of "expressing oneself through writing" and "understanding others through reading" are strikingly different from speech in nearly all aspects. But the blend and the speech input are connected, and we know therefore how to interpret the blend.

Writing and Reading

The writing and reading blend is of immense cultural importance to us. It cannot exist without the material anchors of distinctive marks on material substances. But the use of these material anchors depends on a very powerful prior conceptual blend that compresses the infinity of marks (like boy, **boy**, *boy*, boy, Boy, BOY, boy . . .) into a single entity, the written word "boy," and that entity itself is construed as identical to another compressed infinity, the spoken word "boy."

Writing and Reading

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Speech

Consider now the scene in which the woman is actually listening to the speech of her fiancé. He has returned unscathed, and they are having coffee in the kitchen. From one perspective, what is happening is that longitudinal waves in the air are striking her ear drum, and she is aware of this. But from the same perspective, a horse or a pig would be doing just the same thing, and she is clearly doing something they are not. For her, the longitudinal waves give rise to "sounds" that are like physical objects. The fact that we are able to categorize sounds in such a way that two sounds count as the same for the purpose of communication accounts for the permanence that gives sounds the status of material anchors. She knows a complex mapping that connects particular equivalence classes of sounds to particular linguistic structures like words and clauses that are publicly shared and mentally represented.

Sign Language

Scott Liddell has explicitly studied blended spaces in sign language in "Grounded blends, gestures, and conceptual shifts" (1998). Liddell shows that mental representations of one's immediate surroundings constitute a special type of mental space, what he calls a "grounded mental space." Obviously, the immediate physical surroundings are the material anchor for that mental space. Elements in this grounded mental space have corresponding physical locations in the immediate surroundings that can be pointed to as part of communication. Sign languages use blending and pointing in interesting ways to carry out complex anaphoric processes.

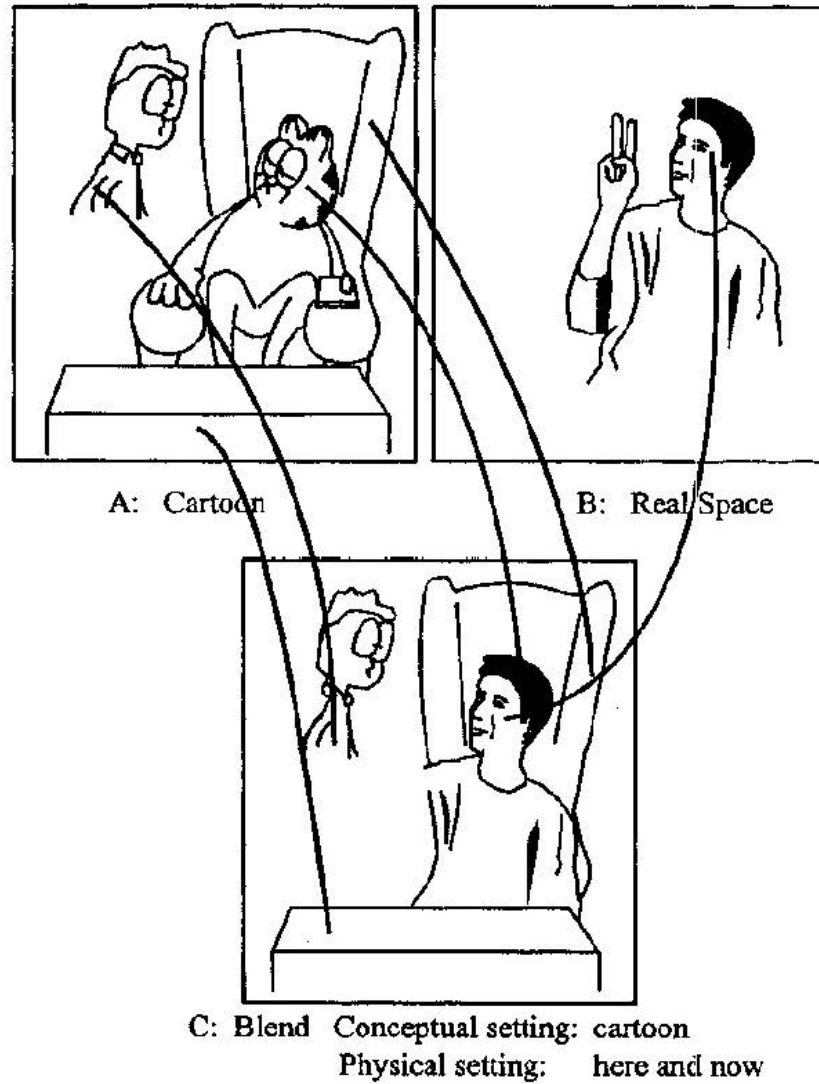


Figure 4. A blend with signer as Garfield

Cite: Scott Liddell

Sign Language

Liddell presents an analysis of a revealing case:
“[A] native speaker of American Sign Language is narrating, describing an interaction between the cartoon character Garfield and his owner in which Garfield is looking up at his owner. This immediately follows a section of the narrative in which the owner has just told Garfield that he has removed the batteries from the remote control for the television. The signer produces the two sign clause CAT LOOK-AT to describe Garfield's initial response to the owner. The subject of the clause is the sign CAT. The predicate LOOK-AT is illustrated in Figure 4, Space B.”

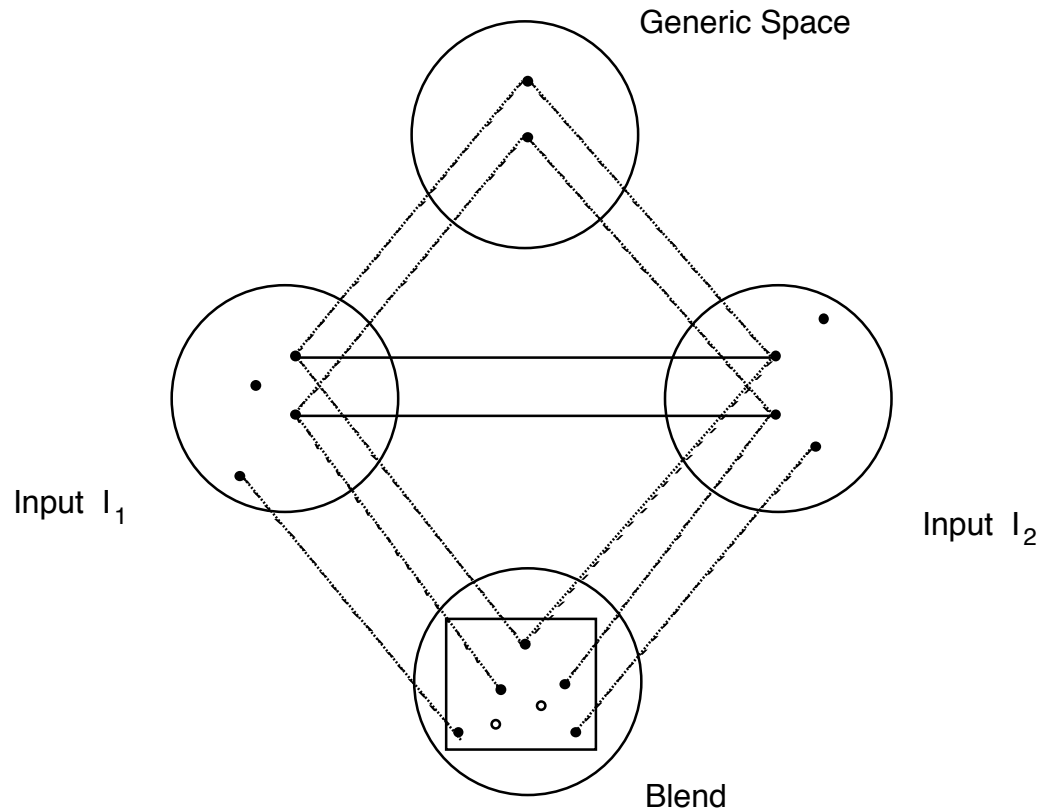
Sign Language

“Within the blend Garfield's owner is now standing to the right of the signer-as-Garfield and the signer looks up to the right in order to show that the blended character is making eye contact with the owner. This is no longer Real Space, because Real Space is a mental representation of only one's immediate physical environment. Here the signer's head position and eye gaze are to be interpreted as Garfield's head position and eye gaze in the blend. That is, the signer's head and eye gaze provide a demonstration of what Garfield did. So the signer has become Garfield, at least partially, since his head and eye gaze are conceived of as Garfield's. In Figure 4 lines connect Garfield in A and the signer in B to the blended Garfield in C.”

Sign Language

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Pragmatics: A style of writing



Madame de Chevreuse had sparkling intelligence, ambition, and beauty in plenty; she was flirtatious, lively, bold, enterprising; she used all her charms to push her projects to success, and she almost always brought disaster to those she encountered on her way.

Mme. de Chevreuse avait beaucoup d'esprit, d'ambition et de beauté; elle était galante, vive, hardie, entreprenante; elle se servait de tous ses charmes pour réussir dans ses desseins, et elle a presque toujours porté malheur aux personnes qu'elle y a engagées.

—La Rochefoucauld, *Mémoires*

That praises are without reason lavished on the dead, and that the honours due only to excellence are paid to antiquity, is a complaint likely to be always continued by those who, being able to add nothing to truth, hope for eminence from the heresies of paradox; or those, who, being forced by disappointment upon consolatory expedients, are willing to hope from posterity what the present age refuses, and flatter themselves that the regard which is yet denied by envy, will be at last bestowed by time.

—Samuel Johnson, “Preface to Shakespeare”

While I've indicated to you previously that we may well have, probably do have, enough monetary stimulus in the system to create that [economic recovery], I'm not sure that we will not need some insurance or to revisit this issue, and all I can say to you is that we're all looking at the same set of data, the same economy, the same sense of confidence which pervades it. We're all making our judgments with respect to how that is evolving with respect to economic activity and where the risks of various different actions are. And there will be differences inevitably.

—Alan Greenspan, chairman of the Federal Reserve Board, responding to senators at a Congressional hearing, (March 1992)

Classic Style

The Model is One Person Speaking to Another

Truth Can Be Known

Truth is Not Contingent

Truth is Pure

The Motive is Truth

Prose is a Window

Classic Prose is Perfect Performance

Every Word Counts

Clarity Everywhere is Not Accuracy Everywhere

Prose is Efficient, but not Rushed

The Talk is Energetic but not Anxious

Classic Style

The Listener Is Competent

The Speaker is Authentic

The Speaker is Sufficient

The Speaker is Competent

The Speaker Does All the Work Invisibly

The Thought Can Stand Alone

Abstractions Can Be Clear and Exact

Thought Precedes Speech

The Language is Sufficient

Classic Thought and Classic Language Match

"Northern Shrike"

(*Lanius excubitor*)

Unusual among songbirds, shrikes prey on small birds and rodents, catching them with the bill and sometimes impaling them on thorns or barbed wire for storage. Like other northern birds that depend on rodent populations, the Northern Shrike's movements are cyclical, becoming more abundant in the South when northern rodent populations are low. At times they hunt from an open perch, where they sit motionless until prey appears; at other times they hover in the air ready to pounce on anything that moves.

—John Bull and John Farrand, Jr., *The Audubon Society Field Guide to North American Birds, Eastern Region*

The self cannot be escaped, but it can be,
with ingenuity and hard work,
distracted.

—Donald Barthelme, "Daumier"

Lavinia Langdon, the woman who was to become my mother-in-law, instructed me to address her as Vinnie at our first meeting, which took place in her flat in Swan Court, Chelsea Manor Street, on an unnaturally hot spring day in late April. I remember being dazzled by the many cut glass mirrors and decanters in her tiny over-furnished sitting-room, but not too dazzled to notice a fine bloom of dust. Vinnie herself had something of the same glitter and dustiness. She was a small, very thin woman with a blatantly made-up face; lustreless dark curls were confined under one of those little spotted veils which were so fashionable in the 50s, and lipstick seeped from her pursed mouth to the deep, bitterly indented lines at the corners. The eyes were fine, dark and haunted, set in a landscape of blue shadow and ornamented with quill-like lashes. She was wearing a pink tweed suit which looked as if it had been made for a child; even so it seemed too big for her, but the effect was deliberate, for it showed off her slim and astonishingly girlish legs, of which she was obviously proud, for she habitually crossed and uncrossed them, and made as if to pull down the skirt with a freckled hand loaded with rings.

—Anita Brookner, *Brief Lives* (1990).

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Mark Turner

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Department of Cognitive Science



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Department of Cognitive Science



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Tsinghua University

Thank you

Foreign Language Teaching and Research Press

Thank you

Hu Ya'nan

Wu Shan

Li Lingmin

Ma Sai

Wang Fan

Xiong Liqin

Yang Jie

Yin Shuying

Yuan Wenjuan

Zheng Lingyan

Thank you

Professor Li Fuyin
“Thomas”

谢谢

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

Grammar

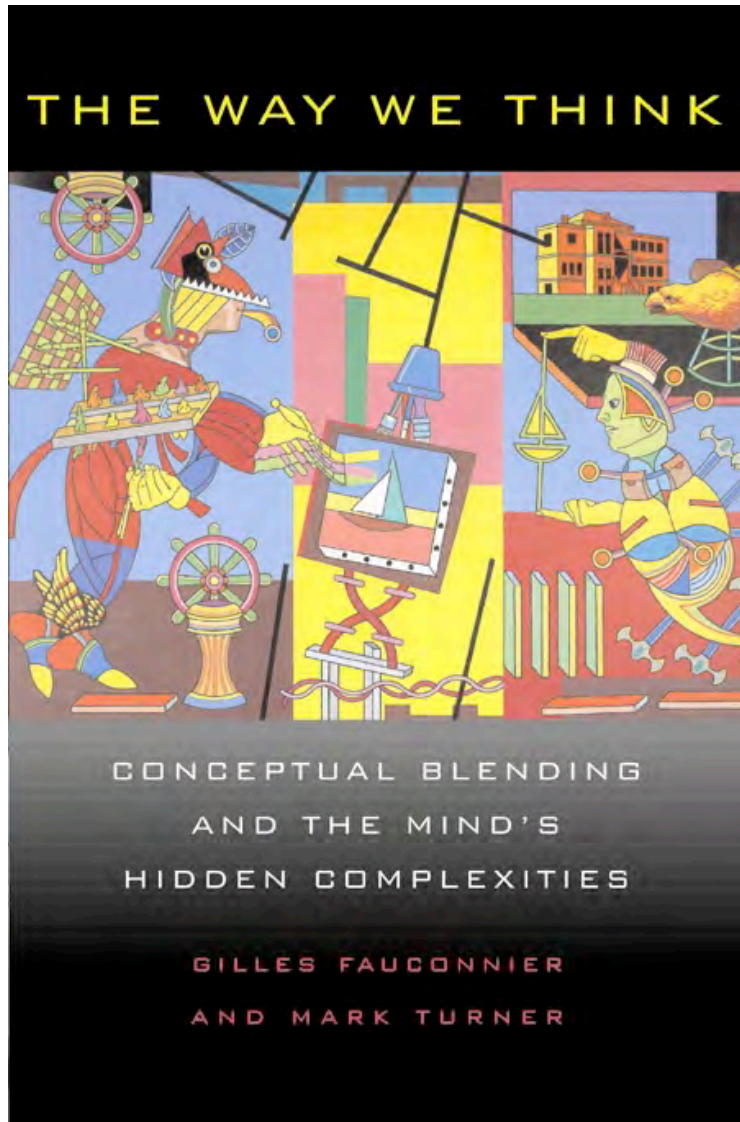
Language as a system of prompts for integration

One way of thinking of language is as a system of prompts for integration. Since the conceptual structures to be integrated are many, each with ranges of words attached to them, an expression that prompts for their appropriate integration has to combine words, and language has to have forms to make these combinations possible. Obvious examples are predication ("This beach is safe") and compounding ("likely story," "possible solution," "eligible bachelor," "fake gun").

