

Keeping an eye on the data: metonymies and their patterns*

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Abstract

This paper outlines a corpus-based method for the analysis of metonymic expressions based on a series of quantitative and qualitative analyses.

While an intuitive approach to metonymy successfully identifies lexical items which have metonymic extensions, intuition alone cannot settle the question how these extensions map onto linguistic form. Consider the expression *set all hearts on fire*, which has been claimed to instantiate the conceptual metonymy THE HEART FOR THE PERSON. Intuitively, it is hard to tell whether the quantifier *all* has something to do with the figurative interpretation. In contrast, a corpus-linguistic analysis brings to light that quantified *heart* (*some hearts, a few hearts, many hearts*) is by default interpreted metonymically. This suggests that the figurative extensions of a given lexical item correlate with distinctive patterns. These patterns are solely determinable through analysis of authentic data.

It turns out that in the investigated data, figurative usages made up more than 40% for all body lexemes; more than 65% of the data under investigation is organized in a limited array of patterns. These patterns expose a close correlation of form and meaning. Thus, collocation is a major clue to the interpretation of metonymic expressions. Furthermore, literal and non-literal examples contrast significantly with respect to neighboring word classes.

I draw four conclusions from this pilot study: Metonymy can be analyzed through corpus analysis of source domain lexis. Metonymic expressions tend to be organized in patterns – these patterns trigger a specific metonymy. Metonymic expressions differ from literal expressions with respect to collocation and with respect to colligation.

1. Introduction

Cognitive semantic investigations into metonymy have been largely based on either introspective data or examples taken from dictionaries (e.g. Lakoff 1987, Gibbs 1994). This paper outlines a corpus-based approach to the analysis of metonymy. Along with the methodology, I present a case study in which the metonymic extensions of the English lexeme *eye* are identified through corpus analysis. The analysis shows that the figurative meanings of this lexeme map onto distinct linguistic *pat-*

* I would like to thank Anatol Stefanowitsch for guiding me to this topic and for many stimulating discussions and Chris Taylor for discussing earlier versions of this paper with me. All remaining errors and inconsistencies are, of course, mine.

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terms (Hunston and Francis 2000, see also Stefanowitsch, this volume). I argue that such a data-driven approach has a number of advantages over more traditional approaches.

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While an intuitive approach to metonymy may identify isolated metonymic extensions of lexical items, intuition alone cannot settle the question how these extensions map onto linguistic form. Consider an example proposed by Niemeier (2000), which instantiates the conceptual metonymy THE HEART FOR THE PERSON.

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(1) set all hearts on fire

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Intuitively, it is hard to tell why example (1) receives the figurative interpretation it does. A corpus analysis will show that *hearts* preceded by a quantifier (*some hearts, a few hearts, many hearts*) are by default interpreted metonymically. The pattern *QUANTIFIER hearts* invariably triggers the conceptual metonymy THE HEART FOR THE PERSON.¹ The data suggest that the figurative extensions of a given lexical item correlate with fixed or semi-fixed patterns. The description of patterns has a long tradition in Corpus Linguistics (Sinclair 1991), however, its application to issues in Cognitive Linguistics is a more recent development.

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Hunston and Francis (2000) define *pattern* as “all words and structures that are regularly associated with a word and contribute to its meaning”. I find this definition conceptually close to the notion of *construction*, as proposed by Goldberg (1996:68):

A construction is [...] a pairing of form with meaning/use such that some aspect of the form or some aspect of the meaning/use is not strictly predictable from the component parts or from other constructions already established to exist in the language.

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Goldberg’s definition is more general, but more precise at the same time. It is more general, because constructions need not be matters of words; they can exist independently of lexical material. It is more precise, because it involves the idea of non-compositionality; the meaning of the construction must be more than the meaning of its component parts. However, Goldberg’s definition does not capture *collocation*, i.e. what

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¹ Note that the metonymy is embedded in the metaphor LOVE IS FIRE (Kövecses 1990:46). I do not propose that (1) is resolved as ‘set everybody on fire’. Rather, the pattern resolves to ‘make everybody fall in love’.

words are regularly associated with a construction.² Hunston and Francis' idea of a pattern is clearly related to frequency. Thus, I find the two definitions to complement and enrich each other with respect to the subject at hand. In accordance with Goldberg, I view patterns as constructions that mean more than their parts; in accordance with Hunston and Francis, I view patterns as frequently co-occurring strings of lexical items.

Several strains of work relate to the present analysis, while differing in their aims. Work in psycholinguistics (Gibbs 1994, Ortony et al. 1978) and work in computational linguistics (Markert and Hahn 2002, Martin, this volume) has focused on the broader linguistic context of figurative expressions. Martin (this volume) finds, for example, that if a conceptual metaphor has been used in previous discourse, it is likely that lexemes of the source domain will be used metaphorically again. Whereas Martin thus analyzes broad contextual effects, the present analysis stresses the importance of the *microcontext* of figurative expressions. By microcontext I mean both *collocation*, the adjacence of certain lexical items, and *colligation*, the adjacence of certain word classes. A similar approach has been adopted in Markert and Nissim (2002), who analyze the domain of *country names*. One of their findings is that the pattern *provide COUNTRY with* triggers the PLACE FOR PEOPLE metonymy by default. By contrast, the pattern *in COUNTRY* is always interpreted literally. In addition to Deignan's corpus research into metaphor (1999, this volume), corpus-based research into metonymy has been carried out by Deignan and Potter (to appear). They report that many figurative usages of body lexis occur in semi-fixed expressions like for example *one's heart goes out to NP*.

On a more general level, the findings of the present analysis are compatible with the basic tenets of *Construction Grammar* (Fillmore 1988, Fillmore et al. 1988, Goldberg 1995, 1996) and *Cognitive Grammar* (Langacker 1987, 1991, 2002). In both frameworks, speakers' knowledge of language is viewed as a large inventory of form–meaning pairs.³ This inventory accommodates everything from morphemes to patterns of argument-structure, like the *ditransitive construction*. In between these two extremes are larger lexical chunks, such as idioms and semi-fixed expressions. These con-

² A framework for the corpus-based analysis of interdependencies between words and constructions is developed in Stefanowitsch and Gries (2003) and Gries and Stefanowitsch (2004).

³ Both Construction Grammar and Cognitive Grammar are thus incompatible with a modular approach to grammar, in which the lexicon is opposed to modules for syntax, morphology, and phonology.

structions are at the center of the present analysis. A considerable share of the investigated data form patterns that mean more than just the meaning of their parts. In these patterns, the lexeme receives its metonymic extension only by virtue of the construction in which it occurs.

These findings support the claim that most figurative usages are identified through pattern analysis, rather than checking of *selection restrictions*. Pragmatic theories of figurative meaning (e.g. Searle 1979) hold that the literal meaning of an utterance is processed first. If selection restrictions are found to be violated or the utterance is inappropriate in some other way, the figurative meaning is processed in a second step. It seems a reasonable hypothesis to assume that highly entrenched patterns give the hearer enough scaffolding to process the figurative meaning directly.

