

Frame-based constraints on lexical choice in metaphor

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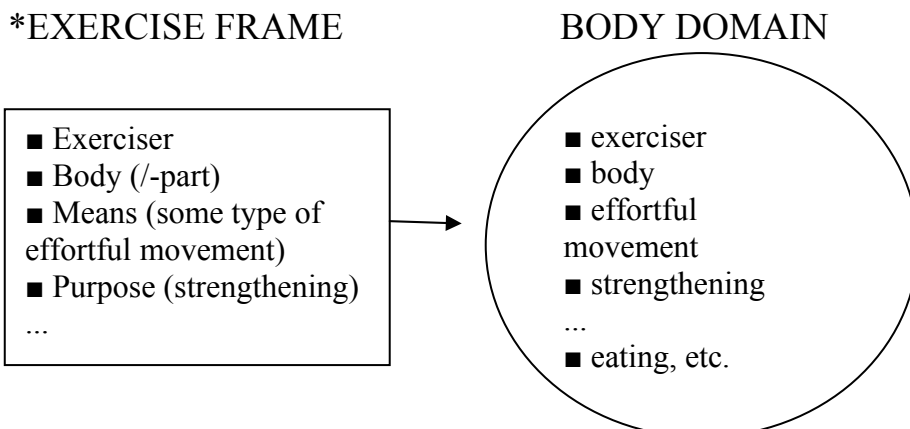
1. Goal of this talk

- To argue that metaphoric extensions are motivated, not arbitrary.
- To present collocational data suggesting that items' nonmetaphoric senses correlate with the metaphoric extensions the items may undergo.
- To suggest that lexical items can only undergo a given metaphoric extension if they evoke a frame with elements that correspond to the relevant metaphoric mappings.

2. Background on frames

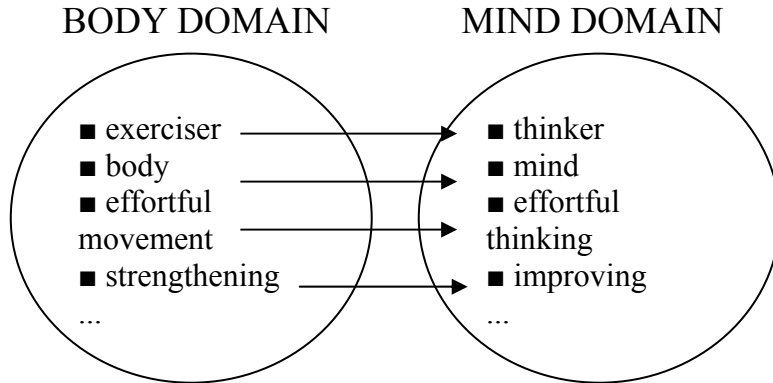
- All open-class lexical items and some closed-class items can evoke frames.
- Frames structure metaphoric domains, most relevantly source domains, as in Figure (1):

Figure 1. The *EXERCISE frame structures the BODY domain



- Frame elements contributing to the structure of a source domain can map to a target domain, as in Figure (2):

Figure 2. THE MIND IS A BODY



3. Methodology

- Data are from collocational searches of the British National Corpus (about 1 million words). The relevant searches are listed in Table (1).
- Collocations with over a thousand hits were counted only above a certain frequency cutoff. Single-occurrence collocations were excluded (except *sunnily V*).
- When the collocated noun or verb permitted multiple senses of the modifier (as in *brilliant one*), I looked at the hits individually.

Table 1. Collocations analyzed

ITEM	NUMBER
bright N	4172
brilliant N	1456
sunny N	587
dark N	4856
dim N	345
clear N	3524
brightly V	323
brilliantly V	100
V brightly	160
V brilliantly	83
clearly V	2689
sunnily V	1

4. HAPPINESS IS LIGHT

Some adjectives referring to light can metaphorically indicate happiness or unhappiness via HAPPINESS IS LIGHT:

- *bright*, as in *looking on the bright side*, *bright greeting* and *bright outlook*.
- *sunny*, as in *sunny smile*, *sunny disposition*, and *sunny nature*.
- *dark*, as in *dark thought*, *dark look*, *dark suspicion* and *dark mood*.

But other adjectives referring to light can't express HAPPINESS IS LIGHT. For example, *brilliant*: # *looking on the brilliant side*, # *brilliant disposition*, # *a brilliant nature*.