Language as a relational system
of form-meaning pairs
(constructions) that themselves
integrate for the purpose of
prompting for the construction of
conceptual integration networks

Language as a Complex Dynamic System

Language as a Complex Adaptive System



*The Way We Think:
Conceptual Blending and
the Mind's Hidden
Complexities*

Gilles Fauconnier & Mark
Turner, Basic Books, 2002

blending.stanford.edu

Review of *The Way We Think*

Li Fuyin. 2006. *Contemporary Linguistics*. [Chinese]

《当代语言学》第8卷2006年第2期174 - 179页, 北京

《我们思考的方式: 概念合成及人类心智隐藏的复杂性》(*The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*, 简称《思考方式》)

2002年由Basic Books出版

Complex Grammatical Structures

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Noun-Phrase of / Y of

- A “Y of” expression prompts us to perform the following operations:
- Call up an input space for the relational frame containing y (the element named by Y).
 - Construct a blended space.
 - Project the element y to create an element y' in the blend.
 - Provide for a w in the input space that will bear an appropriate relationship to y .
 - Project that w to create an element w' in the blend.
 - Project the y - w relationship onto y' - w' in the blended space.
 - Provide open-ended connectors from y' and w' in the blend.
We expect these connectors to make connections at some point.
 - Expect the open-ended connector from w' in the blend to connect to something picked out by the noun phrase that will follow “of.”

Noun-Phrase of / Y of

Paul is the father of Sally.

Necessity is the mother of invention.

Tsinghua University is the MIT of China.

This is the top of the building.

Every minute now should be the Father of some Strategem.

(Shakespeare)

Zeus is the father of Athena.

Joseph is the father of Jesus.

I'm your father for today. (I'm the father of Sally for today.)

You are my long-lost daughter.

He was the Einstein of the fifth century B.C.

The adjective is the banana peel of the parts of speech.

Valet of the secretary of the president.

The wife of the secretary of the president is the most important
position in the government.

Fear is the father of violence.

Language is the fossil poetry of the soul.

Noun-Phrase of / Y of

Las Vegas is the American Monte Carlo.

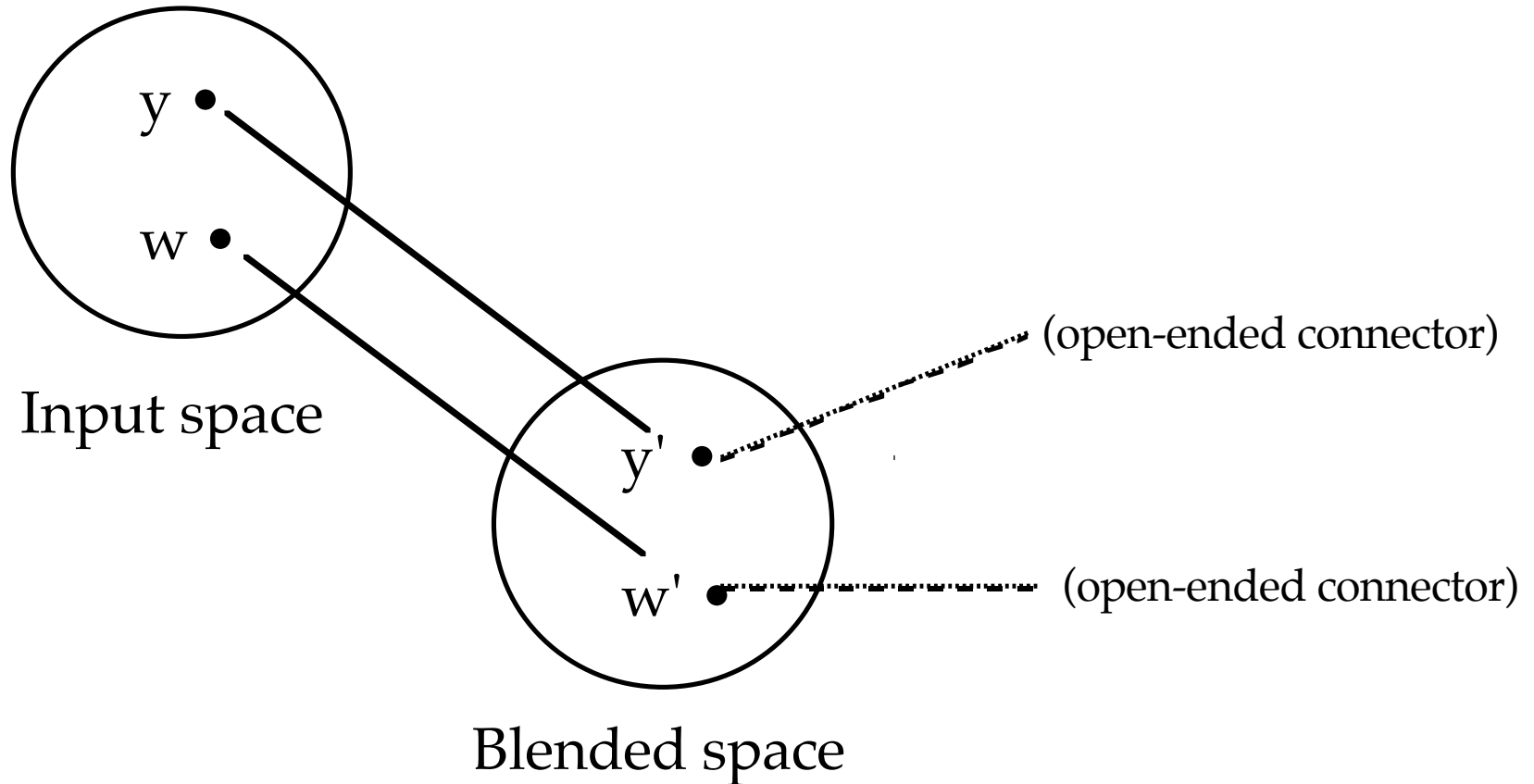
Social movements are at once the symptoms and the instruments of progress.

As poetry is the harmony of words, so conversation is the harmony of minds.

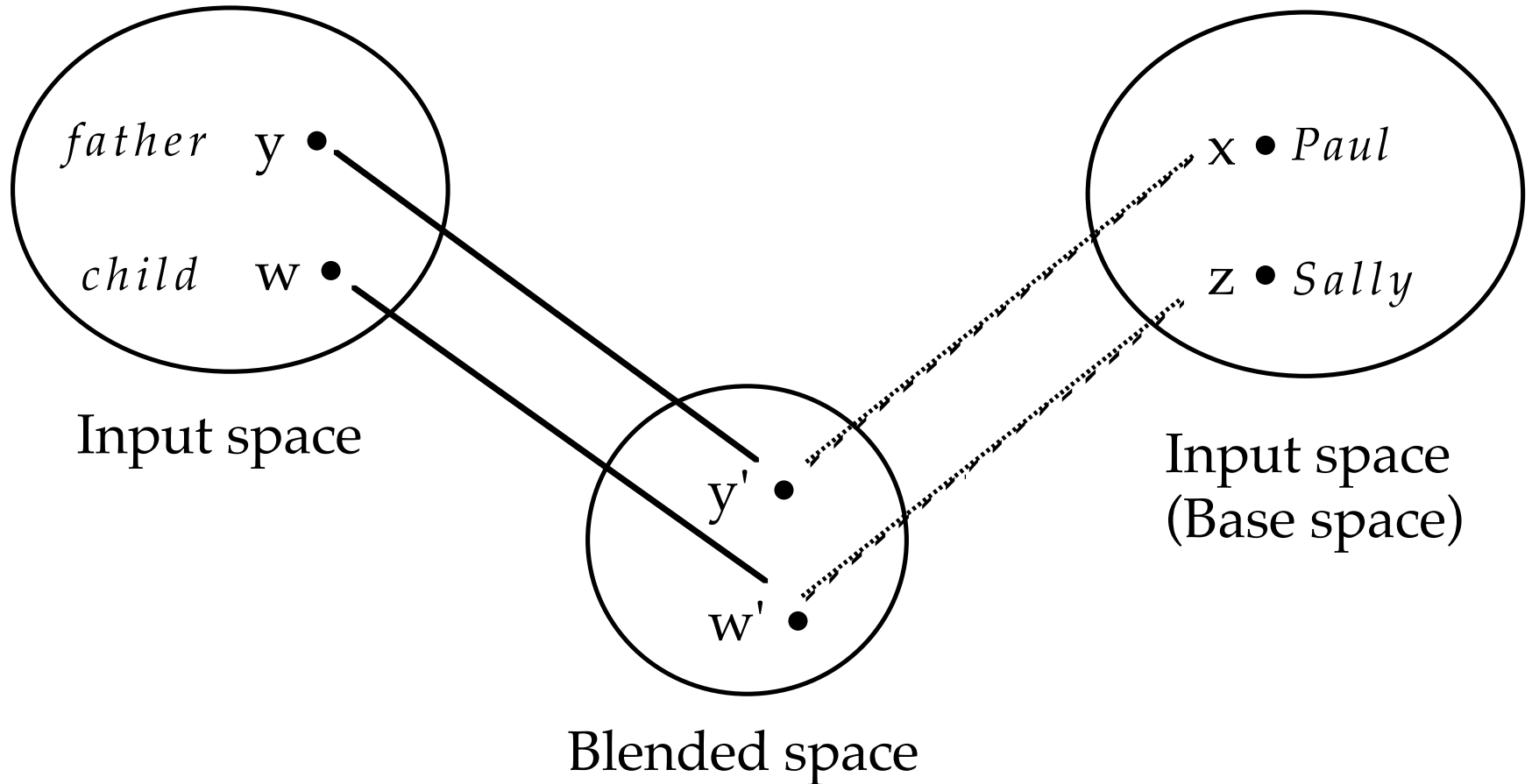
Charles Fillmore gives the example: “One needn’t throw out the baby of personal morality with the bathwater of traditional religion.”

Counterparts need not be metaphoric: “the nation of England,” “the island of Kopipi,” “the stigma of cowardice,” “the feature of decompositionality,” “the condition of despair.”

