

Fictive Motion in Language and "Ception"

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1. introduction

Proposed is a unified account of the extensive cognitive representation of non-veridical phenomena -- especially forms of motion -- both as they are expressed linguistically and as they are perceived visually.

1.1 introductory illustrations

1.1.1 linguistic examples that depict motion with no physical occurrence

- a. This fence goes from the plateau to the valley.
- b. The cliff wall faces towards / away from the island.
- c. I looked out past the steeple.
- d. The vacuum cleaner is down around behind the clothes hamper.
- e. The scenery rushed past us as we drove along.

1.1.2 visual examples where one perceives motion with no physical occurrence:

- a. the "apparent motion" perceived, e.g., in successive flashes along a row of lightbulbs, as on a marquee
- b. the perceived "induced motion" of, say, a rod when only a surrounding frame is moved
- c. the perception of a curved line as a straight line that has undergone processes like indentation and protrusion
- d. the possible perception of an obliquely oriented rectangle (e.g., a picture frame) as having been tilted from a vertical-horizontal orientation
- e. the possible perception of a "plus" figure as involving the sequence of a vertical stroke followed by a horizontal stroke.

1.2 cognitive pattern of "general fictivity"

within the cognition of a single individual,

a discrepancy between two cognitive representations of the same entity

- a. a "factive" representation, assessed by the individual as more veridical
- b. a "fictive" representation, assessed by the individual as less veridical

e.g., factive stationariness and fictive motion both represented for the same target entity

1.2.1 in language:

factive representation = belief held as to "real" nature of a referent

fictive representation = literal reference of the linguistic forms making up a sentence

e.g.,: The fence goes from the plateau to the valley

factive representation: our belief that the fence is stationary

fictive representation: the literal reference of the words that the fence is moving

1.2.2 in visual perception:

factive representation = concrete palpable percept that one has of a scene = "seeing"

fictive representation = concurrent low-palpability percept that one has of the same scene = "sensing"

e.g.,: on viewing a particular line drawing

factive representation: seeing a Pac-Man configuration

fictive representation: sensing a circle with a wedge removed

1.3 what is language-specific and what is universal in linguistic fictive motion

language-specific: the particular (types of) referents for which fictive motion expressions exist

universal: the direction in which the fictive motion proceeds, where a fictive expression does exist

1.4 phenomenology of fictive motion

1.4.1 degree of the experience: can range from mild sense of directedness to full motion

constructional fictive motion:

the representation of stationariness by forms/constructions whose basic reference is to motion

experienced fictive motion:

where speaker/hearer experiences some sense of motion when such forms are used.

1.4.2 compellingness of the experience: can range from suggestion to full conviction of motion

1.4.3 what one experiences as moving

the named entity / some object moving with respect to the named entity /
one's focus of attention / some essence of abstracted motion

1.5 many categories of fictive motion:

emanation, pattern paths, frame-relative motion, advent paths, access paths, coextension paths, ...

2. the emanation category of fictive motion

something intangible emerges from a source, moves along a straight line, and impinges on a distal object

2.1 orientation paths

an intangible emanation emerges from the front of an object that bears a front,
moves along a straight line, and impinges on a distal object

2.1.1 demonstrative paths

the Source object is linear with a point-type front; the emanation is coaxial with the linear object

(1) I / The arrow on the signpost pointed toward / away from / into / past the town.

2.1.2 prospect paths

the Source object has a planar (face-type) front; the emanation is perpendicular to this plane

(2) The cliff wall faces toward / away from / into / past the valley.

2.2 radiation paths

radiation emanates steadily from an energy source, moves along a straight line, and impinges on a distal object

This emanation type has only one conceptual/perceptual form viable for the sun (or fire/flashlight etc.)

from the sun to an object:

- (3) a. The sun is shining into the cave / onto the back wall of the cave.
b. The light is shining from the sun into the cave / onto the back wall of the cave.

*from an object onto the sun

(4) *The light is shining from my hand onto the sun.

*from some third location:

(5) *The light shone out onto the sun and my hand from a point between us.

*not moving but stationary:

(6) *The light hung between the sun and my hand.