Table 2. HAPPINESS IS LIGHT collocations

ITEM	TOTAL "LIGHT"	EXAMPLE	TOTAL "HAPPINESS"	EXAMPLE	PERCENT "HAPPINESS" (of total hits)
bright	2430	bright place	1371	bright disposition	32.9
brightly	382	glowed brightly	101	laughed brightly	20.9
dark	4340	dark room	444	dark thought	9.2
sunny	554	sunny terrace	33	sunny mood	5.6
sunnily	0		1	sunnily began to take requests	100

NOTE: The column TOTAL "LIGHT" includes all nonmetaphoric senses referring to LIGHT or SEEING, regardless of frame evoked.

4.1. LOCATION, LOCATION

The adjectives that can express HAPPINESS IS LIGHT (such as *bright* and *sunny*) typically refer to the level of ambient light in a location, whereas those that can't (like *brilliant*) more often refer to other kinds of light, such as light emanating from a source.

Items like *bright* and *sunny* evoke the LOCATION_OF_LIGHT frame as in Figure (3), which involves a locational Ground element denoted by the modified noun. Items like *brilliant* instead evoke the LIGHT_MOVEMENT frame in Figure (4), which involves light-emission from a source.

Figure 3. LOCATION_OF_LIGHT frame (*sunny, bright, dark*)

- | |
|--|
| <ul style="list-style-type: none"> ■ Light ■ Figure (person or object in location) ■ Ground (location) ■ Degree (brightness) |
|--|

Figure 4. LIGHT_MOVEMENT frame (*brilliant, bright, dim*)

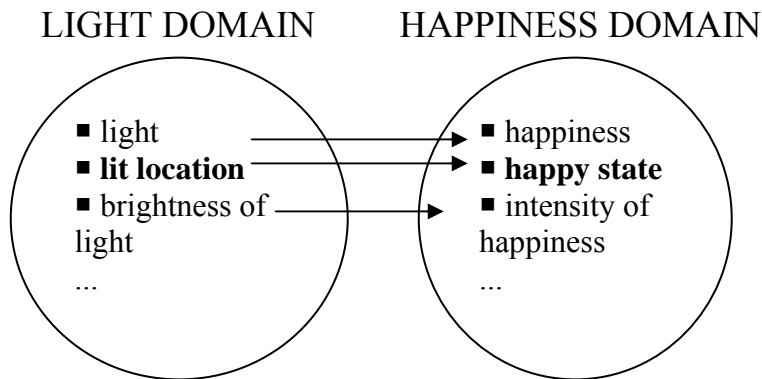
- Emitter (light source)
- Beam (light-emission)
- Degree (brightness)

Differences in frame structure show up in items' nonmetaphoric collocations:

- *Bright* often modifies a noun referring to a location, as in: *bright patch, bright room, or bright place*.
- The adjective *sunny* is used almost exclusively this way when it refers to light, as in *sunny place, sunny terrace, or sunny street*.
- *Dark* also often modifies a location noun, as in *dark room, dark corner, or dark place*.
- However, *brilliant* is hardly ever used in this way: # *brilliant place, # brilliant street*.

HAPPINESS IS LIGHT includes the primary metaphor STATES ARE LOCATIONS in the submapping HAPPY STATES ARE BRIGHT LOCATIONS, so that you can be *in a sunny mood* or *in a dark state of mind*. This mapping is shown in boldface in Figure (5).

Figure 5. HAPPINESS IS LIGHT



As we saw, *brilliant* doesn't evoke a frame with a location element. So its frame is less useful in structuring the LIGHT domain than the LOCATION_OF_LIGHT frame evoked by *bright* and *sunny*. As a result, *brilliant* isn't used to express the metaphor HAPPINESS IS LIGHT.

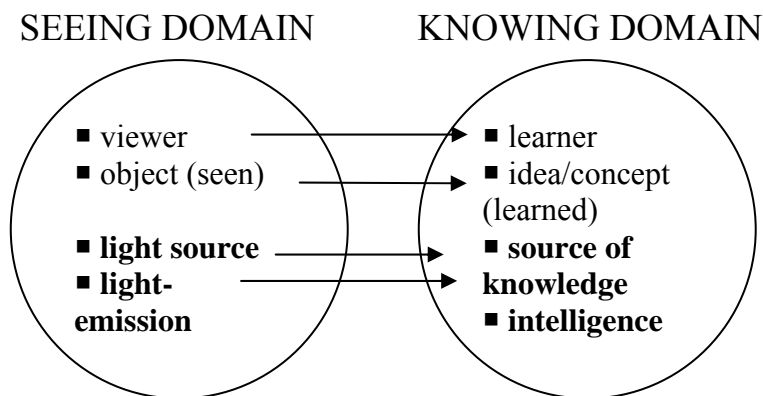
5. KNOWING IS SEEING and INTELLIGENCE IS LIGHT-EMISSION

