

*Perceptual and Cognitive Processes in
Polysemy*

- Traditional definitions (e.g., Lyons 1977:550) have lexical ambiguity (or **homonymy**) as involving two lexemes, **polysemy** a single lexeme with different distinct senses, and **vagueness** a lexeme with a single but nonspecific meaning.
- Polysemy is thus a sort of halfway point between ambiguity and vagueness (Tuggy 1993, Deane 1988).

- Basic assumption: the various senses of a polysemous word are interrelated in some way (Panman 1982 and Williams 1992, *inter alia*)
- What are the mechanisms that underlie the variation?
- If the senses are related in principled ways, can we posit one of the senses as core?

- Many recent cognitively oriented approaches to polysemy have concerned themselves with polysemous words as network-like categories with many interrelated senses (e.g. Taylor 1995, Langacker 1988, Tuggy 1988, Gries 2006).
- Networks allow both fine-grained semantic distinctions and more general, schematic meanings which capture the commonality among groups of specific meanings.

The Networks for *Run* (Langacker 1988, Tuggy 1988)

- The **prototypical** meaning of *run* is the notion of a human running (also very salient is the notion of an animal running):
 - Langacker: RAPID 2-LEGGED LOCOMOTION
(person)
RAPID 4-LEGGED LOCOMOTION
(animal)
 - Tuggy: (human) RUN
(animal) RUN

- The two meanings (human RUN + animal RUN) are subsumed under a meaning which **neutralizes** the distinctions between them:
 - Langacker:
RAPID n-LEGGED LOCOMOTION
 - Tuggy:
(animate thing) RUN (cyclic limb motion causing rapid linear motion)

- The schema neutralizing animal and human running is a **sub-case** of schemas involving:

Langacker: rapid mechanical motion (*engine runs*)
rapid fluid motion (*water runs*)

Tuggy: cyclic motion (*motor runs*)
flowing (*water runs*)
(rapid) linear motion (*river runs*)

- **Gries (2006):** the prototypical sense of *run* is 'fast pedestrian motion':
 - prototypical sense is the most frequent sense
 - it is "formally least constrained" - it exhibits most variation across all formal and semantic characteristics (e.g., *run* occurs in the highest number of differently headed prepositional phrases).
- **Williams (1992):**
 - a lexeme's prototypical sense is its most salient one
 - salience may be characterized in terms of accessibility

- When used to describe physical motion, the various meanings of *run* and *walk* may be posited against the verbs' basic meanings.
- Basic meanings: starting points from which other meanings are derived (Pustejovsky 1995, among others).
- Connections between the various meanings of the verbs *run* and *walk* are underlain by an interplay of perceptual and cognitive operations.
- Features differentiating between the various meanings of *run* and *walk* are based not only on 'simple' perception but are underlain by more complicated mechanisms, involving conceptualizations at a higher level of abstraction.

The Role of the Scalarity of Speed in Establishing the Contrast between *Run* and *Walk*

- *run*: a fast movement, *walk*: a slow movement (e.g., Fellbaum 1990, Levin and Rappaport Hovav 1992, Matsumoto 1996, Nida 1997, Taylor 1996)
- also Langacker (1988) and Tuggy (1988)
- speed is the most salient feature: it is the first feature that “comes to mind” (Williams 1992:212)
- *run* and *walk*: a natural antonymous pair (Fellbaum 1990: direct antonyms)
- Miller and Johnson-Laird (1976): distinction between *run* and *walk* is based on different manners of movement

Speed as the Focal Component of Meaning

- speed differentiates between *run* and *walk* when they are used in their basic, self-agentive locomotion senses (*He walked, He ran*)
- varying degrees of the ‘intensity of motion’: *He did not walk, he almost ran.*
- ‘walking’: represents the background against which ‘running’ receives its value:
He did not run, he (merely) walked fast.
He ran and then slowed down to a walk.

- *He almost ran.* x *He almost walked:* *almost* does not express the degree to which walking deviates from the norm:

And the clouds came down, and we lost the path, and we almost walked over the top of a thousand-metre cliff, and /.../. (BNC)

“Hello my babee,” he chirped, as he almost walked into Yanto. “Quiet in there tonight,” and jerked his bald head /.../.

- *walk* lacks a verbal counterpart encoding a movement whose kinetic properties might be described as ‘verging on the physical pattern of motion as involved in walking’
- *walk* represents the kinetic norm against which the norm valid for running is established
- the scalar triad: *walk*, *run* and *fly*

The Markedly Contrastive Status of *Run* and *Walk*

- The verbs are stored in the lexicon as concrete realizations of a motion which may be described as ‘a basic, namely bipedal, type of self-agentive locomotion’.
- This type of motion involves the scalarity of its execution (this observation needs psycholinguistic verification – but cf.: *The snake ran under a rock*).

