

English hearts and what they tell us about language and mind¹

Andreas Burki
andyburki@korea.ac.kr

In this critical application of the Conceptual Theory of Metaphor (henceforth CTM) I will show that with help of the CTM it is possible to capture very significant generalisations about the English language. This will be demonstrated with respect to a set of data comprising 60 representative English expressions which include the word *heart*. These expressions account for what may reasonably be considered the vast majority of uses of the word *heart* in English, an area of the language which, although seemingly abundant with metaphor, has not previously been the focus of an analysis in the CTM framework. The expressions are taken from corpus data representing both spoken and written sources. Employing CTM-tools, I shall extract mappings and metonymies that motivate all these expressions from a small number of proposed mappings. Supported by findings of the analysis, I furthermore propose that certain adjustments to the CTM are necessary, including the following:

- Not any possible hypothetical mapping fitting linguistic data is a plausibly psychologically real mapping.
- Whereas some contribution of mappings to understanding is likely, claims that mappings are necessary for conceptualisation, particularly the claim that target domain concepts can only be understood via source domain appears insufficiently supported.
- Mappings can likely generate, not only motivate senses of words and expressions.
- the addition of mapping rules (such as X AS PERSON) would enhance the ability of the CTM to capture generalisations.

On the other hand, findings from the present study provide support for claims that mappings are cognitive, not simply linguistic and that the nature of mappings is permanent not dynamic.

1.1 Introducing the CTM

The theoretical framework variously referred to as the cognitive (or conceptual) theory of metaphor, the contemporary theory of metaphor², or the mapping view, was proposed its present form by Lakoff & Johnson (1980), though parts of the paradigm may be traced in the thought of scholars much before them³. A considerable amount of work has been carried out both within the framework and in response to it and it has been acknowledged, even by its critics, to be "extremely influential" not only in (cognitive) linguistics, but in literary studies and the cognitive sciences as well (Keysar et al. 2000: 576). The scholarly debate over its merits, however, is still very much alive.

Support for CTM-claims comes from language data such as the following:

¹ This article is based on an MA dissertation submitted to SOAS in 2001.

² Clearly, however, this theory is not the only or even the pre-eminent contemporary metaphor theory, and there are various approaches to metaphor also within the cognitive linguistics paradigm.

³ So for example John Locke and Immanuel Kant or, more recently, Benjamin Lee Whorf. The reader is referred to Jäkel (1997) for a discussion of predecessors of the paradigm and their significance.

You'll get there eventually: (to a student writing a dissertation)
I'm at a crossroads in my life.
He lost direction in his career.

The above expressions would be analysed in the CTM as manifesting a conceptual cross-domain mapping because the domain of long-term purposeful activities such as writing dissertations, living and pursuing careers (target domain) is at least partly conceptualised via the domain of journeys (source domain). This is formulated as LONG-TERM PURPOSEFUL ACTIVITIES ARE JOURNEYS (Lakoff 1993:220) which is a general mapping with logically associated mappings such as, for example, GOALS ARE DESTINATIONS (as seen in the first example). It is a general mapping because mappings such as CAREERS ARE JOURNEYS and LIFE IS A JOURNEY are more specific instances of it and share the associated mappings of the more general mapping, though they may have their own specific associated mappings. Thus there are mappings at different levels of generality, more specific mappings following from more general ones, and there are logically associated mappings.

Mappings are seen not as live processes performed each time a target domain is accessed, but rather as "fixed [...] correspondences across domains" (Lakoff 1993:210). *Fixed* here does not imply that no new mappings can be created (new mappings are created for example through a novel metaphor), but that mappings are present long-term in the brain and are not instantaneously created for and discarded after a particular instance of use. Mappings are asymmetric; they only work in one direction, from source to target domain. Usually mappings are furthermore only partially conventionalised: a mapping will motivate both conventional uses and novel metaphor.

Below, I will consistently use the format TARGET DOMAIN AS SOURCE DOMAIN⁴ since it escapes the unintended suggestion of identification between source and target domains inherent in the format TARGET IS SOURCE.