The Y-of Network



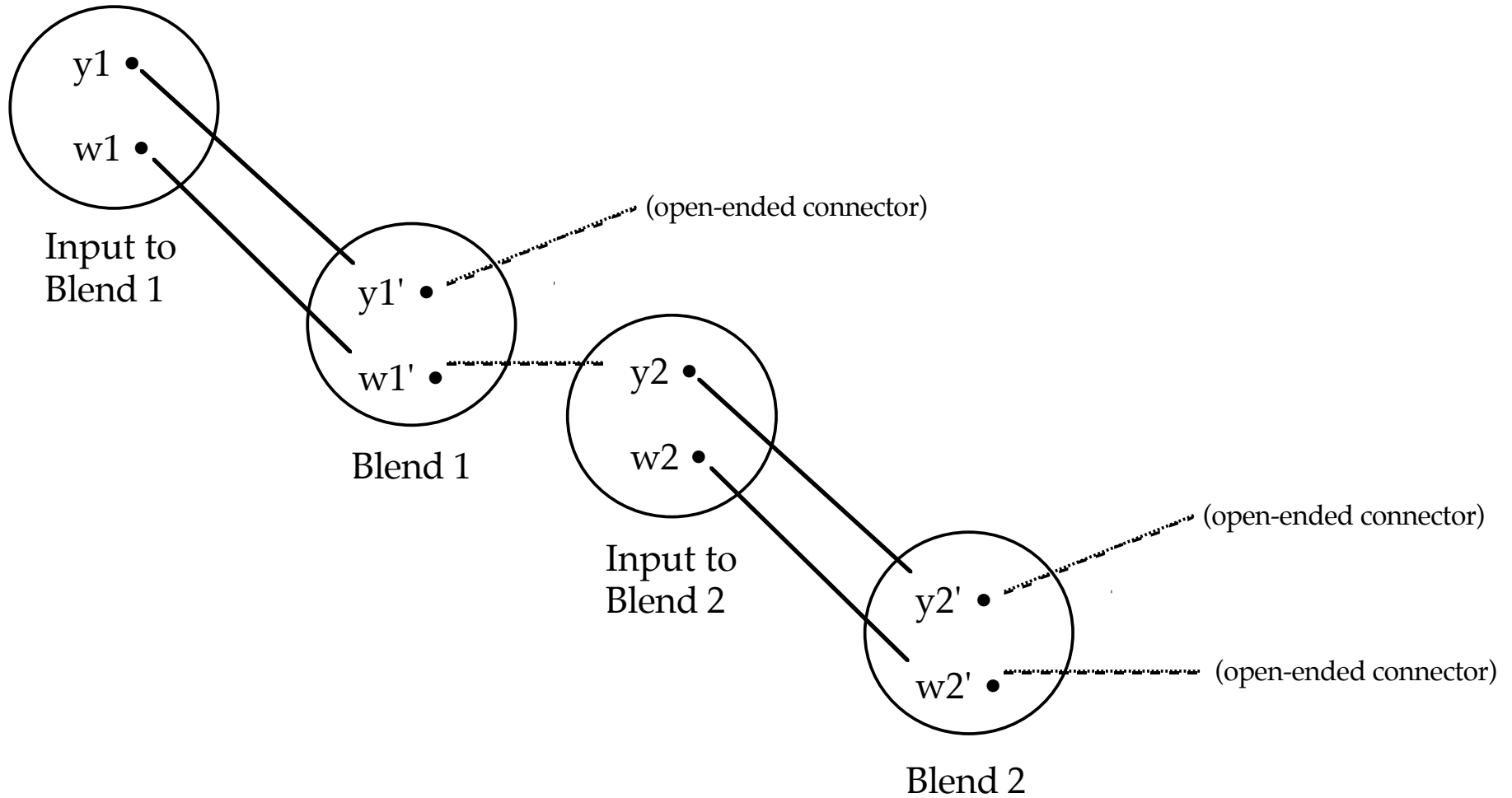
The XYZ Network



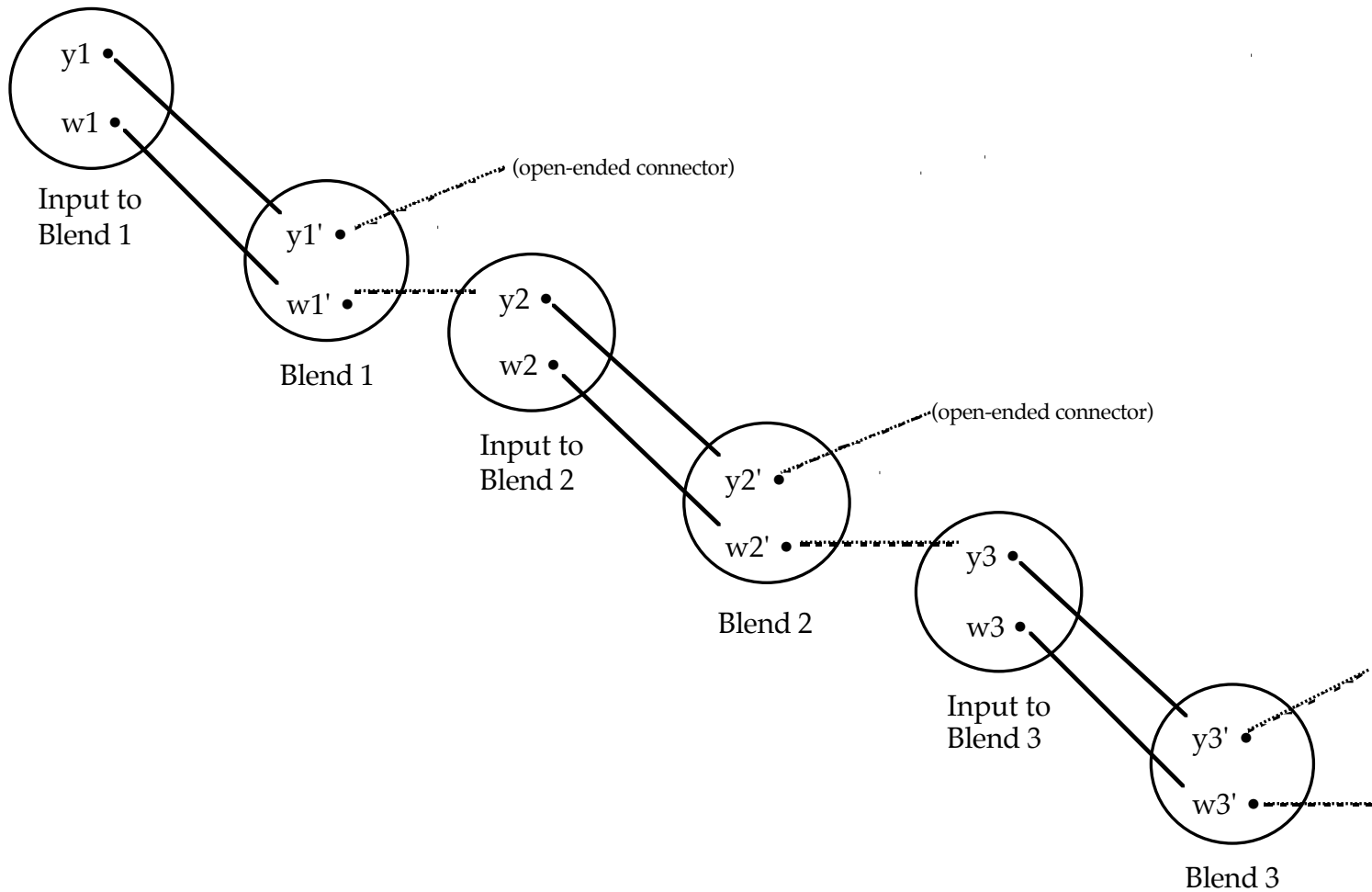
Composition

Y expressions can be composed. That is, what follows the "of" in the first Y expression can be another Y expression, for as long as we like: "The doctor of the sister of the boss of Hieronymous Bosch." Generally, "The y1 of the y2 of the y3 of the y4 of . . ." We saw above the mapping operations called for by a Y expression. Because they have open-ended connectors, these operations can be repeated, so that an open-ended connector of one Y Network attaches to another Y Network. Repeating the expression just asks us to repeat the mapping operations.

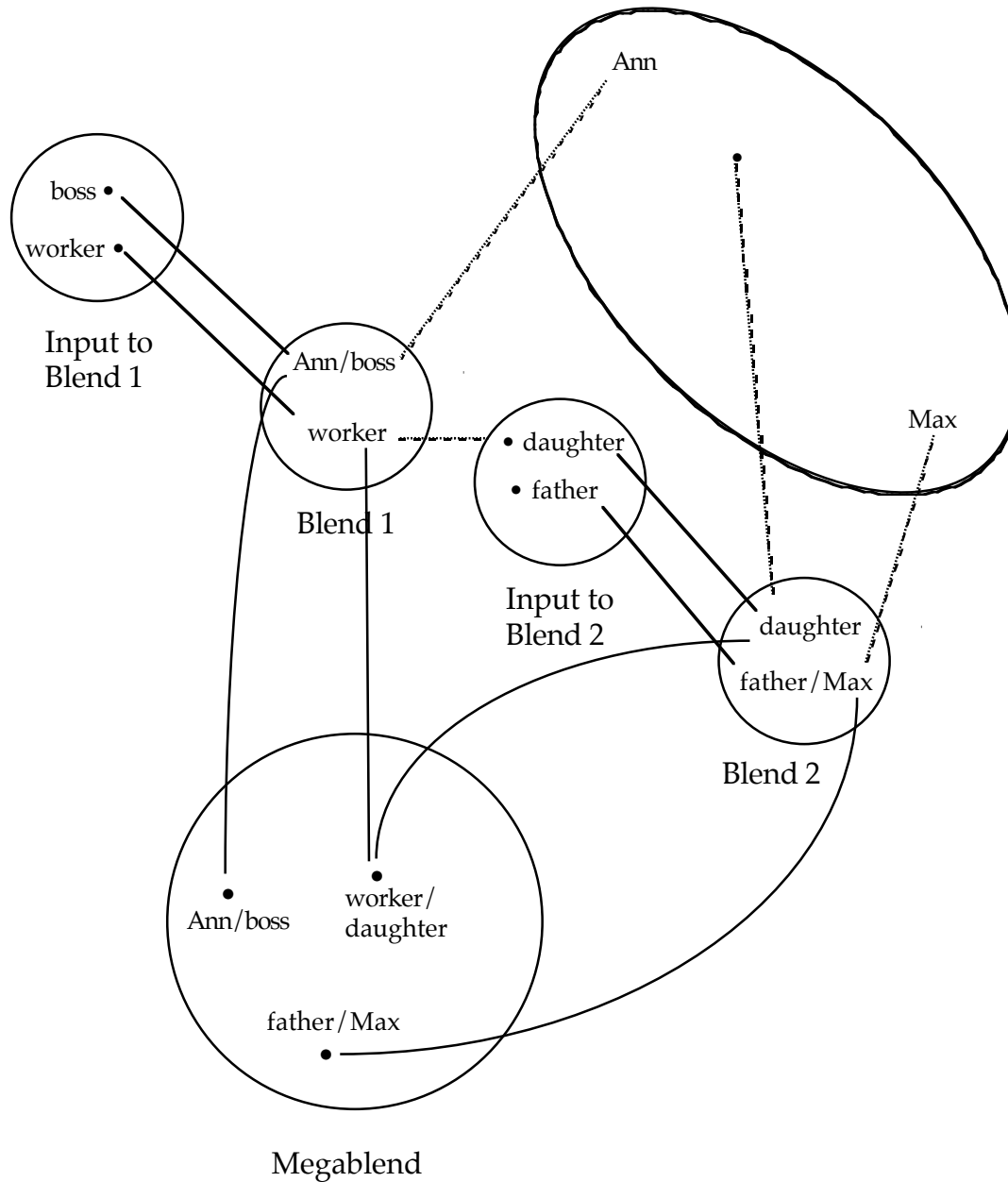
The Y-of Squared Network



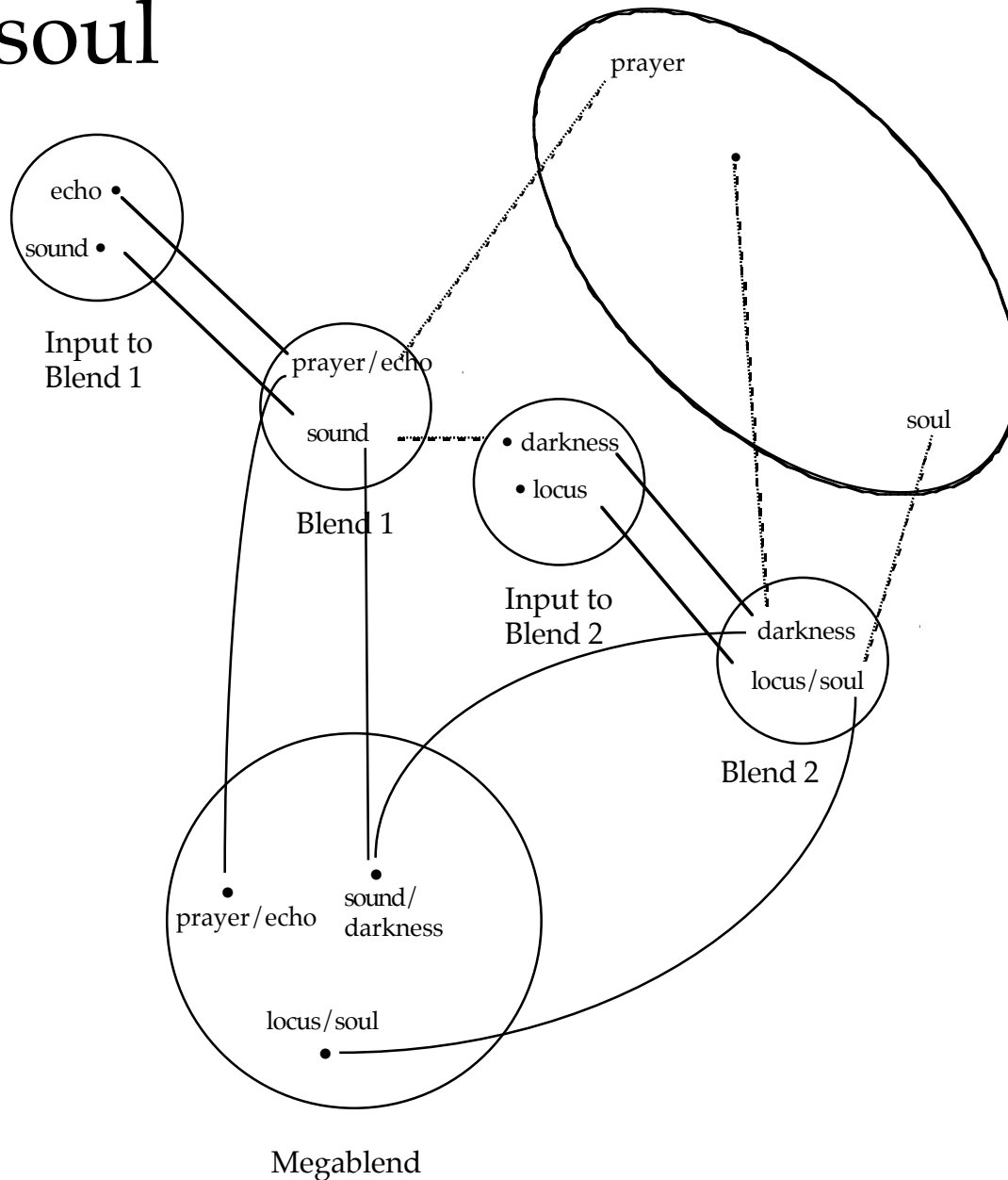
The Y-of Cubed Network



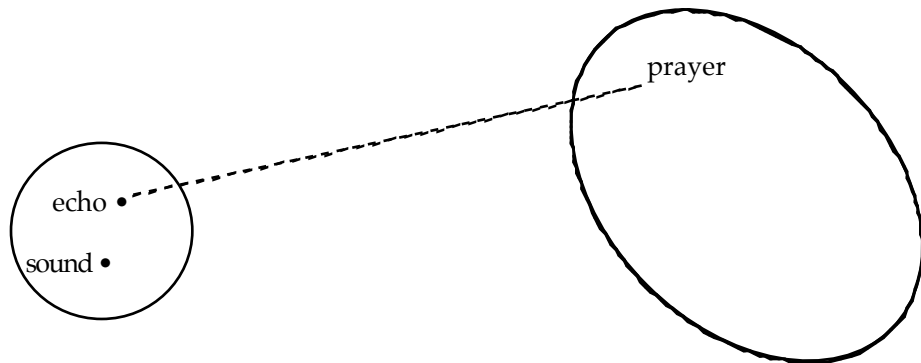
Ann is the boss of the daughter of Max

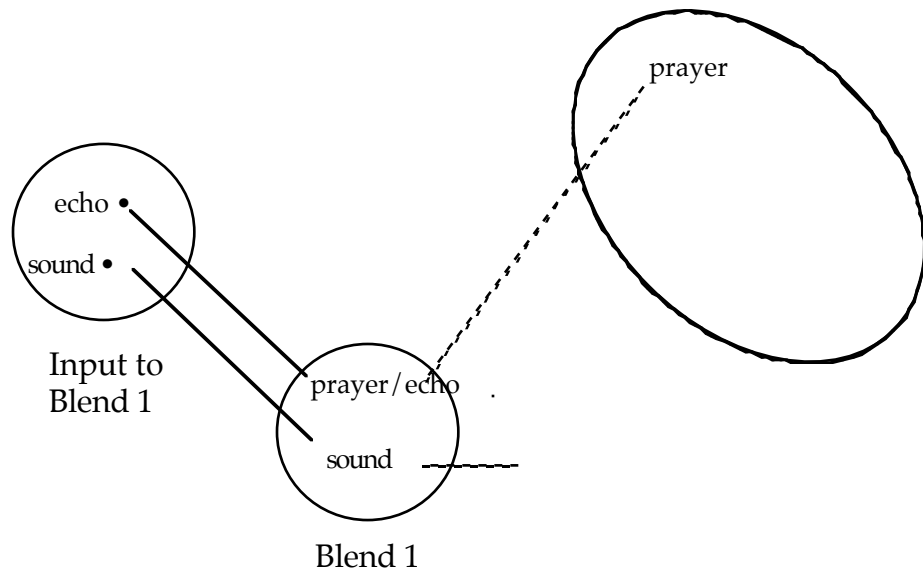


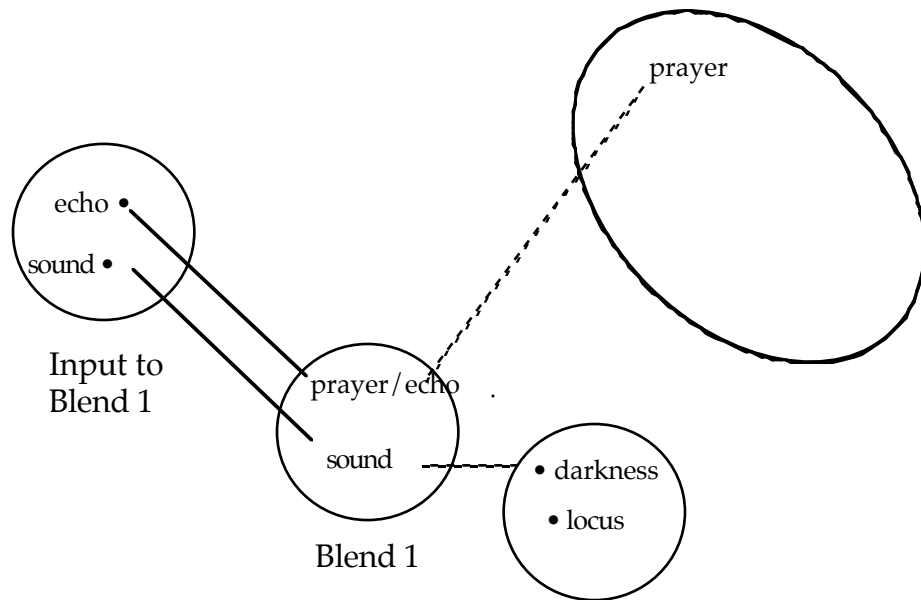
Prayer is the echo of the darkness of the soul