The remainder of this paper is organized as follows. Section two gives a working definition of metonymy and sets up a typology of metonymic relations. Section three lays out the methodology, which will be applied to a case study of the English body lexeme *eye* in section four. Section five discusses implications of the approach and the case study.

2. Metonymy

In accordance with Lakoff and Johnson (1980), I view metonymy as a phenomenon of indirect reference in which a linguistic sign refers not to its default referent R_i , but to another referent R_j .⁴ To set metonymy apart from other kinds of indirect reference such as *metaphor* or *irony*, classical rhetorics defines metonymy as an exchange of names for things that are closely related or belong together. Cognitive Linguistics captures this idea with the term *domain* (Croft 1993). Things that 'belong together' are said to be in the same cognitive domain. People's world knowledge is organized in domains. For example, people have to have knowledge of the domain 'car' to make sense of the following examples:

- (2) I got myself a new *set of wheels*.
- (3) *The Ford* behind me was honking violantly.
- (4) *Ringo* squeezed himself into a tight space.

⁴ Metonymy is not restricted to linguistic signs, though. It is applicable to all kinds of signification processes, be they linguistic, visual, auditory or purely conceptual. See Gibbs (1999).

Items within a domain ‘belong together’ in different ways. In example (2), a part of the car stands for the car as a whole. In example (3), the brand name stands for the driver. In example (4), the name of the driver stands for the car. The different ways of ‘belonging together’ are called *contiguity relations*. A common example is PART FOR WHOLE, but there are many more. In cognitive linguistic terminology, metonymy is an *intra-domain mapping* from R_i to R_j . The referents R_i and R_j belong to the same domain, and thus stand in a contiguity relation.

Several typologies of metonymy (Stern 1931, Lakoff and Johnson 1980, Fass 1997, Kövecses and Radden 1998) present lists of contiguity relations. For the present analysis, I follow Seto (1999) in drawing a distinction between two basic types. The first type covers all contiguity relations between an *entity* and its *parts*. Contiguity relations of this kind will be called *E-Metonymies*. The second type includes contiguity relations that obtain between *categories* and *subcategories*. Such contiguity relations will be called *C-Metonymies*.⁵ In short, E-Metonymies are ‘part-of’ relations whereas C-Metonymies are ‘kind-of’ relations. See Figure 1 for a taxonomy of metonymic relations which are illustrated by examples (5) to (10).

Figure 1. A taxonomy of metonymic relations

	PART FOR WHOLE	E.G. FACE FOR PERSON (5)
E-METONYMY	WHOLE FOR PART	E.G. PLACE FOR INSTITUTION (6)
	PART FOR PART	E.G. OBJECT USED FOR USER (7)
METONYMY		
	SUPER FOR SUB	E.G. GENERIC PERSON FOR SPECIFIC PERSON (8)
C-METONYMY	SUB FOR SUPER	E.G. SPECIFIC BRAND FOR GENERIC PRODUCT (9)
	SUB FOR SUB	E.G. SPECIFIC TIMESPAN FOR OTHER SPECIFIC TIMESPAN (10)

E-Metonymies

- (5) We need some new **faces** around here.
 (6) **Paris** is introducing longer skirts this season.
 (7) **The buses** are on strike.

⁵ Seto (1999) refers to C-Metonymies by the term *synecdoche*. I will not adopt this use.

C-Metonymies

- (8) Now that he's been promoted, he thinks he's really **somebody**.
- (9) Could you give me some **scotch tape**?
- (10) Gimme **a second**.

– Although all E-Metonymies can be subsumed under three general types, the contiguity relations instantiating these types display considerable variety. The most straightforward type replaces an entity with a salient subpart of that entity, as in example (5). Also a complex whole may stand for some aspect of that whole, as in example (6). Example (7) evokes the domain of public transportation. A part of this domain, ‘the buses’, substitutes another, namely ‘the bus drivers’. Such *domain-based E-Metonymies* are also exemplified by PART FOR PART relations like INSTRUMENT FOR ACTIVITY OR CAUSE FOR EFFECT.

By necessity, C-Metonymies fall into three general types.⁶ Relations between categories obtain either between supercategory and subcategory, as in examples (8) and (9), or between subcategories, as in example (10). Here, one shortish timespan stands for another shortish timespan.⁷ The coarse definition of C-Metonymy as a ‘kind-of’ relation presents it as conceptually close to metaphor. C-Metonymies are no metaphors, because the mapping from R_i to R_j takes place within a single domain, never across domain boundaries. Of course there are borderline cases. Consider examples (11) and (12).

- (11) Marcus Judge had **kept an eye on** her finances from the beginning.
- (12) The drug barons work **hand in glove** with the pharmaceutical industry.

In both examples, the phrases in bold face are interpreted figuratively. Both employ ‘kind-of’ relations. *Keep an eye on NP* here means ‘be attentive to NP’, which is a hypernym of ‘to watch NP’. *Hand in glove* here means ‘accordant’, which is a hypernym for the literal interpretation ‘physically fitting’. Despite this convergence, there is one crucial difference. Whereas ‘watching’ and ‘being attentive’ belong to the same domain, ‘physically fitting’ and ‘accordant’ cannot be subsumed under a sin-

⁶ Koch (2001:217) discusses SPECIES-GENUS and SPECIES-SPECIES relations and argues that these cannot be subsumed under PART-WHOLE relations.

⁷ Classical rhetorics would classify example (10) as a case of *litotes*. Within the present framework, both *litotes* and *exaggeration* (e.g.: *This is gonna take ages*) are accommodated as C-Metonymies.

gle domain, because ‘physically fitting’ is concrete and ‘accordant’ is abstract. Thus, example (11) is a C-Metonymy and example (12) is a metaphor. Metaphors can map concrete states and entities onto abstract ones, C-Metonymies cannot do so.

Another issue is *chaining* of metonymies. It has been observed that metonymies stack on top of each other.⁸ A shift in reference from R_i to R_j is pushed further to R_k and beyond. From a diachronic perspective, chaining of metonymies may result in *synchronic polysemy* as well as *diachronic semantic change*. In the former, the intermediate metonymic meanings survive, in the latter, they die out. Consider Figures 2a and 2b, which show two examples from Nerlich and Clarke (2001). Whereas the successive metonymic shifts of *paper* have formed a threefold polysemy, the source sense of *barbecue* has died out.