Metaphor, according to the CTM, is a mapping between two conceptual domains. Hence, mappings are not linguistic rules that produce metaphor; they are rather the metaphors themselves and produce metaphorical concepts (i.e. concepts understood fully or partially in terms of other concepts via mapping).⁵ Metaphorical expressions in language are the natural surface reflex of conceptual metaphors (Lakoff 1993:208). Literal concepts, consequently, are concepts that are not comprehended via metaphor (Lakoff 1993:205) and naturally result in literal expressions.

This definition of metaphor, while arguably based on a central aspect of the established meaning of metaphor (expressing one thing in terms of another), is nevertheless not exactly what metaphor means to the rest of us. The sentence *Interest rates rose by 0.5%*, for example, is metaphorical in CTM-terms since it could be said to manifest the mapping MORE AS UP. Jackendoff and Aaron (1991: 326ff) identify the aspect missing from the CTM-definition of metaphor as a sense of literal incongruity. Feeling with J&A that "the traditional insight about the literal incongruity of metaphors is worth preserving" (1991:326), I shall subsequently use the more neutral term *mapping* rather than *metaphor* when speaking about mappings while

reserving *metaphor* for expressions that display a degree of literal incongruity as well as a mapping.

Why are some concepts understood (conceptualised) in terms of other concepts? The CTM claims that the reason for mappings is that understanding and meaning need to be built up from basic concepts. Basic concepts are directly meaningful because they are grounded in embodiment.⁶ The remaining concepts are "indirectly meaningful; they are understood because of their systematic relationship [mappings] to directly meaningful structures" (Lakoff 1987:268).

It follows that mappings are not arbitrary, but constrained in that source domains of mappings are expected to be basic concepts and target domains non-basic concepts. The CTM is thus able to offer an explanation for why mappings should exist at all, why they are asymmetric and why the direction of mappings is from concrete/physical to abstract/non-physical (though of course this last claim remains to be confirmed in our analysis). The pairings of source and target domains, furthermore, are motivated through "an experiential correlation between [them]" which makes the mapping "natural" (Lakoff 1987:278).

1.2 Introducing data and methodology

The data for the present study consists of English expressions which include the word *heart*. The 60 expressions investigated were arrived at by searching the British National Corpus⁷ for sentences containing *heart*, complemented by a few examples taken from the Bank of English.⁸ From these were eliminated duplicate sentences that instantiate the same expression, i.e. for selection purposes, a sentence like *She was keeping her promise to herself, but in her heart of hearts few knew that eventually she would accept him* (BNC GW8 1389) varies insignificantly from *It's obvious that in their heart of hearts the Japanese don't really want calculators* (BNC AR18 1407) because both are instances of the *heart of hearts* expression, hence only the first one was admitted to our set of expressions to be investigated.

These selection criteria produce a clearly and systematically delineated set of data, restricting the number of possible example sentences that vary significantly with respect to the use of *heart*. Within this restricted area, an attempt was made to provide as full a coverage as possible of all examples. This is in contrast to much other work; it appears that most researchers choose their data on thematic grounds, such as "expressions of anger" (Matsuki 1995, similarly Lakoff [with Kovecses] 1987, Yu 1998 and Ibarretxe 1997) or some-data-supporting-my-proposed-mapping type of selection. Such criteria cannot provide sharp boundaries as to what expressions should or could be considered and hence are unable to escape a certain arbitrariness. Furthermore, only a relatively small set of examples is usually chosen for investigation out of the possible number of expressions in the thematic area. In

⁶ The notion of directly meaningful concepts remains rather vague. Elsewhere, Lakoff (1993:245) states loosely that mappings are "grounded in the body and in everyday experience and knowledge" and judging from the kinds of source domains he suggests, this is understood very widely.

⁷ The British National Corpus (BNC) is a 100 million word collection of samples of written and spoken language from a wide range of sources, designed to represent a wide cross-section of current British English" (BNC 2004, my emphasis).