2.3 shadow paths

the shadow of an object moves from that object to the silhouette on a surface

- (7) a. The tree threw its shadow down into / across the valley.
b. The pillar cast / projected a shadow onto / against the wall.
c. The pillar's shadow fell onto / against the wall.

2.4 sensory paths

a sensory emanation moves in one direction or the other between an Experiencer and an Experienced:

Experiencer as Source:

a Probe emerges from the Experiencer, moves along a straight line, and impinges on the Experienced

Experienced as Source:

a Stimulus emanates from the Experienced, moves along a straight line, and impinges on the Experiencer

2.4.1 the Experiencer is non-agentive -- permits both fictive directions

A. the verb is lexicalized to take the Experiencer as subject

- (8) a. I can hear/smell him all the way from where I'm standing.
 b. I can hear/smell him all the way from where he's standing.
- (9) a. We can be seen by the enemy from where they're positioned.
 b. We can be seen by the enemy from where we're standing.

B. the verb is lexicalized to take the Experienced as subject

- (10) a. Even a casual passer-by can see the old wallpaper through the paint.
 b. The old wallpaper shows through the paint even to a casual passer-by.

2.4.2 the Experiencer is agentive -- permits only Experiencer as Source

- (11) a. I looked into / toward / past / away from the valley.
 b. *I looked out of the valley (into my eyes). <where I am located outside the valley>

2.4.3 lateral motion of the sensory emanation from an agentive Experiencer

- (12) I slowly looked toward the door. / around the room. / away from the window.

lateral motion followed by axial motion of the line of sight

- (13) I slowly looked down into the well.

2.5 communication paths (= the "conduit metaphor") [added since the Talmy (2000) chapter]

a Message (as Figure) moves through space from an Informer (as Source) to an Informee (as Goal)

2.5.1 basic constructions with Informer / Informee as subject

- (14) Informer as subject
 a. I shouted the news down into the mine shaft to the workers below.
 b. She whispered (the answer) to him / into his ear.
 c. He smiled / nodded (his agreement) to them.

- (15) Informee as subject: I heard the bad news from her.

2.5.2 the fictively moving Figure is a Message, not a Stimulus

the Informee is the recipient of an intellectual Message for interpretation,
 not the Experiencer of a perceptual Stimulus

- (16) a. Figure = (intellectual) Message
 He told a bit of news to her. / She heard a bit of news from him.
 b. Figure = (perceptual) Stimulus
 *He told a sneeze to her. / *She heard a sneeze from him.

2.5.3 deviations from the prototype

a sentient Informee may be lacking:

- (17) I shouted the news down into the mine shaft, but no one was alive to hear it.

a sentient Informer may be lacking:

- (18) a. His movements signaled / shouted / telegraphed his intentions to me.
 b. The condition of the tree bark told / informed me which pest had attacked it.

2.5.4 the direction of the fictive motion is only from Informer to Informee, not the reverse

- (19) a. He imparted the information to me. b. *I interpreted the information to/into him.

cf. I read additional meaning into his words.

-- which only involves content that the Informer did not intend in his Message

3. A Unifying Principle and an Explanatory Factor for Emanation Types

3.1 The Principle that Determines the Source of Emanation

= the "active-determinative principle" -- for fictive emanation between two objects

The object that is taken to be the more active or determinative of the two is conceptualized as the Source of the emanation.

the sun is brighter than one's hand, thus is more active,
 hence it is the Source of radiation

an Agent is more active than an inanimate object,

hence an agentive Experiencer is the Source of sensory emanation

a pole determines its shadow (if you move the pole, the shadow moves, but not vice versa),
 hence it is the Source of a shadow path

either a probe or a Stimulus can be conceptualized as the more active,

hence, either can be the Source of a non-agentive sensory path

But the problem then is: what factors determine a conceptualization of activeness

3.2 The Possible Basis of Fictive Emanation and its Types

= an individual's experience of his/her own agency in the course of development

one's agency is both active and determinative,

and one's body is the source point of motion leading to distal effects

by this "Agent - distal object pattern",

An Agent that intends to affect a distal object must either move to it with her/his whole body,

reach to it with a body part, or cause (as by throwing) some intermediary object to move to it.