Speed as a Factor Licensing the Evaluative Use of *Run*

- the verb in its more generalized sense loses reference to the specific position of feet and profiles a relatively high speed ('semantic bleaching')
- evaluative contexts: *Why don't you run downtown and buy a new pair of shoes?* or *She ran to the neighbours for help*

The Evaluative Use of Walk

The relative backgrounding of the verb's reference to the specific type of motion is a signal of the verb's evaluative use:

“...listen, I want to talk to you but this is not the place.”

“What? Am I embarrassing you?”

“No, but you walked yourself into a lesbian political meeting.”

Helen paused, looking around, realizing the café was filled with women.

(<http://gaydaze.com/jun97/fran/f70604.htm>)

The verb *run* may weaken its ties with its basic sense to such a degree that it may encode speed only:

/.../ I would wake in the mornings wondering if this new day would bring a new poem from you, a new smile as you **ran dancing** towards me on your boxer's turned-in toes. (BNC)

Walk cannot be used in such constructions, i.e. it cannot combine with path verbs.

The Derived Status of Speed

- Speed follows from the concrete kinetic modality of the motion (one can walk/run quickly or slowly) - speed has a secondary status (Kudrnáčová 2005).
- The verbs *dash, dart, shoot, whisk, speed, hurtle* or *zoom*: speed is a non-derived component of meaning, pertaining to the very nature of motion as ‘progression in space over time’. In these verbs, speed expresses a property of temporality that converts space into a path, i.e. that converts a static stretch of space into a dynamic one (cf. Kudrnáčová 2008).

Semantic Components Licensing the Use of *Run* in Coercive Scenarios

- transitive causative constructions expressing caused motion with patientive causees
- they encode situations that involve a marked imbalance of their force-dynamic schema

(1) John ran her to the kitchen. John ran him out of the door

(2) John walked her to the kitchen.

- transmission of coercive force from the causer to the causee

- *run* in coercive caused motion situations loosens, to a certain degree, its ties with its basic, very specific type of meaning
- increase in the verb's vagueness functions as an overt signal of the force-dynamic imbalance
- if the force-dynamic schema is more or less balanced, the verb lexicalizes the type of motion carried out by the causee:

The trainer ran the athletes to the other end of the track.

Factors that License the Coercive Use of *Run*

- a relatively high speed + a relatively high energy output
- the conceptual link between speed and force (mental and/or physical pressure) is underlain by a purely physical link between a relatively high speed of motion and force (in the sense of 'physical effort')

Coercive Scenarios Continued

- force pertains to the mental sphere and realizes itself in the physical sphere in the inducement of the causee's motion
 - speed thus cannot have a relative value:
 - * *John slowly ran her to the bathroom.*
- (speed does not have a derived status, it does not follow from the kinetic modality of the motion encoded in the verb)

Kinetic Quantization as the Key Factor

Differentiating between *Run* and *Walk*

- The extensive semantic applicability of *run*: what enables us to use *run* to encode movements that crucially deviate from the basic kinetic pattern?
- The extensive applicability of *run* and the restricted applicability of *walk* cannot be explained by appealing to the central role of speed.
 - (1) *It is down these channels that the salmon run, making for the sea whilst trying to /.../. (BNC)*
 - (2) *She got down on the floor and ran her arm under the bookcase. Again, nothing. (BNC)*
 - (3) *Absent-mindedly, Jackie licked his own fingers and ran them round the plate by the bed, picking up the crumbs /.../. (BNC)*
 - (4) *Her eyes ran down the black jacket to where the man's watch was half hidden by a white cuff. (BNC)*

- movements carried out by inanimate entities
(*skis may run parallel*):
- (5) *Before they realised what was happening, the pram began to run down the steep bank, gathering speed at every turn of its wheels. (BNC)*
- (6) */.../ the keel projected from the stern , apparently to make the ship run straighter, although this feature was dispensed with later. (BNC)*
- (7) *Together they pulled back the high door, which despite its rustic appearance, ran smoothly on well-greased and balanced rollers. (BNC)*

Reference to speed fails to explain why *walk*, as the most natural counterpart of *run*, is not used to represent 'slower' variants of these movements:

(8) **He walked her to the kitchen. (meaning 'He forced her to walk to the kitchen')*

(9) **The snake walked into the hole.*

(10) **The tuna are walking.*

(11) **He walked his arm under the bookcase.*

(12) **Her eyes walked over the walls.*

(13) **The pram walked down the bank.*

(14) **The ship walked straight towards the shore.*

- The key factor underlying the marked difference in the semantic applicability of *run* and *walk*: the **character of the segmentation of the movements into individual kinetic quanta**:
- *Walk* presents the movement as broken down into a succession of individual kinetic quanta (each quantum of walking represents a discrete unit because its ‘amount’ is given by the physical contact of one of the feet with the ground).