⁸ A 450 million word corpus of current English maintained by Collins Cobuild at the University of Birmingham (BoE 2001).

⁹ A notable exception is (pre-CTM) Reddy (1993) who lists more than a hundred types of expression which she estimates to account for at least 70 percent of expressions in his focus area.

⁴ An alternative suggested by Lakoff (1993:207).

⁵ Conceptual mappings may be partial: target domains may have several source domains helping to conceptualise and understand different aspects of them (L&J 1980:108) and / or they may be understood partly in their own terms (i.e. without mapping).

treating the data, researchers often only pay attention to a few mappings under investigation, with other metaphorical aspects of examples not explained or investigated. Thus no complete account is given and explanations can remain sketchy and incomplete. The present study attempts to analyse the whole of each chosen expression.

Finally, again in contrast to most other work and in an attempt to maximise objectivity, the methodology of this study insures that our analysis is based on representative actual language usage rather than on self-invented examples or examples without declaration of origin. The origin of each expression in our data is indicated as [BNC X] (X stands for the BNC reference number of the expression) or [BoE] respectively.¹⁰

2 Application

2.1 The meaning of *heart*

As indicated above, the word *heart* is central to the data and consequently its meaning plays a significant role in our analysis. Word meaning is equally a non-trivial issue to the CTM-framework; its claims are intimately bound up with word meaning and indeed the CTM is also a tool of lexical semantics. Thus, for example, CTM-style metaphorical mappings are used as a tool to explain meaning extensions in Lakoff's (1987) study of the meaning of *over*, accounting even for cases like *overriding* and *doing it over again*.

Given the importance of word meaning to our study, it must be the starting point of our application of the CTM. Among meanings of *heart* commonly listed in dictionaries are 'blood-pumping organ of the body', 'centre of emotions', 'spatial centre', 'vital part' and 'abstract heart-shape'. The CTM, being part of the larger cognitive linguistic paradigm, accepts and builds upon the premises of the prototype theory of categorisation (traceable in modern thought to work of Eleanor Rosch). Prototype theory conceives of the meaning of a word as a typical or ideal instance, a so-called prototype or in case of polysynous words, as Lakoff, Taylor, Langacker and others hold, a network of related prototypes with one being the central (prototypical) prototype. Consequently, in our application, we proceed in trying to establish a central meaning of *heart* from which other senses follow or via which other senses are related. If they turn out to be related, which we may assume as a starting point. It follows from the very concept of a central prototype that the central meaning of a lexical category should be the one from which other senses may be most easily derived (in a synchronic sense). A further hint as to which meaning is likely to be central, is provided by the CTM-claim that metaphorical mappings are from physical source domains to abstract target domains. Unless we preclude the possibility that any of the senses of *heart* result from a mapping, a concrete, physical meaning is more likely the central meaning. I propose that the central meaning of *heart* is its physical meaning as blood-pumping organ. This seems to accord well with intuition and might be the first meaning quoted if one asked a member of the public for the meaning of *heart*. Another meaning for *heart* likely to be named would be the understanding of the heart as the centre of emotions, but this seems intuitively a metaphorical meaning despite being conventionalised.

The blood-pumping heart appears to be understood as the centre of the physical body in a comprehensive sense, paraphrased as 'the most vital part of the physical

body' as well as being 'located in the spatial centre of the body' (regardless of whether the heart is scientifically at the centre of the body shape). Some linguistic support for this comes from data sentences 45) to 48), reproduced below for convenience:¹¹

45) ... a radically new and immensely powerful device which remains the heart of every modern radar. [BNC B7M 1733]

46) Indeed, the conditions created by the electoral system were seen as being the heart of Britain's current problems. [BNC 157 1703]

47) The feeling is very much that of a country house hotel in the heart of London, a retreat from the busy streets outside. [BNC, BPE2030]

48) Daimler-Benz, for example, has bought a large site on Potsdamer Platz, in the heart of the new Berlin. [BNC ABE 2574]