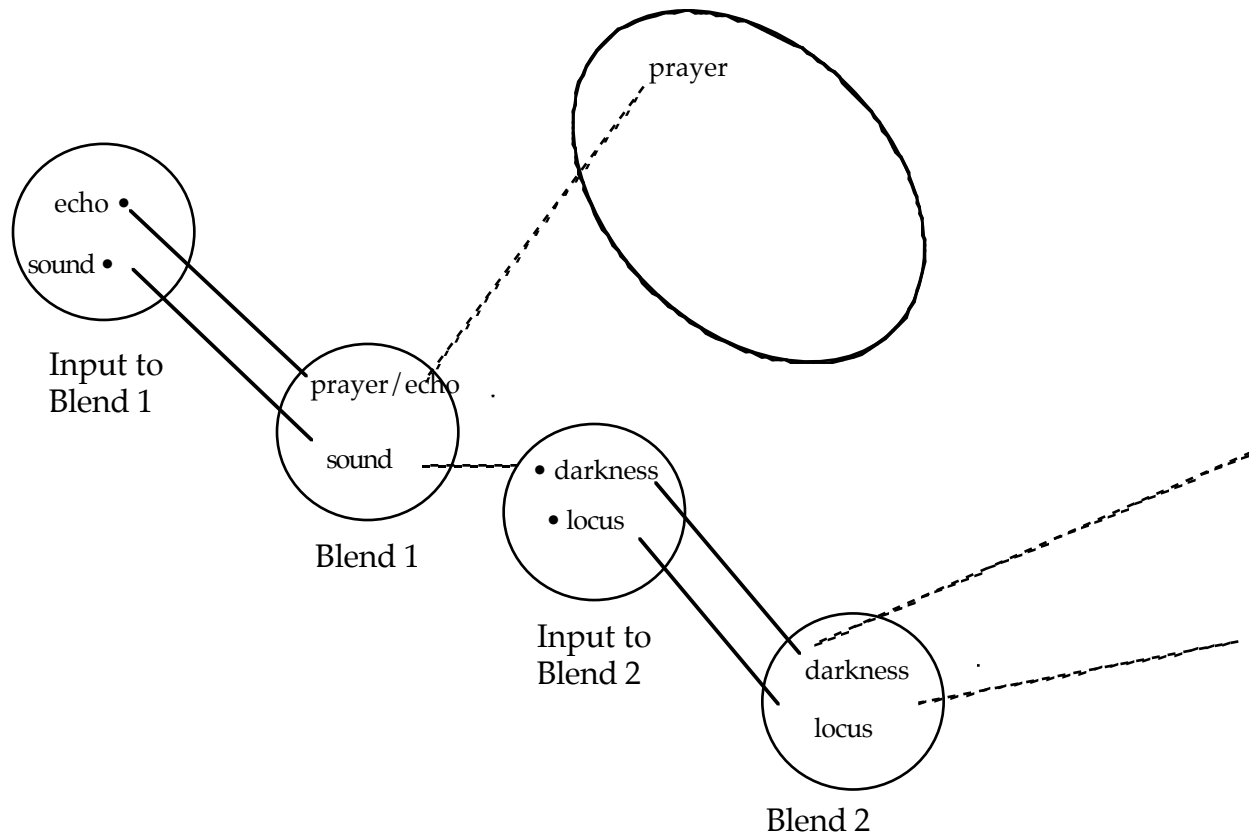


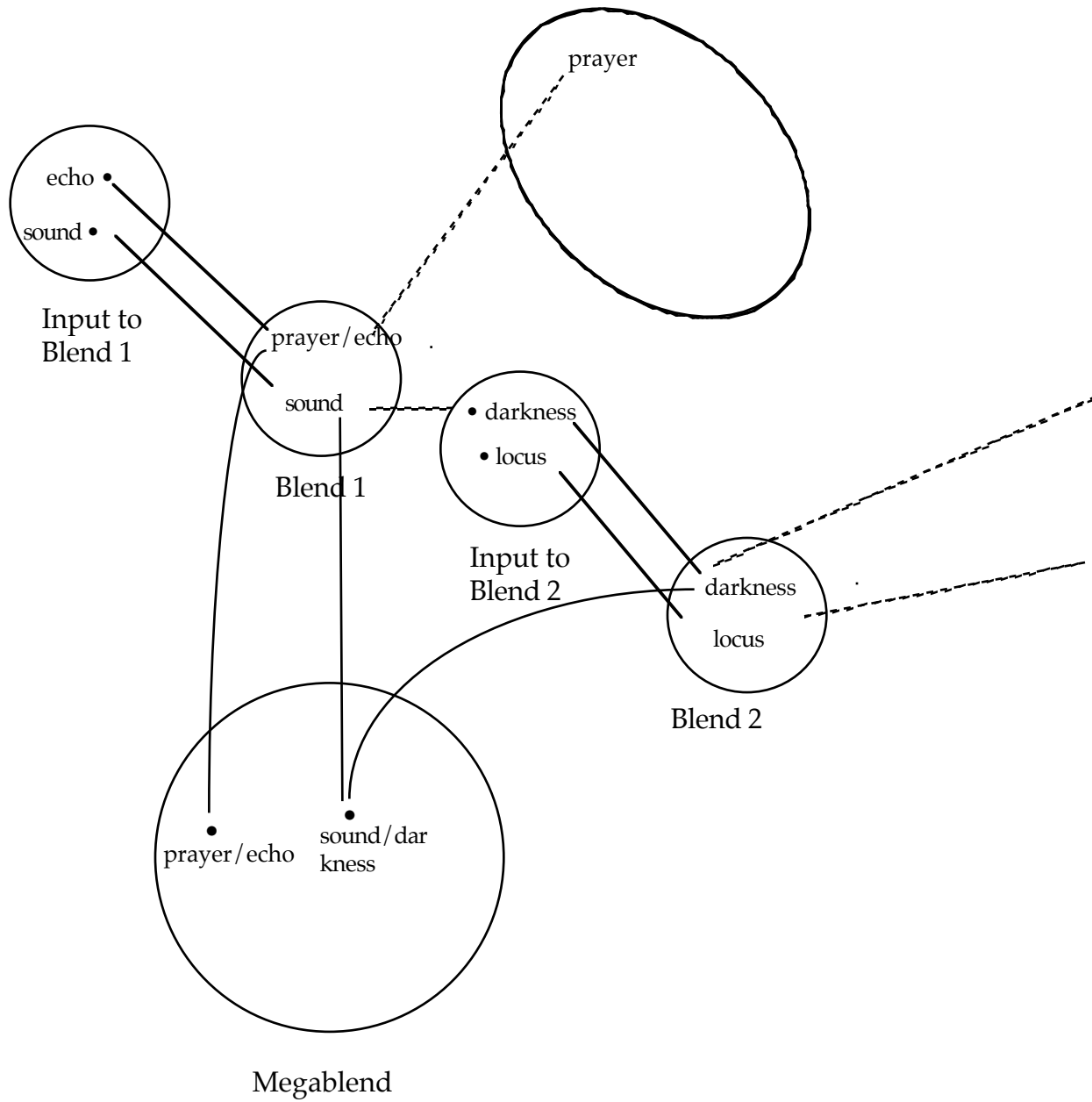


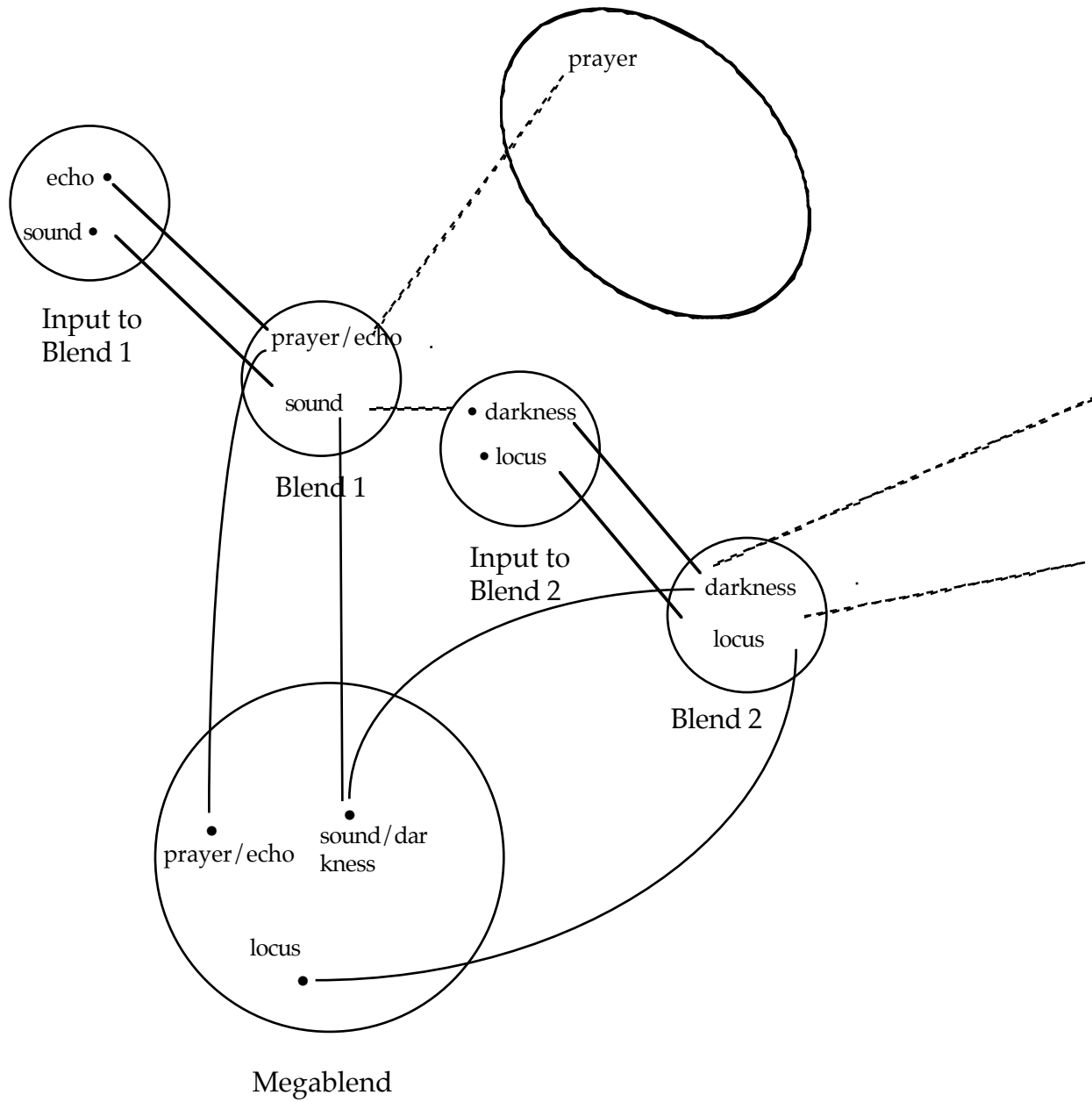




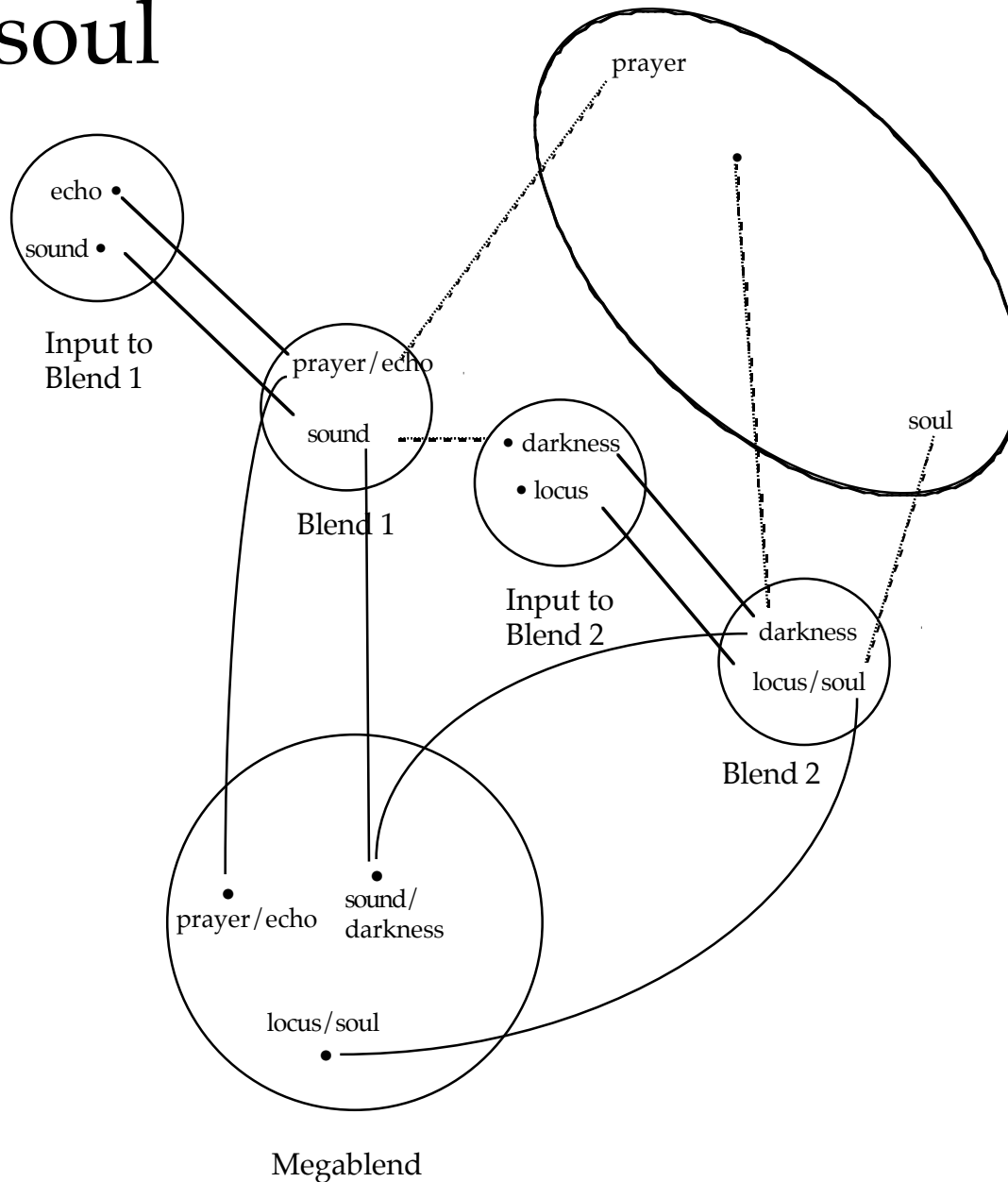




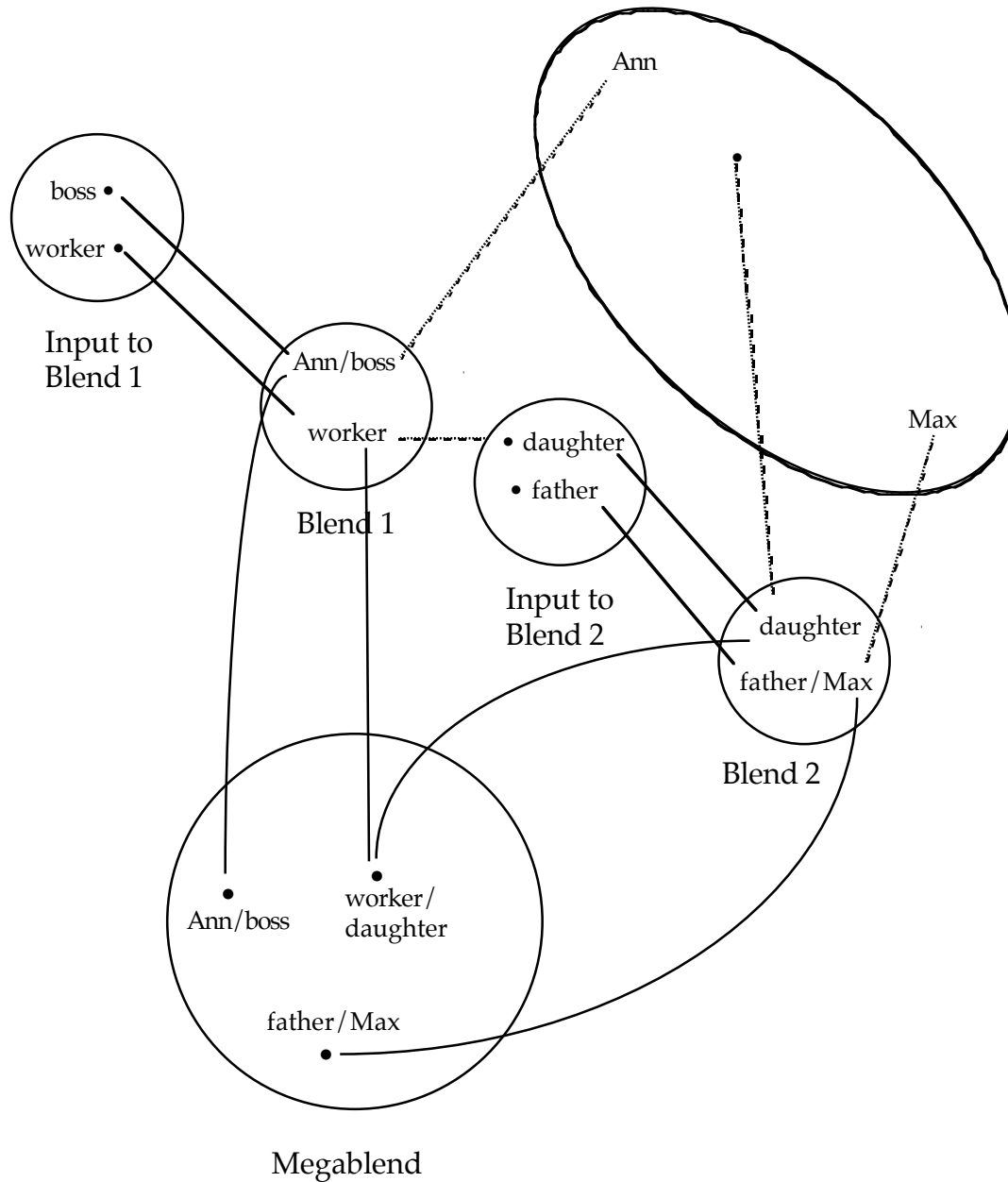




Prayer is the echo of the darkness of the soul



Ann is the boss of the daughter of Max



XYZ: A single syntactic form to prompt for the construction of many different integrations

The construction is the apparently harmless but actually immensely powerful XYZ construction, such as "Necessity is the mother of invention" or "He was the Einstein of the fifth century BC." In this construction—*X be Y of Z*—X, Y, and Z are nouns or noun phrases. "X" and "Z" identify elements x and z in one input space. "Y" identifies element y in a second input space. The copula *be* indicates that x and y are counterparts. And the understander must identify the two relevant domains and set up an implicit element w to be the counterpart of y.