In fact, *brilliant* is usually used in a different metaphor, KNOWING IS SEEING, as in *brilliant idea*, *brilliant mind*, *brilliant student*, and so forth.

The nonmetaphoric uses of *brilliant* don't evoke LOCATION_OF_LIGHT, but instead mostly refer to light from a LIGHT SOURCE, evoking the LIGHT_MOVEMENT frame we saw in Figure (4).

The metaphoric usages of *brilliant* focus on two mappings of KNOWING IS SEEING, namely SOURCES OF KNOWLEDGE ARE LIGHT SOURCES and INTELLIGENCE IS LIGHT-EMISSION, in boldface in Figure (6).

Figure 6. KNOWING IS SEEING and INTELLIGENCE IS LIGHT-EMISSION



The adjectives' nonmetaphoric collocations (specifically the presence/absence of light-source nouns) predict their compatibility with INTELLIGENCE IS LIGHT-EMISSION:

- Common nonmetaphoric collocations of *brilliant* refer to light sources, as in *brilliant star*, *brilliant flash*, and *brilliant sun*; it therefore frequently expresses INTELLIGENCE IS LIGHT-EMISSION as in *brilliant idea*, *brilliant mind*, *brilliant student*.
- The items *sunny* and *dark* did not modify any light-source nouns; and these items never expressed INTELLIGENCE IS LIGHT-EMISSION.
- There are several different senses of nonmetaphoric *bright*, and at least two of these senses evoke different frames. So while we saw that one sense of *bright* evokes the LOCATION_OF_LIGHT frame, as in *bright room* etc., a second sense of *bright* evokes the LIGHT_MOVEMENT frame, as in *bright fire*, *bright object* and *bright moon*, etc.

Since *bright* can evoke either of the two LIGHT frames, it can be used to express either metaphor, HAPPINESS IS LIGHT or INTELLIGENCE IS LIGHT-EMISSION (in *bright idea, bright child, bright boy, bright pupil*)

Bright is often used to refer to children or students, in contrast to *brilliant*, which is more likely to occur in *brilliant engineer, brilliant scholar* or *brilliant scientist*. A *bright* person isn't as smart as a *brilliant* person, just as a *bright* lamp or star isn't emitting as much light as a *brilliant* one.

- Adverbial *brightly* can't modify a light-source noun, only a process, as in *brightly shining*. It doesn't explicitly evoke a "light-source" frame element and never means "intelligently". Therefore, a phrase like *she spoke brightly* can only mean "she spoke cheerfully" via HAPPINESS IS LIGHT, not "she spoke intelligently" via INTELLIGENCE IS LIGHT-EMISSION.
- *Dim* refers to a feeble light source, as in *dim star, dim torch* or *dim lantern*. It can be used metaphorically to describe a being or idea which demonstrates a feeble intelligence, as in *dimwit, dim bulb* or *dim child*.

Table 3. INTELLIGENCE IS LIGHT-EMISSION collocations

ITEM	TOTAL "LIGHT"	EXAMPLE	TOTAL "INTELLIGENCE"	EXAMPLE	PERCENT "INTELLIGENCE" (of total hits)
brilliantly	40	shine brilliantly	35	reason brilliantly	19.1
brilliant	1070	brilliant sun	179	brilliant idea	12.3
bright	2430	bright jewel	371	bright student	8.9
dim	260	dim star	4	dim child	1.1
brightly	382	glow brightly	0		0