Figure 2a. Synchronic polysemy

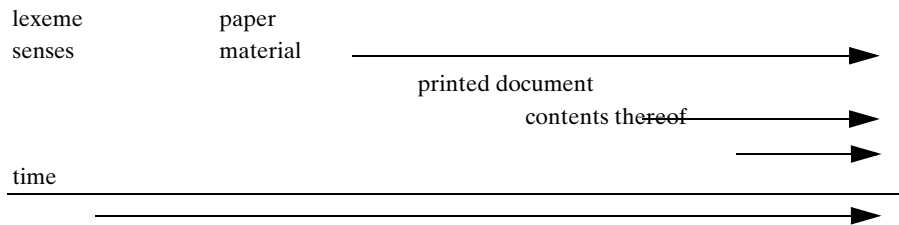
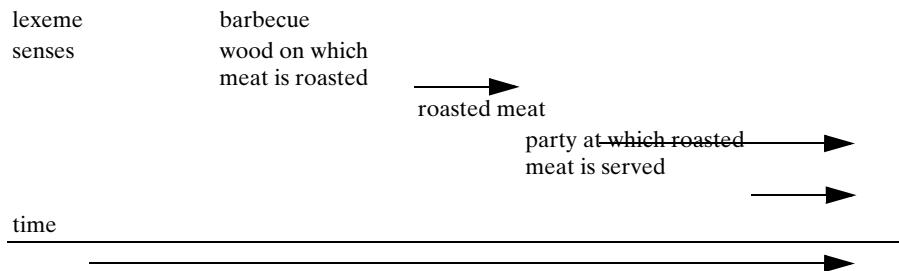


Figure 2b. Diachronic semantic change



Corpus analysis reveals the state of synchronic polysemy at the moment of corpus compilation. Diachronic semantic change can be investigated through analysis of different historical corpora (see e.g. Goossens 1995),

⁸ Reddy (1979) must be given credit to have discovered the phenomenon. Accounts of it are in Warren (1992), Nerlich and Clarke (2001) and Ruiz de Mendoza Ibáñez and Díez Velasco (2002).

but the present analysis is restricted to the exploration of synchronic polysemy, as it draws exclusively upon corpus data from the British National Corpus. However, even the analysis of synchronic data yields some insight into chaining of metonymies. Consider examples (13) and (14).

- (13) I fear probably not, said he, **keeping an eye on** the tape recorder.
 (14) Marcus Judge had **kept an eye on** her finances from the beginning.

Both examples instantiate INSTRUMENT FOR ACTIVITY metonymies, but the targeted activities differ. In example (13), *keep an eye on NP* means ‘watch NP’. In example (14), it means ‘pay attention to NP’. Finances cannot literally be watched. This could lead the researcher to posit two different metonymies, namely EYE FOR WATCHING and EYE FOR ATTENTION. It is more parsimonious to assume a chained metonymy. The first metonymy, EYE FOR WATCHING, is extended by a second metonymy, WATCHING FOR ATTENTION. There are two constraints on positing chained metonymies. The first is that all intermediate steps have to be productive.⁹ That is, expressions of both EYE FOR WATCHING and WATCHING FOR ATTENTION must be found in the corpus to lend credibility to the chained metonymy. The second constraint is that each metonymic link must be motivated by a strong experiential basis (Grady 1997). In the presentation of chained metonymies, the first metonymy will be said to *feed* the second. Thus in example (14), EYE FOR WATCHING feeds WATCHING FOR ATTENTION.

3. Methodology

The basic stance of a corpus-based approach to metonymy is that it puts data before theory. It is assumed that observation of large amounts of authentic data is a viable method for language description (Sinclair 1991). Hence, it is assumed that the metonymic language found in the corpus reflects on the linguistic reality of Present Day English.

The present analysis pursues two major aims. The first aim is to explore the metonymies (e.g. INSTRUMENT FOR ACTIVITY, EYE FOR WATCHING) that are found with the lexeme under investigation. Corpus analysis is not only a means to such a qualitative exploration, it also allows for quantification. The metonymies found with a lexeme can be organized in terms of their frequen-

⁹ Otherwise, the researcher could freely assume chained metonymies with extinct intermediate steps.

cy, which shows the entrenchment of a given metonymy. In sum, the first aim is to analyze the nature and entrenchment of metonymic extensions.

The second major aim is to explore the relation of form and meaning in these metonymic extensions. I will show that contiguity relations tend to map onto distinct patterns. These patterns may be fixed or semi-fixed. To illustrate, example (1), in which *hearts* are interpreted as ‘people’ is an instance of the pattern *QUANTIFIER hearts*. This pattern is semi-fixed, since it only specifies the lexeme *hearts*, while the quantifier may be filled by a range of different lexemes (*some, many, a few*, etc.). An example of a fixed pattern is the pattern *turn a blind eye*, which means ‘to disregard’. This pattern has no unfilled slots. Patterns are identified through the analysis of concordance lines. Two kinds of regularities to the left and right of a word are observed. The first one is *collocation*, the adjacency of certain lexical items. The second one is *colligation*, the adjacency of certain word classes. The contribution of these to the meaning of the whole expression is analyzed.

These two tasks touch on several relevant issues in the current discussion of metonymy. For instance, some conceptual metonymies are conventionalized and highly systematic (e.g. EYE FOR WATCHING) whereas other conceptual metonymies seem rather ad hoc (e.g. COMPLETED ACTIVITY FOR AGENT). Example (15) illustrates the latter.

(15) Never invite two **China trips** to the same dinner party.

A corpus study will show what percentage of metonymic expressions employs conventionalized mappings. It will also reveal what percentage of metonymic expressions is accounted for by distinct patterns. Another consideration is that if metonymic language tends to be organized in patterns, this would corroborate psycholinguistic findings that context is a major clue in disambiguating polysemous lexical items (Gibbs 1994).

The procedure of the corpus analysis is organized into six steps. First, the complete concordance is categorized into literal and non-literal examples. Four corpus-based dictionaries have been used for this task.¹⁰

Second, the non-literal examples are searched for patterns. If a substantial number of concordance lines exhibits patterning, it is investigated whether these examples have not only a similar form, but also a similar meaning. If so, the meaning of the pattern is analyzed in detail, with reference to the conceptual metonymies. Metaphoric mappings are also discussed where they play a role in a metonymic extension.

¹⁰ COBAL, COBUILD, LDCE, OALD, see reference section for exact references.

1 Third, the non-patterning examples are analyzed in the same way. Met-
2 onymic and metaphoric mappings are explored.

3 Fourth, patterning and non-patterning examples are contrasted with
4 respect to the distribution of the extensions found. I discuss whether the
5 non-patterning examples contain extensions that are not found within
any of the patterns.

10 Fifth comes the analysis of colligating word classes. The lexical items
immediately left and right to the search term are categorized according to
word class. This procedure is carried out for both the literal and the figu-
rative concordance. The resulting paradigms are contrasted in order to
determine broad structural differences in the immediate contexts of liter-
al and figurative usages. The distribution is checked for significant differ-
ences of literal and figurative usages with the *Binomial Test*. It is discussed
which patterns cause these significant differences.