The model-relevant characteristics of this form of agency:

the determining event, the act of intention, takes place at the initial locus of the Agent, and the ensuing activity that finally affects the distal object progresses through space from that initial locus to the object

4. The Relation of Emanation in Language to Counterparts in Other Cognitive Systems

involves: "the Overlapping Systems Model of Cognitive Organization"

examples of probable cognitive systems:

language, perception (visual, kinesthetic, etc.), reasoning, memory, anticipatory projection, affect, cultural structure, motor control, attention

provisional finding: each cognitive system has some structural properties that
 a) are uniquely its own
 b) it shares with one or a few other cognitive systems
 c) it has in common with all other cognitive systems

4.1 Fictive Emanation and Folk Iconography

fictive representations, normally only sensed with low palpability in perception, can be made explicit, as with stick-figure drawings / wire sculptures, etc. in particular, fictive emanation can be made explicit in folk iconography

agentive sensory paths -- from Experiencer to Experienced:
 Superman's X-ray vision going from his eyes out to target object

demonstrative paths -- emanation from point-type front of linear object:
 cartoon/movie depiction of sorcerer directing force beams from fingertips

radiation paths:
 when sketching the sun, one draws the lines that represent its rays outward from center

mapping of Agent - distal object model onto radiation paths:
 when sketching the sun, depicting a face on it

4.2 The Relation of Fictive Emanation to Anthropological Phenomena

4.2.1 in Pascal Boyer's "ghost physics" -- the properties of spirits in belief systems across cultures --
 spirits break only a few everyday physical laws, e.g.: invisible / pass through walls

a demonstrative path is parallel: invisible and passes through walls

4.2.2 concept of "evil eye":

ill feeling transmitted from one person's eyes, along line of sight, into other person

sensory path of the agentive visual type is parallel

4.2.3 concepts of magical influence, power, fields of life force, mana emanating from entities

parallel the fictive emanations of linguistic construals:

both types: invisible and intangible; (generated and) emitted by some entity;
 propagating in one or more directions away from that entity;
 then contacting a second distal entity which it may affect

4.3 Fictive Emanation and Perception

Research on perception of emanation is so far insufficient. It should, e.g., test if:

a subject viewing an object with a front (e.g., an arrow) concretely sees only that object,

or also senses at a low level of palpability an intangible line emanating from its front

NB: in the next five sections on further categories of fictive motion
factive-motion counterparts of the fictive motion examples are shown in brackets

5. pattern paths

the fictive conceptualization of some configuration as moving through space

(20) As I painted the ceiling, (a line of) paint spots slowly progressed across the floor.
[cf. As I painted the ceiling, (a line of) ants slowly progressed across the floor.]

fictive emanation involved no factive motion of any object, and so needed the active-determinative principle
to determine the direction of fictive motion

a pattern path does require the motion of some object in its context,
and this determines the direction of the fictive motion (not the active-determinative principle)

perceptual parallel: "apparent motion", e.g., row of light bulbs flashing in succession
factive percept: stationary row of bulbs + periodic flashing of a bulb at different locations
fictive percept: a single light progressing along the row of bulbs

6. frame-relative motion

6.1 where, factively, the observer is moving and the observed is stationary

(21)

A. *global frame: fictive motion absent*

I rode along in the car and looked at the scenery we were passing through.

B. *local frame: fictive motion present*

I sat in the car and watched the scenery rush past me.

[cf. I sat in the movie-set car and watched the backdrop scenery rush past me.]

C. *shift in mid-reference from global to local frame, and from factive to fictive motion*

I was walking through the woods and this branch that was sticking out hit me.

[cf. I was walking through the woods and this falling pine cone hit me.]

D. *lacking: part global - part local frame with part factive - part fictive motion*

*The scenery and I rushed past each other.

[cf. The truck driver and I rushed past each other.]

6.2 where, factively, the observer is stationary and the observed is moving

(22)

A. *global frame: fictive motion absent*

a. The stream flows past my house.

b. As I sat in the stream, its water rushed past me.

B. *local frame: blocked attempt at fictive motion*

a. *My house advances alongside the stream.

b. *As I sat in the stream, I rushed through its water.