But now, quite interestingly, we have seen how that same construction also prompts for Simplex networks. "*Paul is the father of Sally*" has the very same syntactic form as "*Vanity is the quicksand of reason,*" and maps the kinship subframe "father-ego" onto the two people Paul and Sally and integrates the two inputs into a more richly structured blend. The mapping scheme is exactly the same as in the metaphorical case: x and z in one space are Paul and Sally. y in the other space is the role "father," and it is the counterpart of x (Paul). The missing element w is the "ego" of the kinship frame.

The XYZ construction in English is a general prompt to construct an XYZ integration network. The XYZ construction covers not only Simplex, Single-Scope, and Double-Scope networks, but also all the intermediate integration networks (*Zeus is the father of Athena, I'm the father of Sally for today, The Pope is the father of the Church, and so on*).

Vanity is the Quicksand of Reason

In “*Vanity is the quicksand of reason,*” one input space is concerned with human traits like reason and vanity, while the other has to do with travelling and falling into quicksand. The missing element *w* is the traveler. The structure in the input of travel has a traveler falling into quicksand, and therefore failing in his enterprise (perhaps to the point of dying). In the input with reason, we understand that reason is similarly seriously impeded by vanity. The blend corresponding to the grammatical XYZ construction thus has one element that is reason / traveler and another that is vanity / quicksand.

Vanity is the Quicksand of Reason

Does this freedom of the imagination mean that anything goes? On the contrary, finding one or two such integrations out of the potential infinity of connections afforded by the world is extremely difficult and anything but just random. There are several different influences on what connections will be made and what resulting networks will be satisfactory. To use a connection, like that between *quicksand* and *traveler*, it has to be made active, and it cannot be made active unless it first exists or is constructed. Potential connections are quite unequal in any given moment on how easy it is to activate them and on how entrenched they are. Suppose you hear "Vanity is the quicksand of reason." It launches the XYZ mapping scheme and your brain is now looking for a w. Suppose it has complete latitude and tries *bacteria*. What happens at that point in pursuing the elaboration of the integration network?

Vanity is the Quicksand of Reason

We need a frame in the *quicksand-bacteria* input space that will project to the blend and contribute to its emergent meaning. A minimal requirement on that frame is that it contain the elements *quicksand* and *bacteria* and a relationship between them. But for most people, such a frame is not available because we have no conventional public knowledge or personal memories of such a frame. So even if the brain does try out *bacteria*, nothing comes of it, no blend is formed, and there is no conscious memory of the attempt. On the other hand, suppose we bring into existence the appropriate frame just before "Vanity is the quicksand of reason" comes along. Then that frame will be activated and probably tried out. In that case, *bacteria* might prove a superbly successful candidate for the missing *w*. This prediction is easily confirmed by interpreting the original expression within the following context:

Did you know that some bacteria can live only in quicksand and depend on it for everything? For them, quicksand is not a trap, it is what they need to live at all. Well, for some people, vanity is the quicksand of reason. Their vanity gives them the self-confidence to think well.

"If I were you, I would quit my job" might seem to express a unique blend, but it can prompt for many blends, as revealed the following possible continuations:

... but I am independently wealthy; you shouldn't quit by any means.

... but I am a hothead and would regret it later and would have to go on my knees begging for my job back.

... and so should you.

... but you shouldn't.

... but that's only because the boss needs me so much he would offer me a raise to get me back.

... since I couldn't live with myself knowing how badly I had treated me.

... because being you would make me so utterly miserable I couldn't possibly get any work done.

... since I would have a wealthy father.

... since you have another job offer.

... since I have another job offer.

... since your beloved boss has another job offer and will be leaving soon.

“In any theory of meaning, activation does not come for free. The existence of frames, knowledge, experience, scenarios, and memories does not come for free. Ease of activation and degree of entrenchment by themselves impose very strong constraints on the imagination and the use of language. Linguists, logicians, and for the most part even psychologists tend to focus on the entrenched cases, which are already built and usually easy to activate. When only the rigid and entrenched patterns are used, meaning becomes predictable from the mapping schemes and those patterns. This is probably why linguists, logicians, and analytic philosophers of language have often incorrectly excluded inventive, figurative, creative, and literary examples from their domain of inquiry.” —*TWWT*

“The mistaken view was that only predictable composition of meaning can be scientifically tractable and important, and that only predictable composition of meaning can support genuine rational thought as opposed to the glinting ephemera of whimsy. As we discover repeatedly, the power of thought, whether rational or whimsical, emotional or practical, lies in the same basic mental operations. To focus exclusively on the entrenched cases is to be blind to the way we think. It obscures not only our general operations of thought but nearly all of what is happening in the entrenched cases themselves. The action on stage in the entrenched cases is only possible because of much greater activity in the wings of the imagination.” —*TWWT*

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“Safe”

Consider, for example, "This beach is safe." A common but misguided way of describing the meaning of this sentence is to say that a particular property, *safe*, is predicated of an object, *beach*, by means of the words "safe" and "beach." On this view, "this house is safe" asks us to apply the same particular property, *safe*, to a different object, *house*. So, "safe" just has one meaning, *safe*. It would be straightforward to say "The beach is safe" when we want to let a child play there. And in that situation, it would be equally true that "The child is safe."

But now we see the purported property *safe* attributed to the beach in "The beach is safe" and to the child in "The child is safe" would have to be two different properties, namely, on a first approximation, something like *not potentially harmful* as opposed to *not likely to be harmed*. By the same token, the word "safe" in the sentence "The beach is safe" would have to apply many different properties on the readings that the beach is legally protected from development, has a statistically low number of drownings, is not a site of violent crime, is owned in such a way that its ownership cannot be taken away from the owner, is a vacation spot that can be proposed without problem to someone (as in a "safe bet"), and so on. In one sense, "safe" can mean many different things, but at the same time, there is no subjective apprehension of polysemy in these cases.

The details in these cases are actually surprising. They show that in order to make sense of "safe," we need to construct a counterfactual situation in which there is a victim, a location, instruments, possessions, and harm to the victim. In the case of the beach that is legally protected, the beach is the victim and the developers do harm to it. In the case of the beach with few drownings, the swimmers are victims and the beach (meaning the water) does harm. In the case of the beach without crime, the vacationer is the victim and the criminals do harm. Alternatively, the owner of the beach can be the victim, or the person to whom we propose vacation spots can be the victim. We see that the noun that "safe" is applied to can point to many different roles in many different scenarios, not just the role of victim.

Safe beach.

Fake gun. (Coulson & Fauconnier)

Place the flowers in front of the
missing chair.

There is a gap in the fence.

—“Safe.” Even very simple constructions in language depend upon complex blending. It is natural to think that adjectives assign fixed properties to nouns, so that “the cow is brown” assigns the fixed property *brown* to *cow*. By the same token, there should be a fixed property associated with the adjective “safe” that is assigned to any noun it modifies. Consider the following unremarkable uses of “safe” in the context of a child playing at the beach with a shovel: “The child is safe,” “The beach is safe,” and “The shovel is safe.” There is no fixed property that “safe” assigns to *child*, *beach*, and *shovel*. Consider also “The jewels are safe.” “The packaging is safe.” “Drive at a safe speed.” “Have a safe trip.” “This is a safe bet.” “The beach is shark-safe” vs. “The beach is child-safe.”

—“The beach is safe” shows that the “matches” are not achieved independently of the blend, and that there is nothing simple about “matching.”

—"Safe" is not an exceptional adjective, with special semantic properties that set it apart from ordinary adjectives. It turns out that the principles of integration suggested above are needed quite generally. Even color adjectives, which at first blush look as if they must assign fixed features, turn out to require non-compositional conceptual integration. "Red pencil" can be taken to mean a pencil whose wood has been painted red on the outside, a pencil that leaves a red mark (the lead is red, or the chemical in the pencil reacts with the paper to produce red, or . . .), a pencil used to record the activities of the team dressed in red, a pencil smeared with lipstick, not to mention pencils used only for recording deficits. Theories of semantics typically prefer to work with examples like "black bird" or "brown cow" since these examples are supposed to be the prototypes of compositionality of meaning, but in fact as we will show later, even these examples illustrate complicated processes of conceptual integration.

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INPUT 1

NP

agent

a

V

causal action

e

means

manner

motion

NP

object

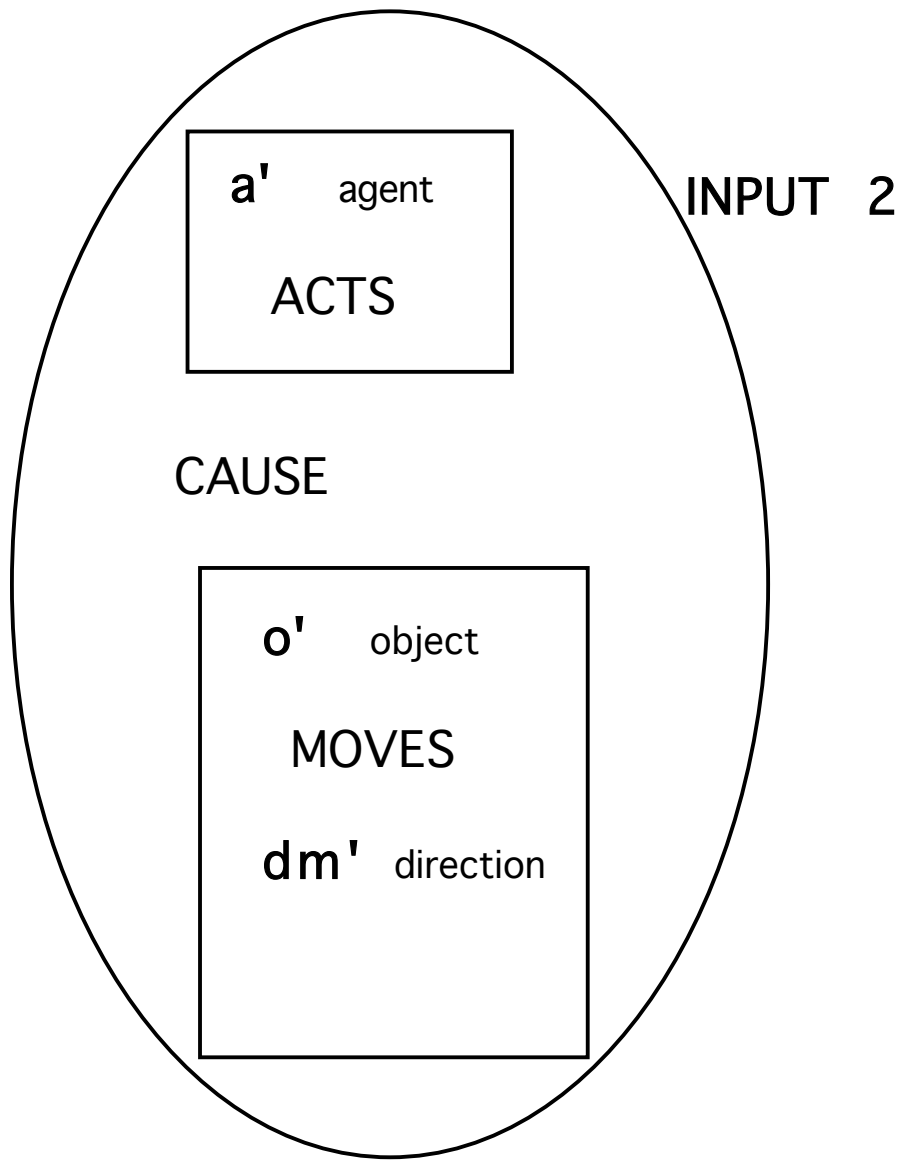
o

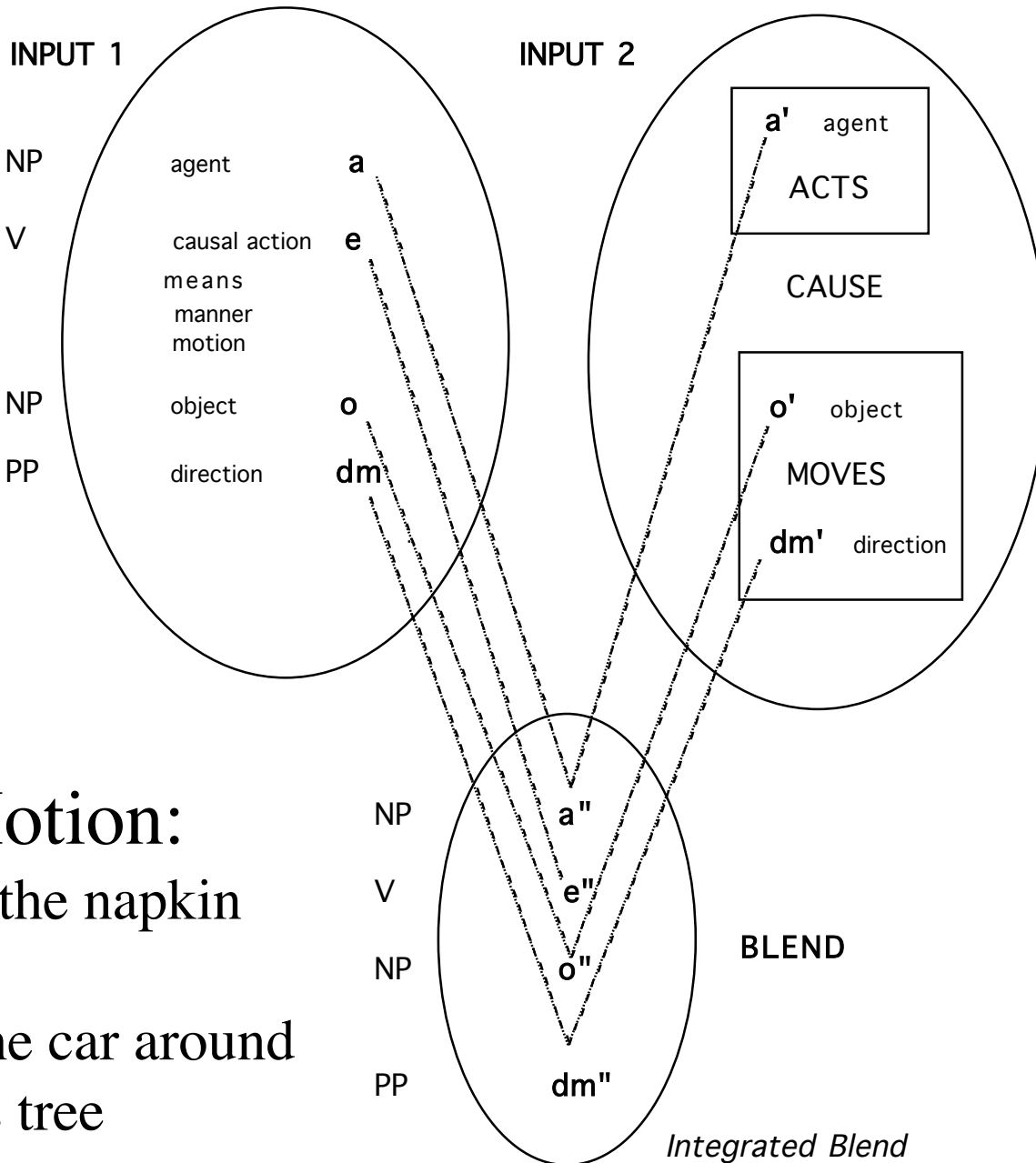
PP

direction

dm

Caused-Motion:



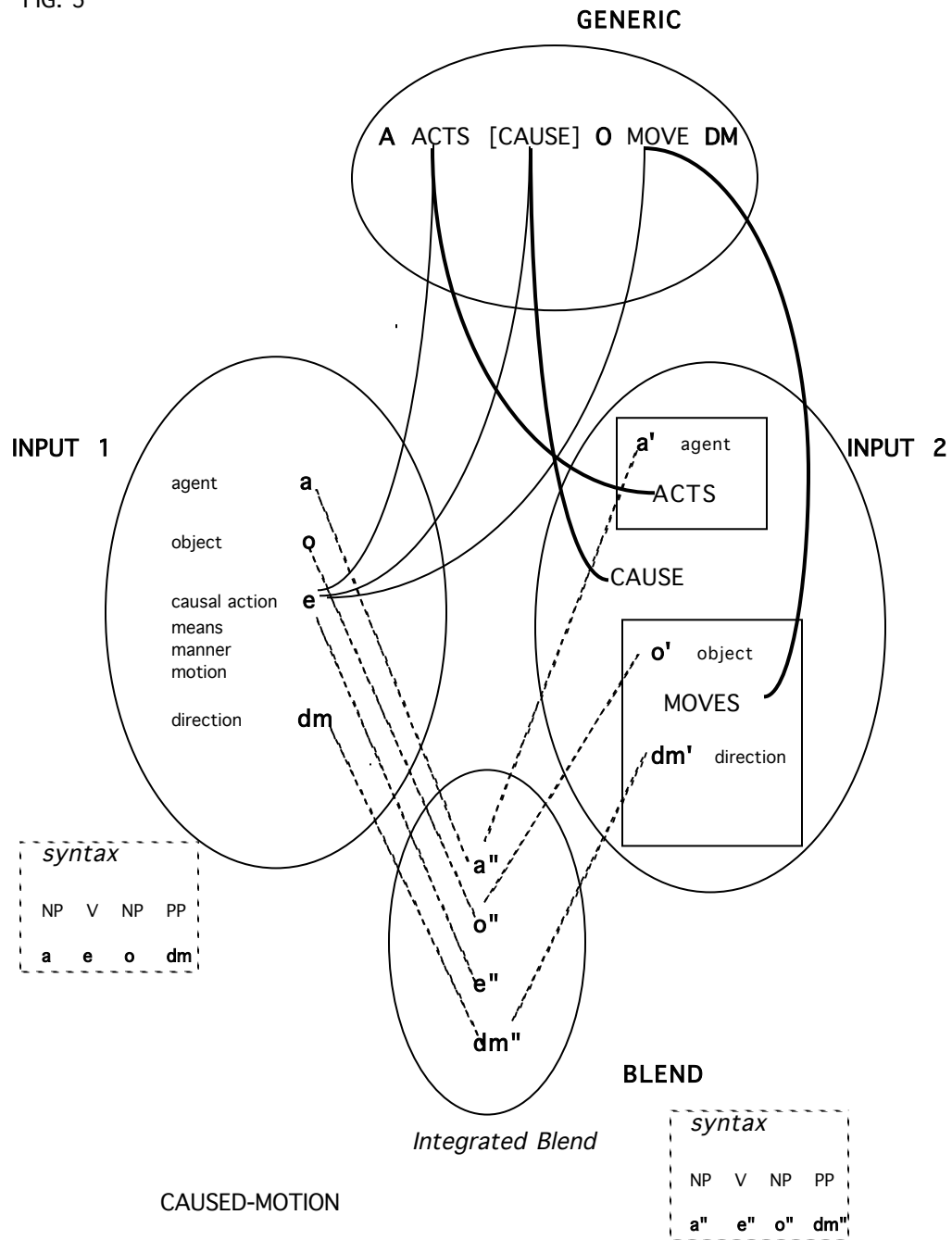


Caused-Motion:

Paul sneezed the napkin
off the table.

Junior sped the car around
the Christmas tree

FIG. 5



Integrated Blend

CAUSED-MOTION

syntax

NP	V	NP	PP
a	e	o	dm

syntax

NP	V	NP	PP
a''	e''	o''	dm''

Caused Motion clausal construction

"I walked him into the room."

"He sneezed the napkin off the table."

"I pointed him toward the door."

"They teased him out of his senses."

"I will talk you through the procedure."

"I read him to sleep."

"They prayed the two boys home."

"I muscled the box into place."

"Hunk choked the life out of him."

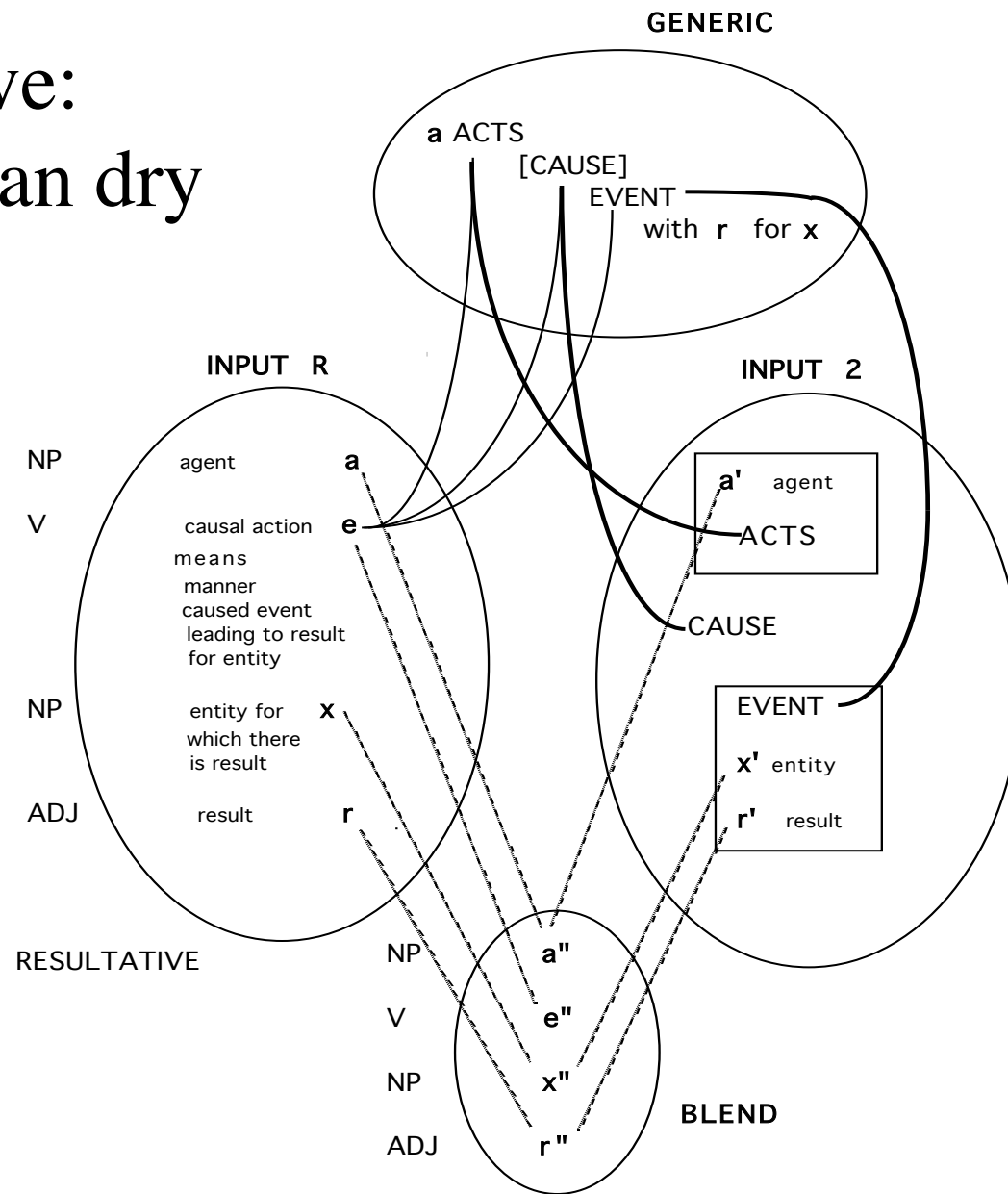
"He floated the boat to me."

But also: "We blocked him from the door."

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Resultative: I boiled the pan dry



Resultative clausal construction

Catherine painted the wall white.

She kissed him unconscious.

Last night's meal made me sick.

He hammered it flat.

I boiled the pan dry.

The earthquake shook the building apart.

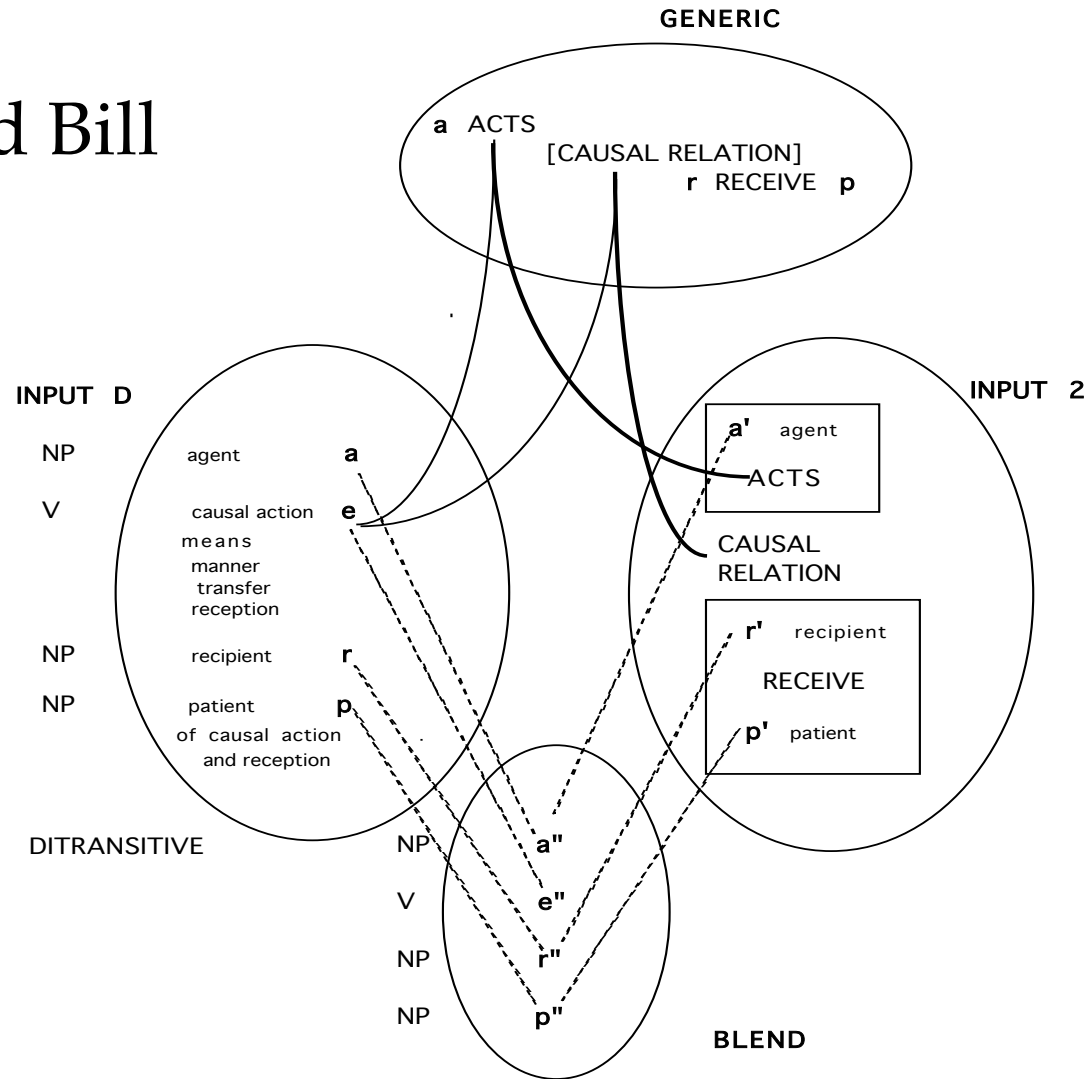
Roman imperialism made Latin universal.

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Ditransitive:

“Mary poured Bill
some wine”



Ditransitive clausal construction

Paul handed her the book.

Paul made him a house.

She granted him his wish.

She gave him that premise.

She allowed him that privilege.

She won him a prize.

She bequeathed him a farm.