15 Sixth, the relative distribution of all figurative extensions is analyzed.

4. Metonymic extensions of eye

20 This section deals with the metonymic extensions regularly associated
with *eye*. The lexeme *eye* has been chosen because body part terms are
known as a rich source of figurative meaning (Goossens 1995, Kövecses
and Szabó 1996, Niemeier 2000). The primary aim is to establish what ex-
25 tensions are found. A secondary aim is to explore the syntactic and lexical
patterns that are associated with the metonymic extensions. To this end,
all usages of *eye* were extracted from a balanced 10 million word sample
from the BNC.¹¹ The sample contains 909 usages of *eye* altogether. 443 of
these (49%) convey a non-literal sense.

4.1. Figurative patterning expressions with eye

The BNC sample contains 22 patterns with *eye*. In some cases there are
subpatterns with minor but distinctive differences.

35 (A) *keep an eye on NP*. The used dictionaries rephrase this pattern as
'watch carefully or attentively'. This definition underdetermines the
meaning of the pattern in two respects.

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40 ¹¹ The files used in the 10 million-word sample are F71-FYP, F98-FRK, G3U-GYY, H00-
HYY, J3M-JYN.

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- (16) I fear probably not, said he, keeping an eye on the tape recorder trying to get ...
 (17) They keep an eye on the youngsters and, with the experience ...
 (18) Marcus Judge had kept an eye on her finances from the beginning.

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First, the examples convey different aspects. Example (16) is durative, (17) is iterative. To *keep an eye on the youngsters* means ‘watching them every now and then’, but not all the time. Second, only 11 out of 54 examples have the NP slot filled by a concrete, observable object. 24 examples have it filled by a person or some other animate. The remaining 19 examples feature abstract entities, which cannot be perceived visually.

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In the examples that include visual perception, the phrase *keep an eye on* maps onto ‘watching’. This instantiates the INSTRUMENT FOR ACTIVITY metonymy EYE FOR WATCHING. In examples like (18), the act of visual perception is only the metonymical source for a more abstract target, namely ‘attention’. This shift is achieved via a C-Metonymy. EYE FOR WATCHING feeds WATCHING FOR ATTENTION and thus the two form a chained metonymy. Watching an entity is one way of being attentive to it. Being attentive to finances involves other and more complex types of perception.

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A subpattern of (A) shows an even greater affinity to abstract NPs. 6 out of 10 examples of *keep a ADJ eye on NP* involve an abstract NP.¹²

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- (19) ... and generally keeping a benign eye on things. In return for the fun ...
 (20) ... to keep an implacably appraising eye on them, the author ...

Another subpattern, *keep POSS eye on NP*, replaces the article with a possessive pronoun. In this pattern, 5 out of 11 examples feature concrete objects, the others feature abstract objects and animates.

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- (21) Take another look. Keep your eye on the paper.
 (22) ... want the jury always to keep their eye on that what really is the issue ...

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(B) *have (got) POSS eye on NP*. No concrete NPs are found with this pattern, which uses another chained metonymy. The first step is the same as

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¹² A question of interest is what the adjectives in this pattern actually modify. The adjectives in question are {appraising, benevolent, benign, careful, clear, close, sharp, wary, watchful}. Whereas some of these semantically modify the target concept ‘attention’, others like *clear*, *sharp* and *watchful* are problem cases. These adjectives seem to modify the source concept ‘eye’ or the attentive ‘agent’.

before. Again the *eye* stands for ‘watching’ something via the EYE FOR WATCHING metonymy. The meaning of the pattern is that the subject ‘wants the NP’. In the E-Metonymy WATCHING FOR WANTING¹³ an activity that is accessible to the observer stands for a non-observable mental state.

(23) The modernizers have got their eye on a bit of the party operation

...

(24) I’ve had my eye on it for a little while. [about a cottage]

(25) Charlie had his eye on Sonia. She was a dark, broad-faced girl ...

The examples feature different kinds of ‘wanting’. Example (23) conveys that the agent wants to ‘do the NP’. In example (24), the agent wants to ‘purchase the NP’. Example (25) conveys ‘sexual interest’ on the part of the agent. Six examples are found in the corpus.

(C) *with an eye on NP*. This pattern displays an ambiguity that corresponds to the stages of the chained metonymies that are at work here. First of all, the pattern denotes ‘attention’ via ‘visual perception’. The metonymic links are analogous to (A). Second, the pattern conveys ‘wanting’ analogous to (B). Two examples of each type occur in the data.

(26) With an eye on a corner sign reading Park Street ...

(27) ... if you’re a policeman on the beat, with an eye on promotion ...

(D) *with an eye to NP*. This pattern means ‘with regard to NP’. The basic E-Metonymy is EYE FOR WATCHING. It feeds the E-Metonymy WATCHING FOR CONCERN.¹⁴ ‘Concern’ as a concept is very close to ‘attention’, but it entails a caring attitude which is absent from ‘attention’. Five examples are found.

(28) ... seems to be designed with an eye to the collective worker ...

A subpattern includes a gerund: *with an eye to V-ing NP* can be rephrased as ‘with the intention of V-ing NP’. The basic E-Metonymy is the same as before. It feeds the E-Metonymy WATCHING FOR INTENDING. Again, a mental state is replaced by the activity of watching. The data contains three examples.

¹³ WATCHING FOR WANTING is a domain-based PART FOR PART metonymy, namely BEHAVIOR FOR MENTAL STATE. This metonymy is often encountered in language about emotions.

(i) Might not St Paul or Thomas Aquinas **raise an eyebrow** at the idea that their views ...

(ii) “Did you know?” She **bit her lip** till it hurt. “Nick did.”

¹⁴ Also WATCHING FOR CONCERN is an instantiation of BEHAVIOR FOR MENTAL STATE.

(29) ... for pleasure but also with an eye to acquiring property ...

(E) *have an (ADJ) eye for NP*. This pattern is ambiguous. It either denotes ‘having interest in NP’ or ‘having good perception of NP’. On the first reading, EYE FOR WATCHING feeds the E-Metonymy WATCHING FOR INTEREST, which again connects a mental state with a contiguous action. There are three examples of this in the data.

(30) ... farmers who had only an eye for renewed state intervention.

On the second reading, *eye* stands for ‘good perception’. The first metonymic link is EYE FOR VISION. In a second step, the interpretation is generalized to ‘good perception’ via a SUB FOR SUPER C-Metonymy. Vision is the most reliable human faculty of perception, which licenses the VISION FOR GOOD PERCEPTION metonymy. Besides the five genuine examples of this pattern, there are two subpatterns. *POSS ADJ eye for NP* and *with an eye for NP* occur in two examples each.

(31) She already had an eye for such things. The furniture was a trifle ...

(32) ... my keen eye for spotting talent, where others see only ...

(33) With an eye for contemporary styling, Verity Lambert agreed ...

(F) *turn a blind eye to NP*. This pattern means that the subject ‘disregards NP’. Most examples have some authority tolerate illegality. Ten examples are found in the data. In contexts where the issue is given, the pattern can be used intransitively. Six examples of *turn a blind eye* are found.

(34) The Waco sheriff habitually turned a blind eye to Koresh’s activities.

(35) The sergeant’ll turn a blind eye.