6.3 an account for why a moving observer can be fictively stationary, but not vice versa

proposal: stationariness is basic for an observer

hence, a moving observer can be conceptually reframed as stationary, i.e., put into that basic state
but an already stationary observer cannot be conceptually removed from that basic state

6.4 developmental account for why stationariness should be basic

a carried infant experiences translational optic flow

long before it can associate this with its own agentive forward locomotion

likewise, a spun infant experiences the transverse optic flow of extended rotation

long before it can spin itself around, hence, fictive reframing should be easy:

- (23) a. As our space shuttle turned, we watched the heavens spin around us,
b. I rode on the carousel and watched the world go round.

but an infant does have immediate agentive control over the transverse optic flow of small arcs
via eye/head shifts, hence, fictive reframing for arcs should be difficult:

- (24) a. As I quickly turned my head, I looked over all the room's decorations.
b. *?As I quickly turned my head, the room's decorations sped by in front of me.

6.5 perceptual parallels

"motion after-effect" as for a subject who has been spun about and stopped,
and perceives the surroundings as spinning
also, cf. the "rod and frame" genre of experiments

7. advent paths: site arrival

depiction of a stationary object's location in terms of its arrival at the site it occupies.
the stationary state of the object is factive; its depicted motion is fictive

(25)

A. *with active verb form*

- a. The palm trees clustered together around the oasis.
[cf: The children quickly clustered together around the ice cream truck.]
b. The beam leans / tilts away from the wall.
[cf: The loose beam gradually leaned / tilted away from the wall.]

B. *with passive verb form*

- a. Termite mounds are scattered / strewn / spread / distributed all over the plain.
[cf. Gopher traps were scattered / strewn / spread / distributed all over the plain by a trapper.]

7.1 perceptual parallels

Pentland (1986): perception of an articulated object in terms of a process in which
a basic portion of the object has the remaining portions moved into attachment with it.

e.g., the perception of a clay human figurine as a torso to which the limbs and head have been affixed.

Leyton (1992): perception of an arbitrary curved surface as a deformed version of a simple surface
e.g., a smooth closed surface as the deformation of a sphere that has undergone forces of protrusion, indentation, squashing, resistance

Gestalt psychology: perception of a form as the result of some process of deformation applied to an unseen basic form
e.g., the perception of a Pac-Man-shaped figure as a circle with a wedge-shaped piece removed from it

8. access paths

depiction of a stationary object's location in terms of a path
that some other entity might follow to the point of encounter with the object.

though not specified, the fictively moving entity is generally conceived as a person,
some body-part of a person, or the focus of one's attention,

(26)

- a. The bakery is across the street from the bank.
[cf. The ball rolled across the street from the bank.]
- b. The vacuum cleaner is down around behind the clothes hamper.
[cf. I extended my arm down around behind the clothes hamper.]
- c. The cloud is 1,000 feet up from the ground.
[cf. The balloon rose 1,000 feet up from the ground.]

perceptual parallel? consider a "plus" with an "A" at the top and a "B" at the left
will a subject sense with low palpability a path from A to B, say, along the lines of the plus?

9. coextension paths

depiction of the form, orientation, or location of a spatially extended object
in terms of a path over the object's extent

(27)

- a. The fence goes / zig-zags / descends from the plateau to the valley.
[cf. I went / zig-zagged / descended from the plateau to the valley.]
- b. The field spreads out in all directions from the granary.
[cf: The oil spread out in all directions from where it spilled.]
- c. The soil reddens toward the east.
[cf: (1) The soil gradually reddened at this spot due to oxidation.
(2) The weather front advanced toward the east.]

perceptual parallel?: consider a "plus". Will a subject sense with low palpability
the succession of a stroke down the vertical bar and one across the horizontal bar?

10. "Ception": Generalizing over Perception and Conception

ception: a framework that encompasses factive/fictive visual representations as an
analog to factive/fictive linguistic representations

ception = union of perception and conception; advantages:

- avoids problem in psychology of where to bound / subdivide perception on a principled basis
- allows one to observe gradient parameters that span the whole of the new larger domain
- allows the discrete perception/conception dichotomy to be reintroduced as a gradient

10.1 palpability-related parameters

(1) The parameter of **palpability** is a gradient at the high end of which an entity is experienced as being concrete, manifest, explicit, tangible, and palpable. At the low end, an entity is experienced as being abstract, unmanifest, implicit, intangible, and impalpable.