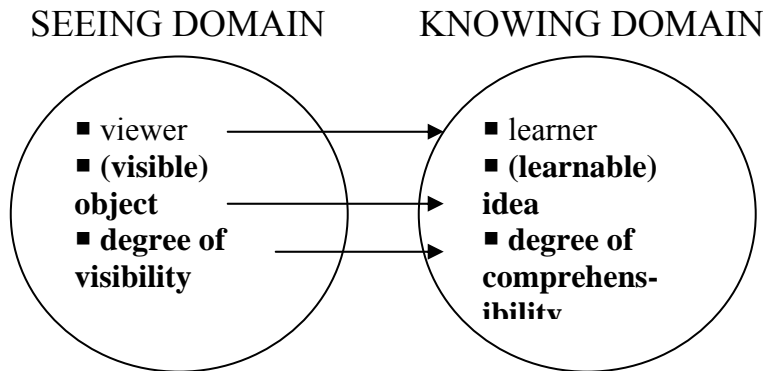
6. KNOWING IS SEEING and COMREHENSIBILITY IS VISIBILITY

Certain items that don't refer to "stupidity" or "intelligence" can have a different metaphoric meaning related to KNOWING IS SEEING:

- A *dim idea* more often means a "vague" idea rather than a "stupid" one.
- Although *dark* can never mean "stupid", it can refer to something that's unknown or mysterious, as in "a dark area in our understanding".
- Most dramatically, the adjective *clear* means "definite" or "certain" 83 percent of the time as in a *clear understanding, clear idea* or a *clear statement*. Adverbial *clearly* means "certainly" or "obviously" about 86 percent of the time.

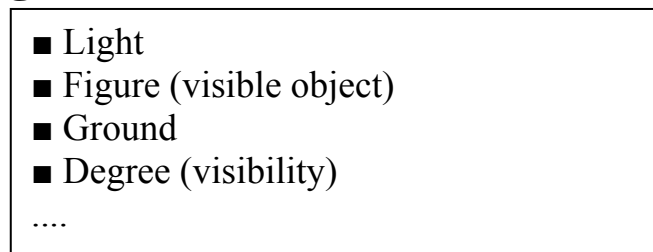
These metaphoric extensions don't focus on the "light-emission" mapping of KNOWING IS SEEING, but instead highlight a different mapping of this metaphor: COMPREHENSIBILITY (of an idea/concept) IS VISIBILITY (of an object) as in Figure (7).

Figure 7. KNOWING IS SEEING and COMPREHENSIBILITY IS VISIBILITY



Certain modifiers evoke the LOCATION_OF_LIGHT frame, in Figure (8) below; but modify nouns which denote the Figure (visible object), not the Ground (location). This determines their compatibility with the mapping COMPREHENSIBILITY IS VISIBILITY.

Figure 8. LOCATION_OF_LIGHT frame (*clear, dim, dark*)



- Nonmetaphoric *dim* can refer to something vaguely or partially seen, as in *dim shape*, *dim figure*, or *dim blur*. This sense of *dim* evokes the LOCATION_OF_LIGHT frame. The "visible object" in this frame can contribute to the structure of the SEEING source domain of KNOWING IS SEEING, permitting metaphoric uses of *dim* as in *dim memory*, *dim idea* or *dim awareness*.
- The "visible" sense of *clear* evokes the LOCATION_OF_LIGHT frame, as in *clear image*, *clear target*, and *clear footprint*. This frame permits a mapping to something that is known or understood, as in *clear idea*, *clear understanding*, *clear statement*, *clear message*, and so forth.

- Nonmetaphoric *dark* can refer to a poorly seen object as in *dark shape, dark figure*. This evokes the LOCATION_OF_LIGHT frame and permits metaphoric uses like *dark area* and the common idiom *dark horse*.

Table 4. COMPREHENSIBILITY IS VISIBILITY collocations

ITEM	TOTAL “LIGHT”	EXAM PLE	TOTAL “COMPREHENS- IBILITY”	EXAMPLE	PERCENT “COMPREHENSIBILITY” (of total hits)
clearly	381	see clearly	2308	reason clearly	85.8
clear	558	clear image	2919	clear statement	82.8
dim	260	dim figure	30	dim idea	8.7
dark	4340	dark shape	51	dark area of understanding	1.1

7. Conclusions

- The frame elements apparent in the nonmetaphoric collocations determine which particular metaphoric extensions can occur.
- Frame evocation, and hence compatibility with particular metaphors or mappings, is sensitive to differences in:
 - lexical items
 - polysemous senses (*bright* “cheerful” vs. “intelligent”)
 - grammatical categories (*bright* vs. *brightly*)
 - the specific elements within a frame denoted by lexical items (*sunny room/mood*, denoting the Ground, vs. *clear image/indication*, denoting the Figure in LOCATION_OF_LIGHT)

References

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