A possible line of explanation for this idiom is the KNOWING IS SEEING metaphor (Lakoff et al. 1991). Deliberately averting the eyes maps onto ‘self-induced ignorance’. However, I suggest a different analysis. A range of patterns has the *eye* stand for ‘attention’, in pattern (D) *eye* stands for ‘concern’. In this pattern *a blind eye* stands for ‘non-attention’, that is, ‘disregard’. The basic metonymy is EYE FOR WATCHING. It feeds the PART FOR PART E-Metonymy NON-WATCHING FOR DISREGARD. This analysis has the advantage that the ‘focusing of attention’ (or, for that matter, non-attention) actually is a deliberate activity, whereas ‘knowing’ is not. The

motivations for disregarding something are manifold and thus not part of the semantics of the pattern.

(G) *catch POSS eye*. If something catches someone's eye, it makes her or him 'look' at it and, in a second step, 'be attentive to it'. This can be performed by people, but also by inanimate objects. The conceptual metonymy is EYE FOR WATCHING. As the pattern codes 'attention' in a majority of cases, EYE FOR WATCHING regularly feeds WATCHING FOR ATTENTION. 34 matches are found in the data. 19 of them display possessive pronouns, the remaining 15 have full nominals. A subpattern is *catch the eye of NP*. Four examples are found. Two other subpatterns generalize the attraction of the subject, they are *catch the eye* and *eye-catching* respectively. Three and two examples are found in the corpus.

- (36) A detail on the screen had caught his eye.
 (37) ... slowly around the table to catch the eye of those present ...
 (38) ... considerations of what catches the eye and how much it will cost
 ...
 (39) ... crimson flowers which are really eye-catching ...

(H) *in / out of the public eye*. Also this pattern maps the *eye* onto 'attention' via the chained metonymy outlined with patterns (A) and (B). The adjective thus literally modifies 'attention'. The prepositions *in / out of* indicate the relation that applies between some entity and public attention.

- (40) ... pleasures were always in the public eye. And he was ready to exploit ...
 (41) So you wanted to keep out of the public eye, did you?

12 matches are found. Another seven examples, albeit without article and preposition, are found of *Public Eye* denoting a journalistic TV series. This has most probably originated from a pun on *private eye* (see below), since the task of a journalistic serial is to investigate issues of public interest.

(I) *private eye*. This is an idiomatic expression for 'a privately hired detective'. The metonymic motivation, though dead, is straight-forward. *Eye* maps onto 'vision' via the PART FOR PART E-Metonymy EYE FOR VISION.¹⁵ 'Vision' maps onto 'investigation' in a PART FOR WHOLE E-Metonymy.

¹⁵ This E-Metonymy is an instantiation of the more general BODY PART FOR FACULTY.

- (i) Before I could consciously turn **my brain** to the matter, it had started.
 (ii) He has a **very good ear for profit** as well. [about a Ferengi]

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my. Finally, ‘investigation’ maps onto ‘someone who investigates’ via ACTIVITY FOR AGENT. There is just one example in the data, but the expression is well documented in the used dictionaries. 11 matches refer to the satire magazine *Private Eye*. Six more matches refer to the magazine only by *the Eye* with capital E.

- (42) If I was some fucking private eye or something I’d head back out ...
(43) ... to the satirical magazine *Private Eye* – and he was partly right

10
(J) *in POSS mind’s eye*. This pattern means ‘in POSS imagination’ through the EYE FOR VISION metonymy. Even though the mind does not see anything, seeing human beings experience mental imagery as visual perception. 16 examples occur in the data, two more examples replace the possessive pronoun with a definite article.

- 15
(44) ... never seen that scene in your mind’s eye, it may well be ...
(45) ... reconstruct the police post in the mind’s eye, a small building, tin-roofed ...

20
(K) *see eye to eye*. This pattern denotes ‘agreement’. The idiom is based on the metaphor OPINIONS ARE VIEWPOINTS.¹⁶ The item *eye* retains its literal meaning in this pattern, the metaphorical meaning emerges only at the phrasal level. People who *see eye to eye* have complementary viewpoints and hence, metaphorically speaking, complementary opinions. Six matches are found.

- 25
(46) But then those two don’t see eye to eye about anything these days.

30
(L) *N to the eye*. Here, the *eye* stands for ‘the beholder’. The metonymic link is EYE FOR BEHOLDER, which is a case of the more general BODY PART FOR PERSON metonymy. Three instances are found in the corpus.

- (47) They function as a diversion to the eye, and give an air of elegant business ...

35
(M) *ADJ to the eye*. This pattern is similar to (L). The metonymic link is EYE FOR BEHOLDER. Two examples occur in the data.

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¹⁶ OPINIONS ARE VIEWPOINTS is a productive conceptual metaphor.

(i) Try to see it *my way* –

(ii) Art historians Donna R. Barnes and Peter G. Rose present *new perspectives on still life scenes*.

(48) ... a sweet view – sweet to the eye and the mind.

(N) *to the ADJ eye*. The same metonymic link as in (L) and (M) applies. Four examples come up in the corpus.

(49) ... as lanisticola looked, to the discerning eye, quite different ...

(O) *under the eye of NP*. This pattern means ‘under the supervision of NP’. The EYE FOR WATCHING metonymy feeds WATCHING FOR SUPERVISING which instantiates the more general ACT FOR COMPLEX ACT metonymy. ‘Watching’ is a necessary part of ‘supervision’, but ‘advice’ and ‘control’ are of equal importance. In this mapping, an activity that involves mental states is replaced by a salient body part that is involved in the central part of the activity. Six examples occur in the data. One additional example occurs in a context where the NP is given. The ensuing pattern is *under POSS eye*.

(50) ... worked on model ships under the eye of Uncle Philip ...

(P) *the apple of DET/POSS eye*. In the original metaphor behind this idiom, the *apple* refers to the ‘pupil’. Folk wisdom has it that a person’s most cherished person or thing can be seen in the pupil. Thus, the metaphor is carried on metonymically. The *pupil* stands for a ‘person or thing depicted on it’. The DEPICTION FOR DEPICTED metonymy, which is a PART FOR PART relation, has turned opaque. Five matches are found.

(51) ... whose wife thought him the apple of her eye ...

(Q) *V DET/POSS eye over NP*. The meaning of the expression is ‘scanning the NP’. The V slot in this pattern is typically filled by *cast* or *run*. The metonymy is EYE FOR WATCHING. Five examples are found:

(52) ... was casting an eye over blonde girls from Sweden, Guildford or ...

(R) *one eye on NP*. This pattern codes that someone is ‘paying attention to NP’, albeit not the undivided attention, hence only *one* eye. The same metonymies as in (A)–(C) are at work. Accordingly, the pattern may merge for example with (A), as in example (53). Five examples occur in the data.

(53) ... simultaneously trying to keep one eye on Deirdre ...