- *He walked two steps (but not He ran two steps) - each quantum of walking is identifiable and can be given its linguistic expression; cyclicity is thus a mere potential, not an obligatory feature of the verb walk:*

(15) *He floated out of his car as easily as if he were an astronaut walking in space. (BNC)*

(16) *If I put a cup of water on the drill press table with the machine turned on, you could easily see standing vibration waves on the surface of the liquid, at least until the cup “walked” off the edge of the table, it was that bad. Vibration to this degree is common in inexpensive machines.*

(<http://www.metalwebnews.com/howto/drill-press/drill-press.html>)

- The crucial factor that decides on the use of *walk* is **the intermittence of a given movement**, not its speed:

(17) *He walked his fingers over his head.*

(18) *He ran his finger over his lips.*

In *run* **the boundaries between individual quanta are backgrounded** (the movement has a homogeneous character)

The Homogeneous Character of the Movement Represented in *Run* (I)

is the result of two factors:

A) both feet are above the ground at the same time - this loss (albeit temporary) of the physical contact with the ground functions, at a more abstract level, as a factor that backgrounds the intermittence of the physical contact with the ground:

(19) They found that on the pole-vaulter's pillows, the runner was in contact with the surface far longer than on concrete, and that he deflected the pillows noticeably. (BNC)

The Homogeneous Character of the Movement Represented in *Run (II)*

B) The second factor: cyclicity of the movement:
the suppressed segmentation of the
quantization of the movement and its profiled
cyclicity make it impossible to identify 'the
minimum amount' of running:

(20) *"God speed," he cried, and ran a few steps
alongside the departing train to show it wasn't just a
question of out of sight out of mind. (BNC)*

- **Homogeneous + cyclicity of movement** are the reasons why *run* is used to represent movements in which animals that do not have feet and objects moving are in constant contact with the ground or some surface: (*one's eyes may run along the walls, one's fingers may run along the plate, the door may run on rollers, the pram may run down the slope, the skis may run parallel, etc.*).
- The **non-intermittent contact with the medium** in which the movement takes place is also the feature of movements carried out in water (e.g., fish may *run* or ships may *run towards the shore*).

- The conceptualization of the motion as a more or less even, homogeneous succession of kinetic quanta fosters the implication of smoothness, which, in its turn, may foster the reference to speed:
if an object like a ball runs somewhere, “it moves smoothly and quickly over the ground” (*Collins Cobuild English Language Dictionary* 1988:1271).

- **Evidence:**

amble lexicalizes movement executed “at a smooth or easy pace”, “in a leisurely fashion” (*The New Shorter Oxford English Dictionary* 1993:64).

Cruse (1986:108): *quickly* in *Arthur ambled quickly across the lawn* is incongruous or paradoxical.

However:

when smoothness of the movement becomes the focal semantic element, *amble* may designate a quick motion:

(1) *What the Stag has which most modern cars do not is the endearing ability to amble quickly, to lope effortlessly, reeling in the miles without really trying.* (BNC)

Conclusions (I)

- Perception of speed asserts itself with the greatest force in the basic, i.e. 'bipedal self-agentive locomotion' meanings of the two verbs (speed of motion is among those features of movement that are most readily accessible to apprehension and subsequent evaluation).
- The pronounced link between perception and semantic representation may be taken as a further argument in favour of positing the basic types of bipedal self-agentive locomotion as representing the verbs' core meanings.
- Inspired by Jackendoff (2002:358-9), we may say that the basicness of their status is corroborated by a certain degree of their primacy, which is a result of both their bodily anchorage and their strong linkage to perception.

Conclusions (II)

- In the sets of senses discussed above, it is the homogeneousness of the movement (fostering the implication of its speed) and the heterogeneousness of the movement (the intermittence of its progression) that discriminate between *run* and *walk*, respectively.
- These distinct components of meaning have been posited as deriving both from perceptual and from cognitive processes (which are based on conceptualizations at a higher level of abstraction).
- An inquiry into the relatedness of meanings thus provides important information about the nature of cognitive processing (cf. also Deane 1988 and Langacker 1990).

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