(2) The parameter of **clarity** is a gradient at the high end of which an entity is experienced as being clear, distinct, and definite. At the low end, an entity is experienced as being vague, indistinct, indefinite, or murky.

(3) The parameter of **intensity** is a gradient in the upper region of which an entity is experienced as being intense or vivid. At the low end, an entity is experienced as being faint or dull.

(4) The **ostension** of an entity is our term for the overt substantive attributes that the entity has relative to any particular sensory modality. In the visual modality, the ostension of an entity includes its "appearance" and motion -- thus, more specifically, including its form, coloration, texturing, and pattern of movements. In the auditory modality, ostension amounts to an entity's overt sound qualities, and in the taste modality, its flavors. As a gradient, the parameter of ostension comprises the degree to which an entity is experienced as having such overt substantive attributes.

(5) The parameter of **objectivity** is a gradient at the high end of which an entity is experienced as being real, as having autonomous physical existence, and as having its own intrinsic characteristics. Such an entity is further experienced as being "out there", i.e., as external to oneself -- specifically, to one's mind, if not also one's body. At the low end of the gradient, the entity is experienced as being subjective, a cognitive construct, a product of one's own mental activity.

(6) The gradient parameter of **localizability** is the degree to which one experiences an entity as having a specific location relative to oneself and to comparable surrounding entities within some spatial reference frame. At the high end of the gradient, one's experience is that the entity does have a location, and that this location occupies only a delimited portion of the whole spatial field, can be determined, and is in fact known. At mid-range levels of the gradient, one may experience the entity as having a location but as being unable to determine it. At the low end of the gradient, one can have the experience that the concept of location does not even apply to the ceived entity.

(7) The gradient parameter of **identifiability** is the degree to which one has the experience of recognizing the categorial or individual identity of an entity. At the high end of the gradient, one's experience is that one recognizes the ceived entity, that one can assign it to a familiar category or equate it with a familiar unique individual, and that it thus has a known identity. Progressing down the gradient, the components of this experience diminish until they are all absent at the low end.

(8) The **content/structure** parameter pertains to whether an entity is assessed for its content as

against its structure. At the content end of this parameter -- which correlates with the high end of other parameters -- the assessments pertain to the substantive makeup of an entity. At the structure end of the parameter -- which correlates with the low end of other parameters -- the assessments pertain to the schematic delineations of an entity. While the content end deals with the "bulk" form of an entity, the structural end reduces or "boils down" and regularizes this form to its abstracted or idealized lineaments. A form can be a simplex entity composed of parts or a complex entity containing smaller entities. Either way, when such a form is considered overall in its entirety, the content end can provide the comprehensive summary or Gestalt of the form's character. On the other hand, the structure end can reveal the global framework, pattern, or network of connections that binds the components of the form together and permits their integration into a unity.

(9) The "type of geometry" parameter involves the geometric characterization imputed to an entity, together with the degree of its precision and absoluteness. At the high end of this parameter, the assessments pertain to the content of an entity and are (amenable to being) geometrically Euclidean, metrically quantitative, precise as to magnitude, form, movements, etc., and absolute. At the low end of the parameter, the assessments pertain to the structure of an entity, and are (limited to being) geometrically topological or topology-like, qualitative or approximative, schematic, and relational or relativistic.

(10) Along the gradient parameter of **accessibility to consciousness**, an entity is accessible to consciousness everywhere but at the lowest end. At the high end of the parameter, the entity is in the center of consciousness or in the foreground of attention. At a lower level, the entity is in the periphery of consciousness or in the background of attention. Still lower, the entity is currently not in consciousness or attention, but could readily become so. At the lowest end, the entity is regularly inaccessible to consciousness.

(11) The parameter of **certainty** is a gradient at the high end of which one has the experience of certainty about the occurrence and attributes of an entity. At the low end, one experiences uncertainty about the entity -- or, more actively, one experiences doubt about it.