(S) *there BE more to NP than meets the eye*. This is said if one suspects 'more than is readily perceivable'. The *eye* maps onto 'vision' in an EYE FOR VISION metonymy. Since the pattern is used with abstract topics, 'vision' is broadened to 'perception' in the C-Metonymy VISION FOR PERCEPTION (cf. pattern [E]). Three examples are in the data.

(54) ... something more to this than meets the eye.

(T) *black eye*. In this pattern, the adjective does not indicate the colour of the *eye*, but the darkish colour of 'the surrounding region'. This is a PART FOR PART metonymy. Five examples occur in the corpus.

(55) I knew the source of Jean-Claude's black eye and bruises.

(U) *NP in POSS eye*. This pattern describes 'facial expression'. The metonymic link is EYE FOR EXPRESSION, a case of INSTRUMENT FOR ACTIVITY. The data contains eight matches. Three further examples run *NP COME into POSS eye*.

(56) ... said Uncle Albert with a twinkle in his eye.

(57) A gleam came into his eye.

(V) *eye contact*. The used dictionaries define *contact* as 'a state of touching, meeting or communicating'. 'Watching' is one means of achieving this state. The EYE FOR WATCHING metonymy is employed. 46 examples occur in the data.

(58) She had always associated eye contact with frankness; ...

Table 1 summarizes the observed patterns and their metonymies and metaphors.

Table 1. The patterns of *eye*

	PATTERN	MEANING	METONYMIC / METAPHORICAL LINKS	TOKENS
38	(A) <i>keep an eye on NP</i>	'pay attention to NP'	EYE FOR WATCHING WATCHING FOR ATTENTION	56
39	<i>keep a ADJ eye on NP</i>	'pay attention to NP'	EYE FOR WATCHING WATCHING FOR ATTENTION	10

Table 1. The patterns of eye

	PATTERN	MEANING	METONYMIC / METAPHORICAL LINKS	TOKENS
1				
2				
3				
5	<i>keep POSS eye on NP</i>	'pay attention to NP'	EYE FOR WATCHING WATCHING FOR ATTENTION	11
	(B) <i>have POSS eye on NP</i>	'want NP'	EYE FOR WATCHING WATCHING FOR WANTING	6
	(C) <i>with an eye on NP</i>	'pay attention to NP'	EYE FOR WATCHING WATCHING FOR ATTENTION	2
10		'want NP'	EYE FOR WATCHING WATCHING FOR WANTING	2
	(D) <i>with an eye to NP</i>	'with concern for NP'	EYE FOR WATCHING WATCHING FOR CONCERN	5
	<i>with an eye to V-ing NP</i>	'with the intention of V-ing NP'	EYE FOR WATCHING WATCHING FOR INTENDING	3
15				
	(E) <i>have an eye for NP</i>	'have interest in NP'	EYE FOR WATCHING WATCHING FOR INTEREST	3
		'have good perception of NP'	EYE FOR VISION VISION FOR GOOD PERCEPTION	5
20	<i>POSS ADJ eye for NP</i>	'good perception of NP'	EYE FOR VISION VISION FOR GOOD PERCEPTION	2
	<i>with an eye for NP</i>	'good perception of NP'	EYE FOR VISION VISION FOR GOOD PERCEPTION	2
	(F) <i>turn a blind eye to NP</i>	'disregard NP'	EYE FOR WATCHING NONWATCHING FOR DISREGARD	11
25	<i>turn a blind eye</i>	'disregard something'	EYE FOR WATCHING NONWATCHING FOR DISREGARD	6
	(G) <i>catch POSS eye</i>	'attract POSS looks'	EYE FOR WATCHING	34
	<i>catch the eye of NP</i>	'attract the looks of NP'	EYE FOR WATCHING	4
30	<i>catch the eye</i>	'attract looks'	EYE FOR WATCHING	3
	<i>eye-catching</i>	'attracting looks'	EYE FOR WATCHING	2
	(H) <i>PREP the public eye</i>	'PREP the public attention'	EYE FOR WATCHING WATCHING FOR ATTENTION	12
	<i>Public Eye</i>	'TV series'	–	7
35	(I) <i>private eye</i>	'private investigator'	EYE FOR VISION VISION FOR INVESTIGATION ACTIVITY FOR AGENT	1
	<i>Private Eye</i>	'magazine'	–	11
38	<i>the Eye</i>	'magazine'	–	6
39				
40	(J) <i>in POSS mind's eye</i>	'in POSS imagination'	EYE FOR VISION	16

Table 1. The patterns of eye

	PATTERN	MEANING	METONYMIC / METAPHORICAL LINKS	TOKENS
	in the mind's eye	'in the imagination'	EYE FOR VISION	2
5	(K) <i>see eye to eye</i>	'agree'	OPINIONS ARE VIEWPOINTS	7
	(L) <i>N to the eye</i>	'N to the beholder'	EYE FOR BEHOLDER	3
	(M) <i>ADJ to the eye</i>	'ADJ to the beholder'	EYE FOR BEHOLDER	2
10	(N) <i>to the ADJ eye</i>	'to the ADJ beholder'	EYE FOR BEHOLDER	4
	(O) <i>under the eye of NP</i>	'under observation of NP'	EYE FOR WATCHING WATCHING FOR SUPERVISING	6
	<i>under POSS eye</i>	'under POSS observation'	EYE FOR WATCHING WATCHING FOR SUPERVISION	1
15	(P) <i>the apple of DET/POSS eye</i>	'cherished object'	DEPICTION FOR DEPICTED	5
	(Q) <i>V DET/POSS eye over NP</i>	'scan NP'	EYE FOR WATCHING	5
	(R) <i>one eye on NP</i>	'pay some attention to NP'	EYE FOR WATCHING WATCHING FOR ATTENTION	5
20	(S) <i>there BE more to NP than meets the eye</i>	'there BE more to NP than is readily perceivable'	EYE FOR VISION VISION FOR PERCEPTION	3
	(T) <i>black eye</i>	'discoloured eye region'	PART FOR PART	5
25	(U) <i>NP in POSS eye</i>	'NP in POSS expression'	EYE FOR EXPRESSION	8
	<i>NP COME into POSS eye</i>	'NP enter POSS expression'	EYE FOR EXPRESSION	3
	(V) <i>eye contact</i>	'visual contact'	EYE FOR WATCHING	46

4.2. *Non-patterning expressions with eye*

The patterns discussed in the previous section account for 323 of the 443 examples. That leaves a rest of 120 examples, which equals 27% of the figurative data. Figure 3 contrasts the distribution of senses in the patterning and the non-patterning figurative examples in absolute numbers.