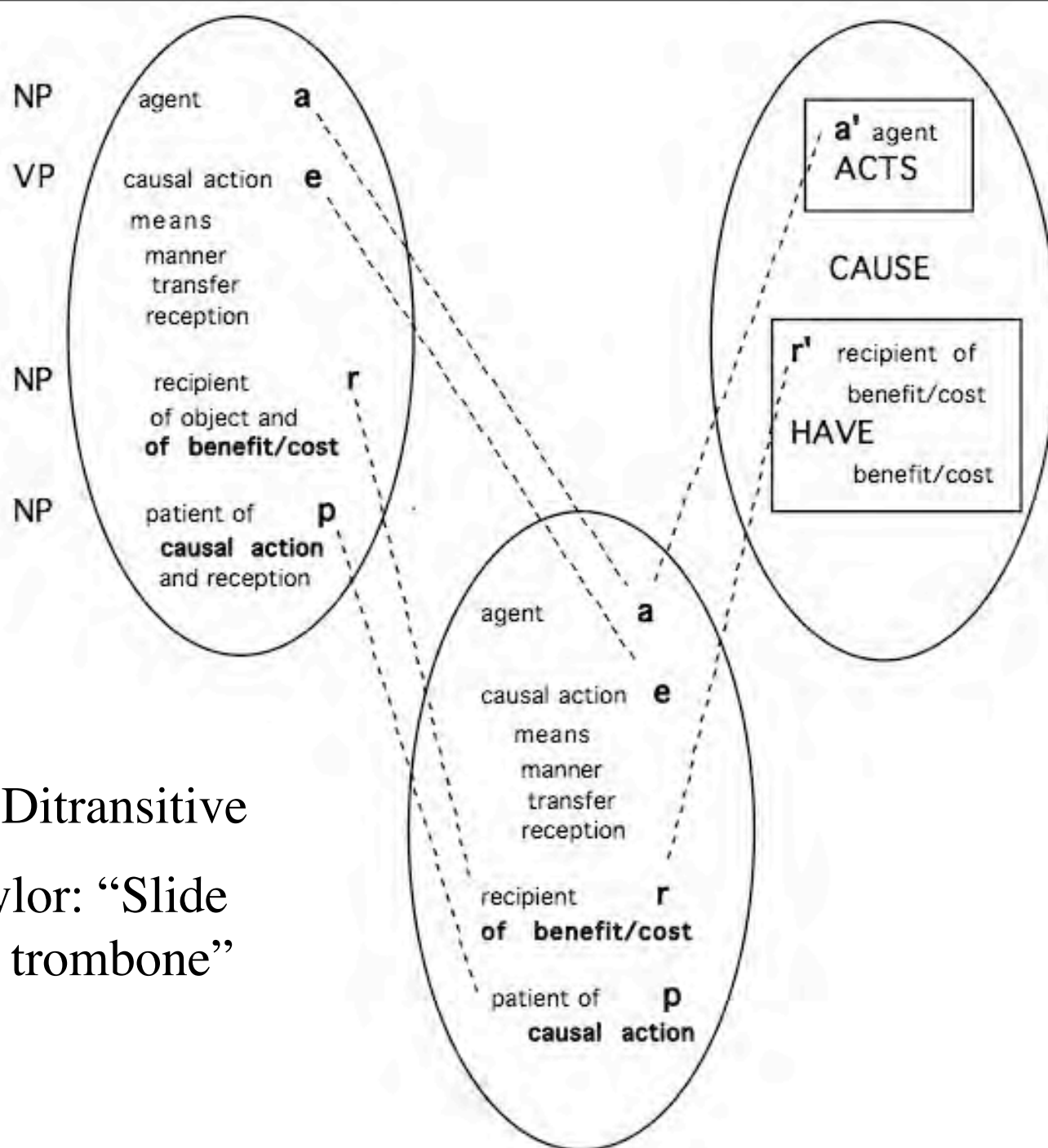
She gave him a headache.

She showed me the view.

She told me a story.

She denied him the job.

She refused him that courtesy.



Elaborate Ditransitive

James Taylor: “Slide
me a bass trombone”

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DOUBLE-SCOPE COMPRESSION IN A TWO-WORD NUTSHELL

Boat house

Red pencil

House boat

Green house

Angry man

Black kettle

Child-safe

Government bond

Sugar-free

Fossil Poetry

Dolphin-sate

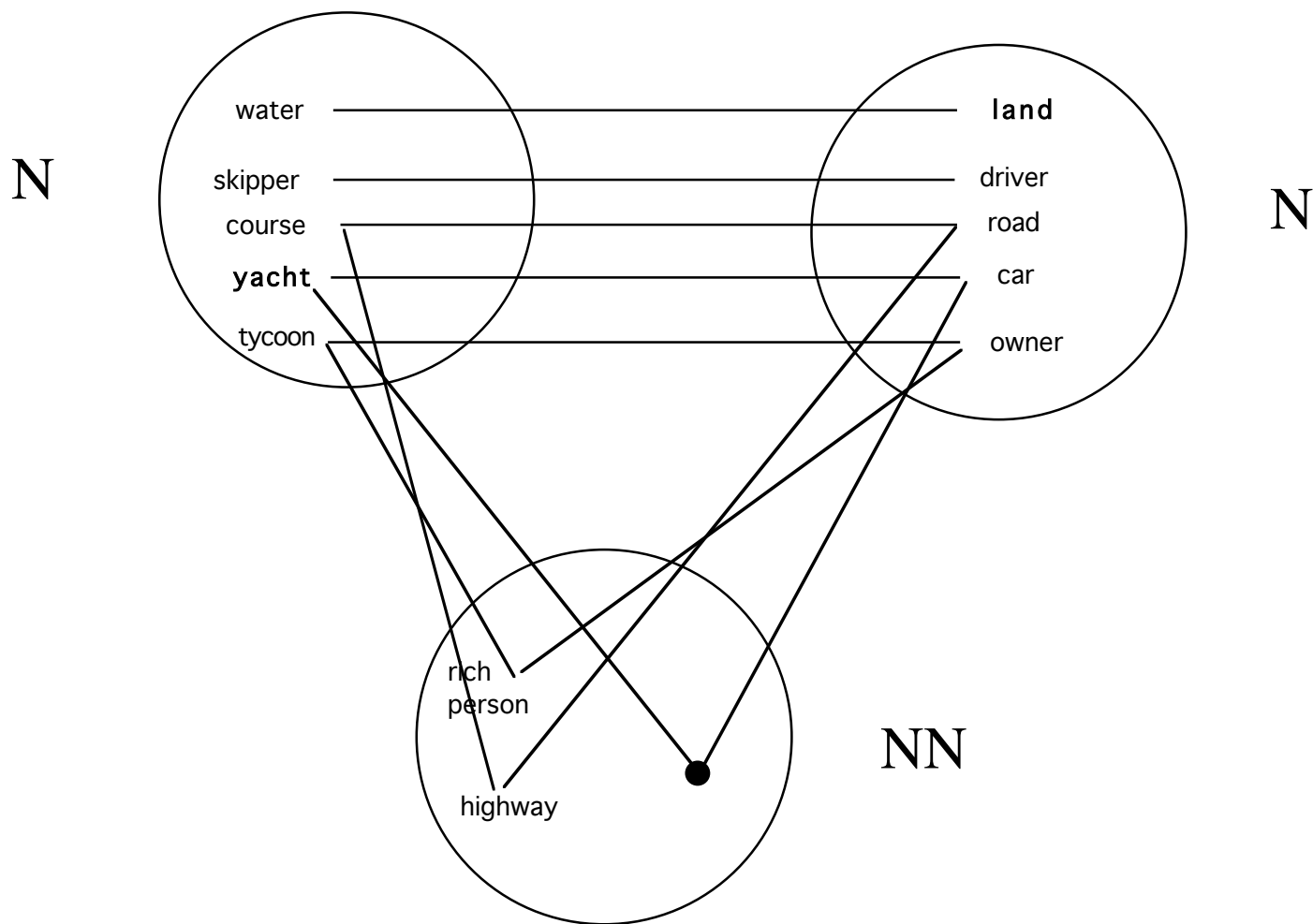
Caffeine Headache

Shark-safe

Arousal Problem

Cruelty-free

Emergent Grammar



Land Yacht

Land yacht.
Boat house.
House boat.

caffeine headache

money problem

nicotine fit

security problem

arousal problem

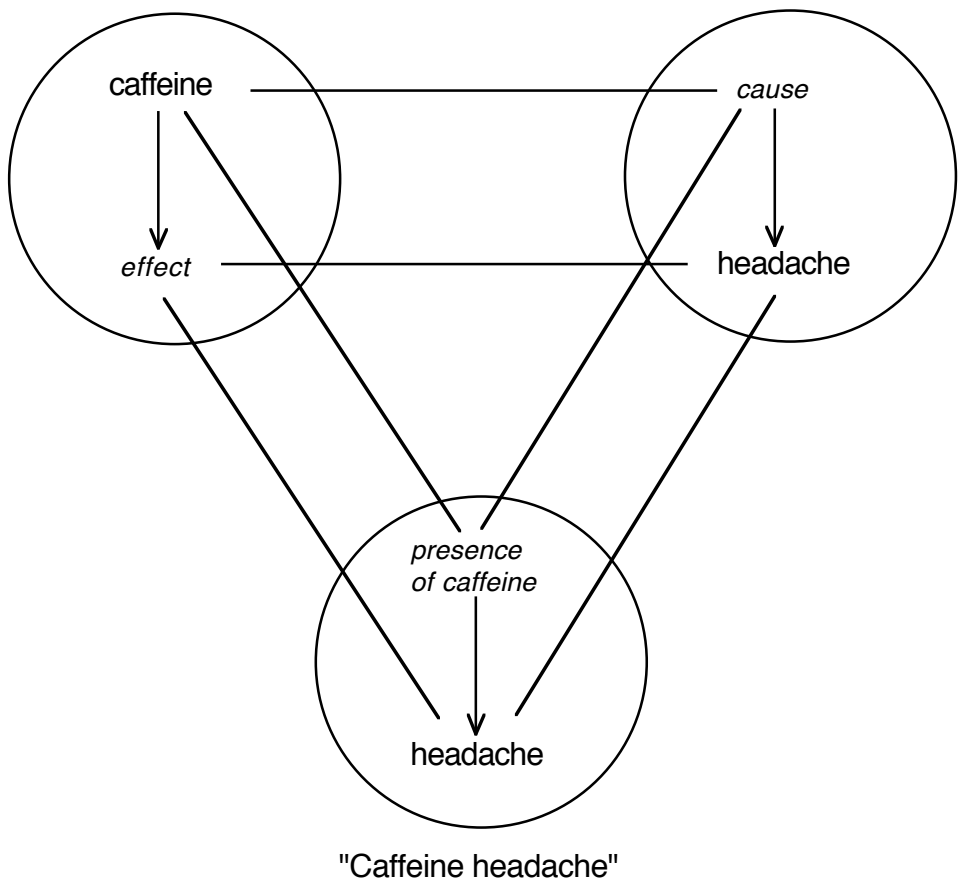
insulin coma

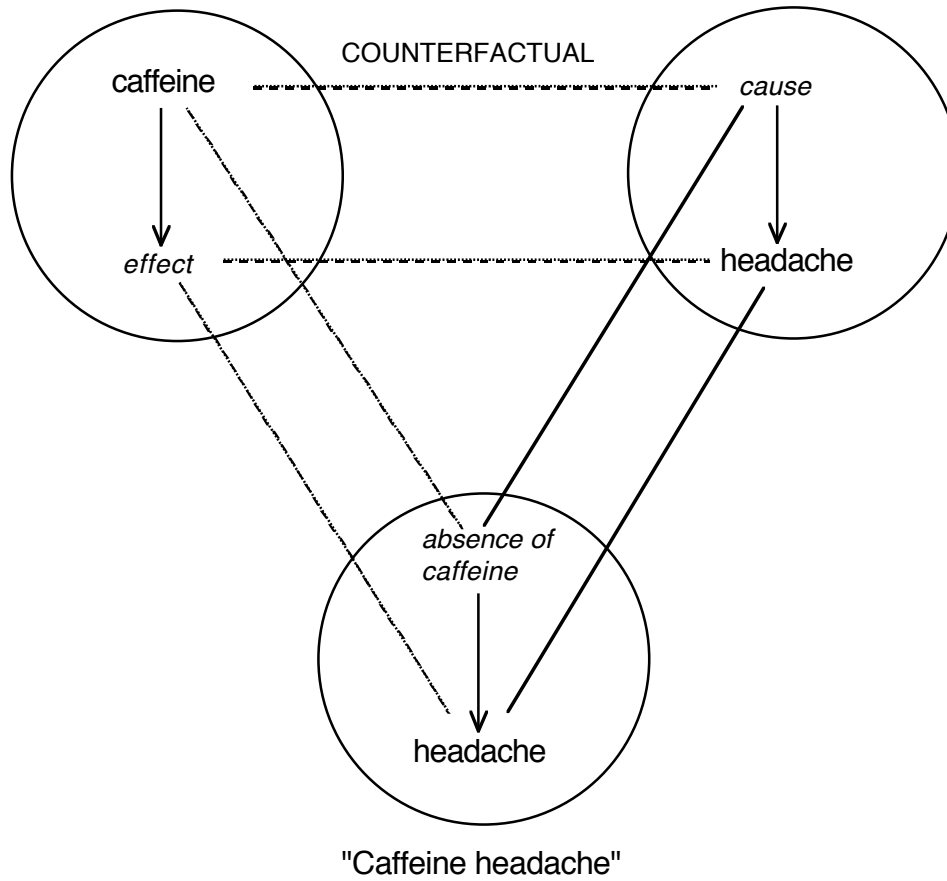
insulin death

food emergency

honesty crisis

rice famine





Jail Bait

Consider "jail bait," a phrase used to refer to an under-age girl whom an of-age man finds sexually attractive. "Jail" comes from the domain of human criminality, while "bait" comes from the domain of fishing or trapping. In the mapping between them, attraction to the girl corresponds to attraction to the bait, initiating sex corresponds to swallowing the bait, and ending up in jail (for sex with a minor) corresponds to ending up caught. The conceptual elements named in the integrated syntactic form "jail bait" are not counterparts in the conceptual mapping. Here, obviously, we are prompted to borrow the compressions and intensities of the fishing frame for the purpose of compressing the "sex with a minor" frame and intensifying many of its vital relations. For example, the causal chain in the "sex with a minor" space can be long and diffuse, from perception to incarceration. But the fishing frame, by contrast, has direct human-scale causation: a single bodily action results in immediately being caught.

Jail Bait

There is extraordinary emergent structure: in the blend, the man is not to blame. In the space of fishing, the fish does not know that the bait is bait. In the space with the man and the minor, the man certainly does know about laws and jail and he recognizes that sex with the girl is legally forbidden. But in the blend, he is blameless for the action, indeed even the prime victim, even though he understands the law, the prohibition, the possible punishment, and the reasons for it. The 'jail-bait' blend may acquire further emergent structure through the Principle of Intensification of Vital Relations. In the fishing space, the intentionality is in the fisherman's attempt to trick the fish and catch it. In the other input ('sex with a minor') the intentionality is in the man's attraction. There is no counterpart for the fisherman in the space with the minor, but it is nevertheless possible to project something like the fisherman's intentionality into the blend. One corresponding interpretation holds the girl herself responsible for what befalls the man. Another might bring in the Devil. Another might bring in the injustice of the world, society and its laws.

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Likely candidate. (Sweetser)

Guilty pleasures.

Silver honeymoon.

Red ball.

Complex Grammatical Structures

- “Y of” networks like "Ann is the boss of the daughter of Max"
- Words like "safe"
- Caused motion clausal constructions
- Resultative clausal constructions like "He boiled the pan dry" and "She bled him dry"
- Ditransitive clausal constructions
- Nominal compounds like "boat house," "house boat," and "jail bait,"
- Adjective-Noun compounds like "guilty pleasures," "likely candidate," and "red ball"
- Morphological combinations in a single word like "Chunnel."

Formal Blending

Chunnel

Tunnel sous La Mache

McJobs

Hunch hour: 2pm

Out on a Limbaugh

Complex Grammatical Structures

- For all these cases we saw that the construction in the language had a stable syntactic pattern (e. g., Noun-Noun for "boat house," and NounPhrase-Verb-NounPhrase-Adjective for "She bled him dry"). That pattern prompts for a specific blending scheme. The blending scheme carries with it a particular kind of compression.

More

Fauconnier and Turner. 1996.
“Blending As A Central Process of
Grammar.” Available from the
Cognitive Science Network: [http://
ssrn.com](http://ssrn.com)

French causatives

*Pierre **nourrit** Paul.*

NP V NP

*Pierre **fait manger** Paul.*

NP V V NP

(Pierre feeds Paul.) [Paul is the agent of 'manger']

*Pierre **expédie** le paquet.*

NP V NP

*Pierre **fait envoyer** le paquet.*

NP V V NP

(Pierre sends the package.) ['le paquet' is the object of 'envoyer']

*Pierre **donne** la soupe à Paul.*

NP V NP à

*Pierre **fait manger** la soupe à Paul.*

NP NP V V NP à NP

(Pierre feeds Paul the soup.) [Paul is the agent of 'manger', 'la soupe' is the object]

Kemmer and Verhagen (1994):

"Analytic causative constructions can best be described as extensions of simpler kinds of expressions, rather than as reductions from more complex underlying structures."