(12) What we will dub the parameter of **actionability** is a gradient at the high end of which one feels able to direct oneself agentively with respect to an entity -- e.g., to inspect or manipulate the entity. At the low end, one feels capable only of receptive experience of the entity.

(13) The gradient parameter of **stimulus dependence** is the degree to which a particular kind of experience of an entity requires current on-line sensory stimulation in order to occur. At the high end, stimuli must be present for the experience to occur. In the mid-range of the gradient, the experience can be evoked in conjunction with the impingement of stimuli, but it can also occur in their absence. At the low end, the experience does not require, or has no relation to, sensory stimulation for its occurrence.

10.2 examples at different points along the gradients

10.2.1 at the fully concrete level of palpability -- and at the high end of most other parameters

examples of entities experienced at the concrete level of palpability include:

most of the manifest contents of our everyday visual world, e.g., an apple or a street scene.

10.2.2 at the semi-concrete level of palpability -- and at the semi-high end of most other

parameters

examples: after-image, artificial scotoma, Hermann grid spots, phosphenes

10.2.3 at the semi-abstract level of palpability -- and at the semi-low end of most other parameters

types and examples:

- a. the sensing of object structure -- e.g.,:
the stick-figure skeletal structure of a human; the "envelope/interior" structure of a vase/dumpster
- b. the sensing of reference frames -- e.g.,:
the grid of compass directions amidst surrounding scenery; a rectilinear vs. radial reference frame
- c. the Sensing of Structural History and Future -- e.g.,:
a tilted picture frame; a dent in a fender
- d. the sensing of projected paths --e.g.,:
the upcoming trajectory of a ball seen sailing through the air
- e. the sensing of force dynamics -- e.g.,:
a concrete slab leaning against a rickety shed; at the cusps of a "bouncing" dot

10.2.4 at the fully abstract level of palpability -- and at the low end of most other parameters

examples: the awareness of relationships among concepts within one's knowledge representation; the experience of implications between sets of concepts, and the formation of inferences; assessments of veridicality; assessments of change occurring over the long term; experiences of social influence (such as permissions and requirements, expectations and pressures); a wide range of affective states; "propositional attitudes" (such as wish and intention).

11. the Relation of Metaphor to Fictivity

correspondences:

target domain: factive representation, taken as more veridical (e.g., "love")

source domain: fictive representation, taken as less veridical (e.g., "a journey")

thus, a Lakoff/Jonson metaphor formula is actually a cover term for two formulations, e.g.,:

factive: love is not a journey / fictive: love is a journey

fictivity theory puts this into relief: the crucial characteristic that metaphoricity depends on is

the fact that the speaker / hearer has somewhere within her cognition a belief about the target domain contrary to her cognitive representation of what is being stated about it, and has somewhere in her cognition an understanding of the discrepancy between these two representations

but metaphor theory and its terms do not now readily extend to perception.

thus, by metaphor theory, the Gestalt phenomenon of "closure" would be a metaphor

-- not an idea easy for psychologists to accept

whereas fictivity theory covers perceptual discrepancies equally with linguistic ones

thus, consider a subject viewing a gapped circle

fictivity theory: one sees a factive representation of a "C" shape, taken as veridical,
 and senses a fictive representation of an "O" shape, taken as less veridical,
 perhaps with an experience of some discrepancy
 metaphor theory: a source domain of continuity is mapped onto a target domain of discontinuity
 hence, closure is a metaphor of continuity

12. a Cognitive Bias toward Dynamism

first, note: fictive stationariness exists beside fictive motion
 already seen for observer in frame-relative motion ; also in:
 I went around the tree. / My path was a circle with the tree at its center.
 in perception: a waterfall
 the physical material is factively moving, its configuration is stationary.

language exhibits a bias toward conceptual dynamism over conceptual staticism:

fictive motion predominates over fictive stationariness, in two ways:

1. expressions that manifest fictive motion far outnumber ones that manifest fictive stationariness
2. even stationary phenomena are often less representable as factively stationary than as fictively moving

- (28) a. ??The wells' depths form a gradient that correlates with their locations on the road.
 b. The wells get deeper the further down the road they are.

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