The non-patterning examples do not convey any new senses that are absent from the patterning data. Despite this convergence, the distribution of senses displays some differences. Paramount in the patterning examples are 'attention' and 'watching', which is brought about by the high

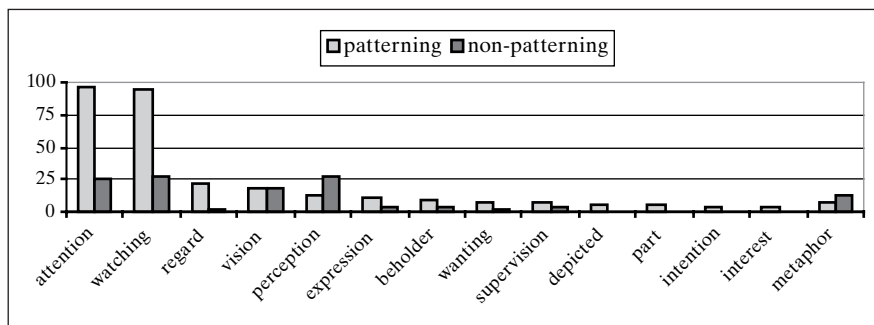


Figure 3. Distribution of figurative senses in patterning and non-patterning expressions with eye

frequency of the patterns (A) and (V) respectively. Dominant in the non-patterning expressions are the readings ‘attention’, ‘watching’ and ‘perception’. There are more non-patterning than patterning metaphorical examples. Metaphorical readings often read *eye of NP*. They display different uses of the *NP of NP-construction*.

- (59) ... thread that could tower to the silver eye of the moon ...
 (60) ... she is, to begin with, the seeing eye of the story ...

Example (59) conveys identity of the two NPs, much as *the state of Texas*. Example (60) codes a participant–event relation between the NPs. A similar example would be *the organizers of the conference*.

4.3. Colligates of literal and figurative usages of eye

This section establishes which word classes occur immediately next to *eye* in running text. This will allow us to contrast literal and figurative usages in broader terms. Figures 4a and 4b are based on 466 literal usages and 443 figurative usages of *eye* from the 10 million word BNC sample. The distribution is given in percentages, probability of error is computed with the binomial test.

4.3.1. Right-side colligates of literal and figurative usages

Four differences emerge. Literal usages of *eye* significantly more often take verbs and nouns as right-side colligates. The verbs *be* and *have* are responsible for this tendency. With respect to nouns it can be stated that

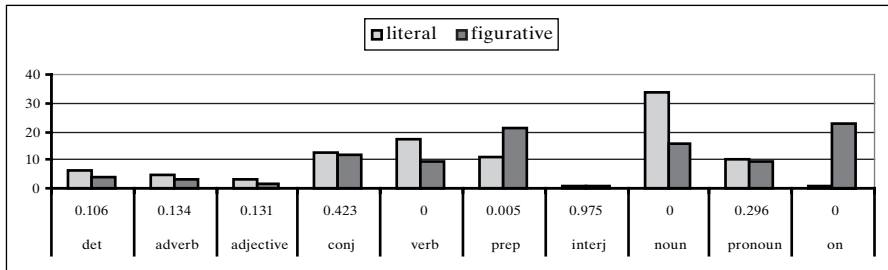


Figure 4a. Distribution of right-side colligates of literal and figurative usages of *eye*

literal *eye* is more often used in compounds (*eye drops*, *eye movements*) than figurative *eye*. The compound *eye contact* accounts for 46 of the 74 examples in which figurative *eye* is followed by a noun, other compounds are rare. As a third differing word class, prepositions encourage figurative interpretation, the preposition *on* particularly so. I list it separately here, because the structure *eye on* has only very rarely a literal interpretation. Taken together with the other prepositions, figurative *eye* is followed by a preposition in 43.5% of all cases.

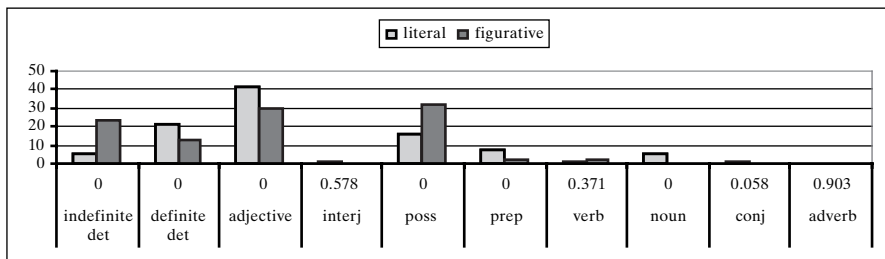


Figure 4b. Distribution of left-side colligates of literal and figurative usages of *eye*

4.3.2. *Left-side colligates of literal and figurative usages*

The left-side colligates are split into six highly significant and four non-significant classes. Indefinite determiners indicate figurative interpretation (*an eye for design*), conversely definite determiners indicate literal interpretation (*around the eye*). Adjectives modify literal usages of *eye* more often than figurative usages, more frequent than *left* and *right* are in

fact technical adjectives like *compound* and *lateral*. Possessives encourage figurative interpretation (*catch her eye*). Prepositions are found significantly more often to the left of literal eye, which is due to the preposition *of* (*measurement of eye movements*). Finally, nouns are almost never found to the left of figurative usages of *eye*.

4.4. The senses of eye

Thirteen metonymic extensions emerge from the data. Taken together, the first two of these account for 54.6% of the concordance. The first sense maps *eye* onto the activity of ‘watching’ (*eye contact*), the second maps it onto ‘attention’ (*keep an eye on him*). The first sense is achieved via the EYE FOR WATCHING metonymy alone, in the second sense EYE FOR WATCHING feeds WATCHING FOR ATTENTION. Either sense accounts for 27.3% of the concordance. *Eye* denotes ‘concern’ (*with an eye to workers’ interests*) via another chained metonymy. Here, EYE FOR WATCHING feeds WATCHING FOR CONCERN. *Eye* refers to the faculty of ‘vision’ (*a sharp eye*) via the EYE FOR VISION metonymy. The EYE FOR VISION metonymy regularly feeds VISION FOR PERCEPTION which yields the sense of general ‘perception’ (*my eye for spotting talent*).

Each of the remaining eight senses constitutes less than 2.5% of the overall concordance. *Eye* means facial ‘expression’ via the EYE FOR EXPRESSION metonymy (*a twinkle in his eye*). *Eye* refers to the ‘beholder’ via the EYE FOR BEHOLDER metonymy (*pleasant to the eye*). *Eye* triggers the sense of ‘wanting’ by a chained metonymy. EYE FOR WATCHING feeds WATCHING FOR WANTING (*he had his eye on it*). A body part stands for an activity which stands for a contiguous mental state. *Eye* refers to ‘supervision’ by a similar chained metonymy. EYE FOR WATCHING feeds WATCHING FOR SUPERVISING (*under the eye of uncle Philip*). The idiom *the apple of my eye* involves a fossilized DEPICTION FOR DEPICTED metonymy. *Eye* refers to its ‘surroundings’ via a PART FOR PART metonymy (*black eye*). *Eye* also has the meaning of ‘intending’ via another chained metonymy. EYE FOR WATCHING feeds WATCHING FOR INTENDING (*with an eye to acquiring property*). Similarly, *eye* denotes ‘interest’. EYE FOR WATCHING feeds WATCHING FOR INTEREST (*they had an eye for renewed state intervention*). Metaphorical extensions of *eye* rely on metaphors like THE CENTER IS THE EYE (*the eye of the storm*) or involve the metaphor OPINIONS ARE VIEWPOINTS (*see eye to eye*). See Figure 5 for the distribution of the different senses in absolute numbers.