Kemmer and Verhagen argue that there are cognitive models of causation based on force dynamics and interactions between participants, and that these models relate to basic models, including transitive and ditransitive event structures. We think this view is exactly right, and that Blending is the cognitive operation which allows the basic models to serve as inputs to the conceptual integration of more elaborate causal sequences. Extension and conceptual mechanisms are not available to generative and relational theories of grammar, and the vast majority of analyses of causative constructions, in French and other languages, has attempted explanations based on reduction of underlying structure. Such analyses prove to be extremely complex. The French data is rich in apparent exceptions.

Emergent Syntax: V+V

NP V V NP

[Pierre fait manger Paul.

[Pierre makes eat Paul], meaning "Pierre feeds Paul"

[Paul is the agent of 'manger']

Pierre fait envoyer le paquet.

NP V V NP

[Pierre makes send the package], meaning "Pierre has
the package sent"

['le paquet' is the object of 'envoyer']

Pierre fait manger la soupe à Paul.

NP V V NP à NP

[Pierre makes eat the soup to Paul], meaning

"Pierre feeds Paul the soup"

[Paul is the agent of 'manger', 'la soupe' is the object]

Emergent Syntax: V+V

French, like English, has three basic constructions corresponding to integrated events involving causation:

Transitive: Syntax: NP V NP
 Roles: CA E O

[notation: O for "object," IO for "indirect object," E for an event or state.]

[example: *Marie nourrit Paul*. Does not admit an IO: **Marie nourrit Paul à Pierre*. E includes causal action and resulting event (Pierre eats)]

Transfer: Syntax: NP V NP à NP
 Roles: CA E O IO

[example: *Marie donne la soupe à Paul*.]

Optional Transfer: Syntax: NP V NP (à NP) (par NP)
 Roles: CA E O (IO) (EA, means)

[example: *Marie vend des livres (à Paul) (par un intermédiaire)*]

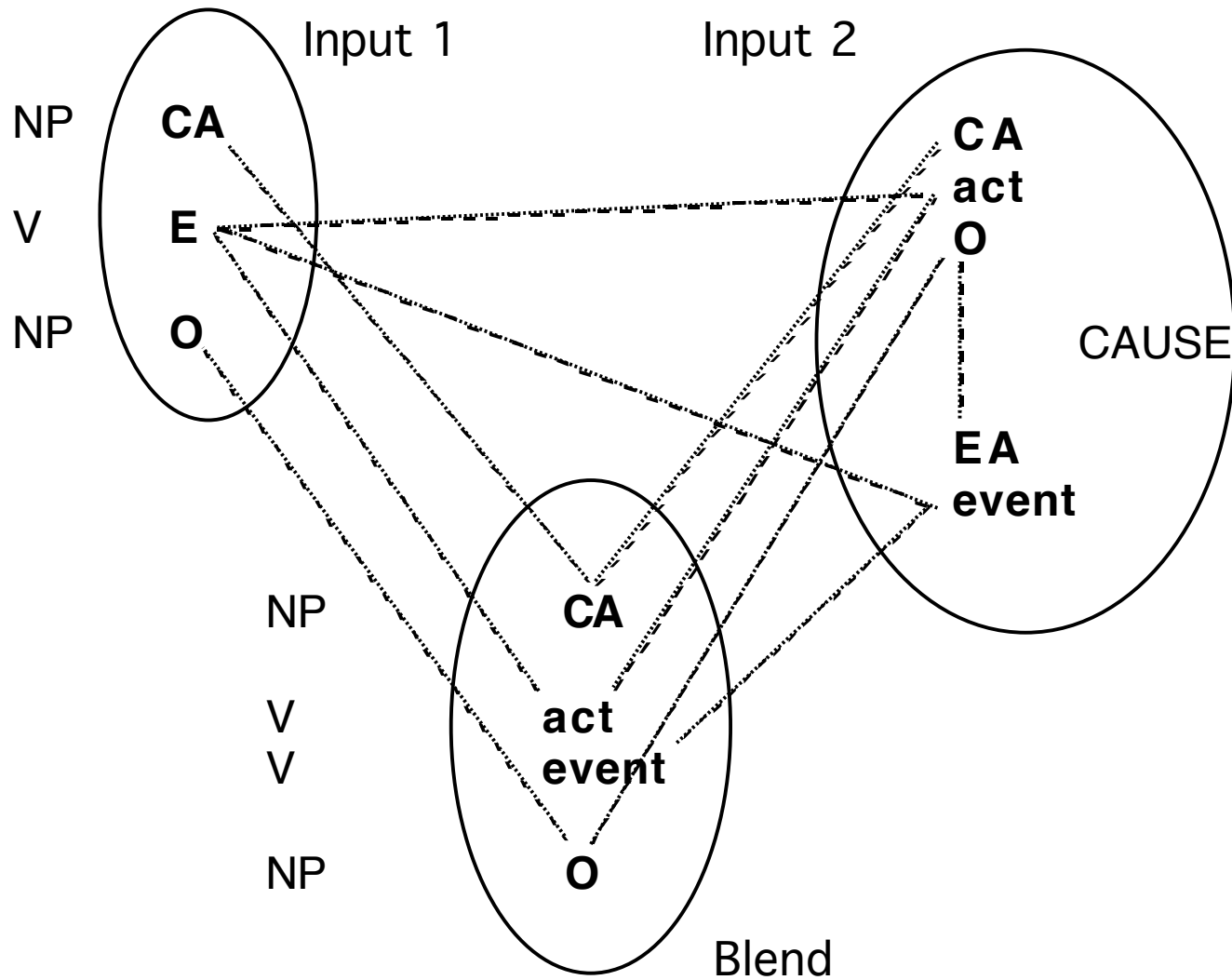
[a middle construction is also possible here, that doesn't express the CA:
Ces livres se vendent par un intermédiaire.]

Emergent Syntax: V+V

Transitive Blend: the conceptual causal sequence
[CA acts upon O] CAUSE [EA event] O = EA
blends with the Transitive Input [CA E O]

The counterpart mapping is straightforward: CA onto CA, O onto O, except for E which is mapped onto two counterparts, 'act' and 'event.' The blend inherits CA and O from integrated Input 1, and 'act' and 'event' from Input 2:

Transitive Blend



Pierre fait manger Paul.

Transfer Blend

Transfer Blend: the causal sequence

[CA act] CAUSE [EA event O]

blends with the Transfer construction [CA E O IO]

CA and O have unproblematical counterparts CA and O. The counterpart of EA is the indirect object IO, simply because in the prototypical case, the IO is the agent of the caused event, e.g. *Bill feeds the soup to Mary* = [Bill acts] CAUSE [Mary eats]. And, as in the Transitive Blend, E maps both to 'act' and 'event.' The Blend therefore acquires the role structure [CA act event O IO] (ex. 4). 'Paul' this time is a true IO in the blend, and so the clitic 'lui' is possible.

However, since the Blend, like the Basic Construction, has only one IO (this is independently a general constraint on role structures in French), if the caused event in the causal sequence happens to have an indirect object of its own, it will have no position to map onto (IO is already taken), and a corresponding IO clitic pronoun will be excluded, as in the ungrammatical (8).

Optional Transfer Blend

Optional Transfer Blend: the causal sequence

[CA act] CAUSE [event O (IO) (EA = means)]

The counterpart relations are straightforward, and the syntax for the Blend is *NP faire V NP (à NP) (par NP)*. This time, there is an IO position in the Blend, and furthermore it is mapped onto the IO position of the resulting event in the causal sequence. This predicts that corresponding clitic pronouns will be acceptable, as confirmed by examples like (7) and (13). The preverbal position of the clitics and reflexives is inherited from the integrated Basic input. But the event in the causal sequence may already itself be reflexive conceptually, in which case it is mirrored by a reflexivized verb *se-V*. It then fits into the Blend according to its remaining number of roles. For example *transformer* has an object O, but *se transformer* does not. Hence the reflexive verb will fit the Transitive Blend, yielding example (6), with the reflexive superficially in between the two verbs (syntax specific to the Blend), and with NP (rather than "à NP") for the agent of the caused event.

Mandelblit's binyan blends

Hebrew verbs all consist of (a) a skeleton of consonants (the 'root'), slotted into (b) some vowel pattern, or prefix+vowel pattern. Such a vowel or prefix+vowel pattern is called a *binyan*. The plural is *binyanim*. The consonants carry the "core meaning" of the verb. There are seven major *binyanim* in Hebrew (the capital C's stand for the root consonants to be inserted): *CaCaC*, *CuCaC*, *CiCeC*, *niCCaC*, *hiCCiC*, *huCCaC*, and *hitCaCeC*. Consider, for example, the root *r.?.h*. (where ? stands for a glottal consonant), with the meaning "see." Here are five forms of this verb with different *binyanim*:

Mandelblit's binyan blends

Here are five forms of this verb with different binyanim:

CaCaC + *r?.h* [*ra?a*] 'to see'.

niCCaC + *r?.h* [*nir?a*] 'to be seen',
or 'to seem'.

hiCCiC+ *r?.h* [*her?a*] 'to show'.

huCCaC+ *r?.h* [*hur?a*] 'to be
shown'.

hitCaCeC+ *r?.h* [*hitra?a*] 'to see each
other'.

Mandelblit's binyan blends

Mandelblit shows that each *binyan* prompts for a *particular blending schema*. Consider, for example, the *binyan* hiCCiC (termed *hif'il*), and the root verb r-u-c, meaning "run." They are blended as follows:

r-u-c hi--i-

hiruic

[written "heric"]

Mandelblit's binyan blends

This formally blended verb occurs in the following sentence:

hamefaked

heric

et

haxayalim.

the-commander

run-hif'il_{past}

direct-object-marker t h e -

soldiers.

"The commander made the soldiers run".

Mandelblit's binyan blends

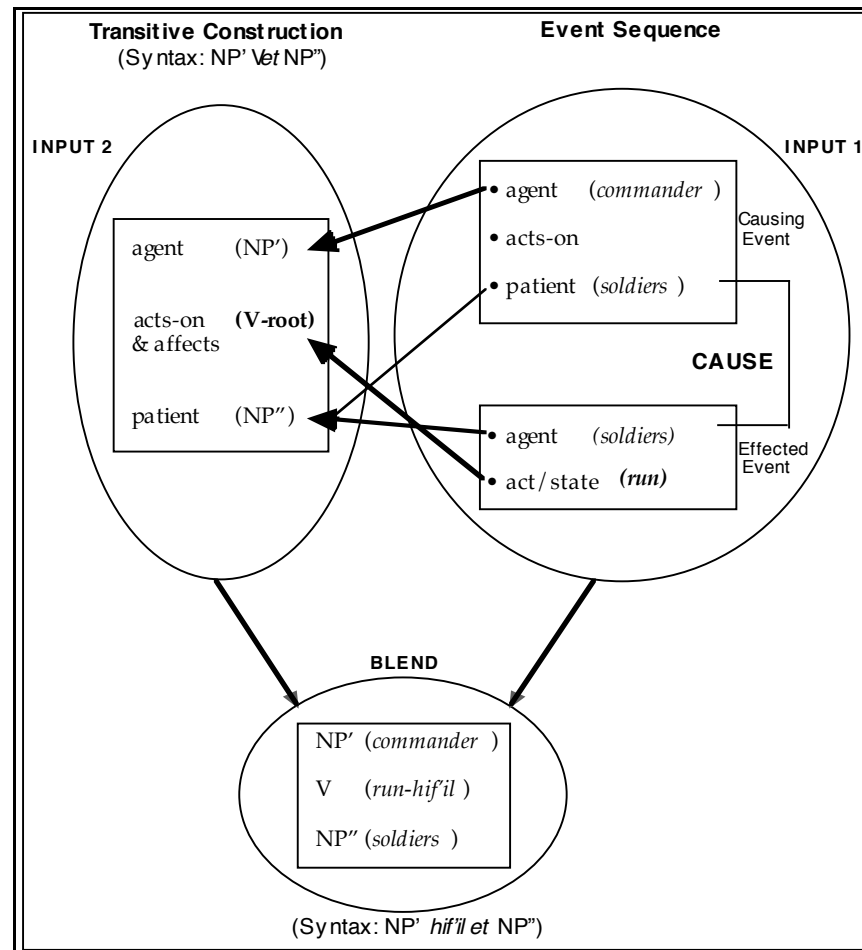
hamefaked *heric* *et* *haxayalim.*
the-commander run-hif'il_{past} direct-object-marker the-soldiers.

"The commander made the soldiers run".

The sentence integrates a whole causal sequence of events: there is the causing event of the commander acting on the soldiers, and the resulting (or effected) event of the soldiers running. We see from this sentence that Hebrew has a way of prompting for a compression of both a causing event and a caused event in a single-verb clausal construction. The verb is "heric" and the single-verb clausal construction is the Hebrew Transitive, whose language form is:

NounPhrase-Verb-*et*-NounPhrase.

Mandelblit's binyan blends



Universal Grammar?

SCIENCE'S COMPASS



• REVIEW

REVIEW: NEUROSCIENCE

The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?

Marc D. Hauser,^{1*} Noam Chomsky,² W. Tecumseh Fitch¹

www.sciencemag.org SCIENCE VOL 298 22 NOVEMBER 2002

Hauser, M. D., Chomsky, N., & Fitch, W. T. (2002) The faculty of language: what is it, who has it, and how does it evolve? *Science* 298, 1569-1579.

“We argue that an understanding of the faculty of language requires substantial interdisciplinary cooperation. We suggest how current developments in linguistics can be profitably wedded to work in evolutionary biology, anthropology, psychology, and neuroscience. We submit that a distinction should be made between the faculty of language in the broad sense (FLB) and in the narrow sense (FLN). FLB includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements. We hypothesize that FLN only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language, hence comparative studies might look for evidence of such computations outside of the domain of communication (for example, number, navigation, and social relations).”

Blending blends . . .

- Dwight Bolinger's blends
- George Lakoff's syntactic amalgams

Sometimes recursively

Recursion in blending

- Conceptual:
 - Mother of Paul. Mother of mother of Paul. Mother of mother of mother of Paul.
 - Grim Reaper for the Grim Reaper. “Death, thou shalt die.”
 - Aquinas believes Augustine believes Ambrose believes Paul believes Jesus believes . . .

Recursion in blending

- Conceptual:
 - The film. Which film? The one that was panned by the reviewer. Which reviewer? The one who was kissed by the actress. Which actress? The one who was escorted by the director. Which director? The one who was insulted by the reviewer.

Recursion in blending

- Grammatical constructions
 - “Mother of mother of mother of Paul.” (See chapter 8 of TWWT, “Continuity Behind Diversity.”)
 - “Aquinas believes Augustine believes Ambrose believes Paul believes Jesus believes . . .”
 - "Lace stocking girl scout ballet school."
 - the film [that was panned by the reviewer [who was kissed by the actress [who was escorted by the director [who was insulted by the reviewer]]]]

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Universal Grammar?



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COGNITION

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The faculty of language: what's special about it?☆

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“We examine the question of which aspects of language are uniquely human and uniquely linguistic in light of recent suggestions by Hauser, Chomsky, and Fitch that the only such aspect is syntactic recursion, the rest of language being either specific to humans but not to language (e.g. words and concepts) or not specific to humans (e.g. speech perception).”

Universal Grammar

Universal Grammar

Conceptual Blending

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Conceptual Blending

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兼及
軍國
然亦
子孫
實為

第七届中国认知语言学国际论坛

The 7th China International Forum on Cognitive Linguistics

时间:2009年5月28日

地点:北京航空航天大学外国语学院语言学研究中心

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