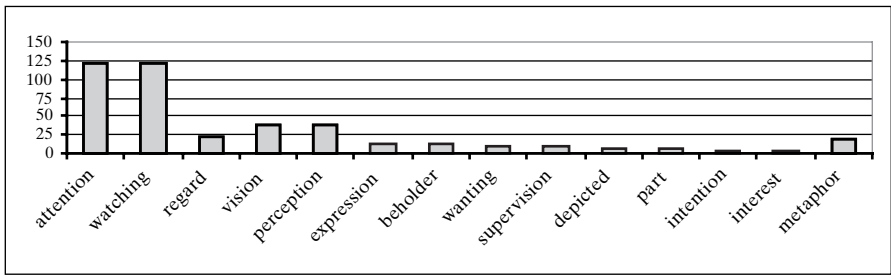


Figure 5. Distribution of senses in figurative expressions with *eye*

Worth discussing is that 49% of the concordance examples display a figurative meaning. This figure matches the finding of Deignan and Potter (to appear) that figurative meaning is very common with another English body lexeme, namely *heart*. On a more general level, this underlines the importance of body concepts in human conceptualization (Lakoff and Johnson 1999). If people really conceptualize abstract things in terms of the human body, there should be quantitative evidence for this.

A second issue is that 72.9% of the figurative examples are patterning. This corroborates findings that fixed and semi-fixed expressions are a major part of the lexicon (Barlow 1996, Partington 1998). All metonymic extensions are contained in the patterns, the non-patterning examples do not add to the range of meanings. Many patterns allow for some variety, that is, intervening adjectives or the replacement of a determiner by a possessive pronoun are accommodated. Function words play a decisive role in the discussed patterns. Whereas there are also lexically filled patterns such as *catch the eye*, patterns such as *with an eye to NP* rely on prepositions only. Most patterns feature a preposition to the right of *eye*. This leaves its mark on the right-side colligates. A preposition on the right is an indicator of figurative meaning. The preposition *on* has a special status, since it indicates figurative meaning with a chance of more than 97%. All in all, patterning seems a very robust guide to figurative meaning.

Another topic brought up by the data is chaining of metonymies. All observed chained metonymies have EYE FOR WATCHING at the basis, which has a strong experiential basis and is by far the most entrenched contiguity relation in the data. EYE FOR WATCHING feeds both C-Metonymies (e.g. WATCHING FOR ATTENTION) and E-Metonymies (e.g. WATCHING FOR SUPERVISION).

Lastly, very few metaphorical examples (2.7%) are found. This is due to the fact that body parts such as *eye* are first and foremost conceptual-

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ized as instruments that map onto contiguous activities. *Eye* thus lends itself easily to conceptual metonymy, but less easily to metaphor.

These findings have important consequences for a cognitive theory of metonymy. Current theory assumes that metonymy is a conceptual tool that enables people to understand non-literal language. Contiguity relations like INSTRUMENT FOR ACTIVITY have the status of memorized problem-solving strategies that are applied when we hear expressions like *under the eye of Uncle Philip*.

On a pragmatic account of metonymy, this expression should be understood in a three-step procedure. First, the expression must be understood literally. Since the literal reading is nonsensical, a fitting metonymy must be chosen in a second step. Third, the metonymy must be applied, so that *eye*, sent through EYE FOR WATCHING and WATCHING FOR ATTENTION, yields ‘attention’.

The present analysis suggests a different theory. Since the different metonymic extensions of *eye* occur within fixed or semi-fixed patterns, the microcontext of the lexeme gives hearers enough scaffolding to understand the intended meaning *directly*. That is, the metonymies EYE FOR WATCHING and WATCHING FOR ATTENTION have given rise to the expression *under the eye of NP*, but it seems highly unlikely that hearers re-process them on every occasion.

To be sure, on-line processing of metonymic language occurs. However, it seems to be restricted to unconventionalized, ad hoc cases of metonymy like *Never invite two China trips to the same dinner party*, which are found very rarely in the data. Much more frequent are cases of systematic metonymy. The extensions in the patterns form metonymic networks. For example, the polysemy of *eye* extends first to *watching*, and from there to *wanting*, *attention*, *concern*, and so on. The idea that polysemy is motivated along the lines of metaphor and metonymy is one of the basic tenets of Cognitive Linguistics (Lakoff 1987, Sweetser 1990). Work on polysemy in the cognitive tradition has largely focused on metaphor, whereas other approaches have put the role of metonymy center stage in their discussion of systematic polysemy (Nunberg 1995). In the investigated data, systematic extensions vastly outnumber ad hoc metonymies.

The fact that most figurative language is organized in patterns and can be described as systematic polysemy casts doubt onto purely pragmatic theories of metonymy (e.g. Searle 1979). It must be assumed that ad hoc metonymies, as special and comparatively rare cases, are resolved pragmatically, whereas systematic metonymies are resolved via pattern clues.

Metonymic expressions like *under the eye of NP* have entered the lexicon as constructions and are thus a matter of semantics. The present analysis thus suggests a *construction-based* account of metonymy interpretation. Figurative usages of the lexical concepts under investigation get their non-literal meaning only by virtue of their immediate context. These contexts have to be learned, since the meaning of a pattern does not build up from its parts. The meaning of the observed patterns is motivated by the conceptual metonymy, but it is not fully predictable. For example, it is motivated that the expressions *keep an eye on NP* and *have an eye on NP* should refer to ‘paying attention’. Being attentive to something regularly involves watching it. However, it is not predictable, why *have an eye on NP* can in some cases refer to ‘wanting NP’, whereas *keep an eye on NP* can only refer to ‘paying attention’.

A construction-based account of metonymy has the advantage that it does not rely on *selection restrictions*. Pragmatic theories of metonymy comprehension assume that hearers compute the literal meaning of the words they hear and resort to a figurative interpretation if a selection restriction is violated.¹⁷ Example (61) illustrates such a case. Ham sandwiches cannot literally wait for their checks. However, some metonymies do not violate selection restrictions. See example (62):

- (61) The ham sandwich is waiting for his check.
 (62) I didn’t see eye to eye with him.

People can literally *see eye to eye*. However, the pattern is never used in this way. Instead of relying on selection restrictions alone, a robust account of metonymy comprehension must take collocation into account.

I hope to have shown that corpus linguistic methodology can be fruitfully applied to the analysis of figurative language. Keeping an eye on the data seems a promising strategy for future research into conceptual metaphor and metonymy.

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¹⁷ This hypothesis, which has been dubbed the *Literal-Meaning-First-Hypothesis*, has come under the severe criticism of psycholinguists (Gibbs 1994) and computational linguists (Hahn and Markert 1997).

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