In 45) to 48), the sense of *heart* is clearly not that of 'blood-pumping organ', but in 45) and 46) a sense to do with being 'the most vital or important part' and in 47) and 48) a sense to do with being 'located in the spatial centre'. If we treat these example sentences as manifesting cross-domain mappings, we may use, for example, the MACHINE AS PERSON mapping suggested by Lakoff and Turner (as cited in Jackendoff and Aaron, 1991) and apply it to 45) with the heart of a person corresponding to the heart of a machine (in this case a radar), the heart in both cases being the vital part, though radars not actually being bodies, they don't have blood to be pumped around and so naturally that aspect of the meaning of *heart* is not carried over to the target domain (Invariance Principle). A similar case can be made for 46) where we may suggest a mapping PROBLEM AS PERSON which also permits us to make up sentences like *his problems rob him of his sleep*, robbing being primarily a human predicate. 47) and 48) suggest a mapping like PLACE AS PERSON, (such a mapping can be independently detected as the mapping involved in sentences like *London suffers not from too many hospital beds, but from too many people who need to use them*. [BNC FTO 1698]. *But Griseville remains a sad place*. [BNC ASU 243], or *many modern cities don't seem to have character* (my example). Though a source domain of animals or people could be argued for, it appears to me that these attributes are most typically human, especially 'sadness' and 'having a character'.¹² We further observe that although *heart* in 47) and 48) corresponds to the heart in a person mainly in the sense that both are located in the centre of that which they are a part of, it seems that spatial centre-location is not the only aspect of the heart picked up. Other aspects of the meaning of *heart* can play a role, such as a meaning of *heart* as the place of the depth of character. Potsdamer Platz, we would assume from 48), is somehow typical of Berlin. In 20) the 'spatial centre' sense is completely absent, and only typically is meant (Flammersmith still has a spatial centre, of course). If the meaning of *heart* in 48) is the product of the mapping PLACE AS PERSON, this nuance is nicely

¹¹ Subsequently, rather than reproducing data in the main text, only the number of the expression is given. The reader is referred to the complete list of data at the end.

¹² The notion of animals as including humans is more a scientific and specialist one. Ordinarily, 'animals' are non-human and of a different kind. Mammals would not be a likely source domain, again this is a somewhat abstract biological term, not one from experience.

¹⁰ BNC (British National Corpus) data were obtained on 30 August 2001 via the online search facility

at <http://sra.natcorp.ox.ac.uk/lookup.html>. BoE (Bank of English) data via the Collins Cobuild English Dictionary (1995a) and the Collins Dictionary of Idioms (1995b).

explained, but if *heart* in 48) simply gave access to a lexicon-listed meaning of *heart* (for example, centre with nuance of typicality), the correlation between centre and typicality would be accidental.

Anthropomorphisations are of course possible with a wide range of concepts and with differing degrees of specification. The question may be posed as to whether, given such a productive mapping, we should posit a mental mapping rule such as X AS PERSON, where X is any concept, rather than listing a near infinite number of individual mappings of the sort PLACE AS PERSON. A mapping rule like X AS PERSON or X AS OBJECT (which we will encounter later) would, however, be problematic for the CTM because for the CTM, mappings are a *fixed* set of correspondences between conceptual domains. In order for such correspondences and the resulting conceptualisation of the target domain to exist, all individual mappings would seem to have to be static. Consequently, it appears that the CTM cannot offer a unified way of accounting for the extremely widespread phenomena of anthropomorphisation and viewing something abstract as a physical object, except to say that the phenomena consist of thousands (or perhaps millions) of individual mappings that share the same source domains. I shall continue to use the 'X AS ...' format, provisionally as a shorthand for the fully specified mappings, and return to the issue below.

We have so far, then, discussed some evidence indicating that the heart is understood as the centre of the physical body in a comprehensive sense (including 'most vital part' and 'spatial centre'). This was of course arguing backwards from metaphorical uses of *heart* to literal uses of *heart*. That the real direction is from literal to metaphorical (i.e. to make sure I am not interchanging source and target domains at will) may be demonstrated using a test sentence similar to Jackendoff and Aaron's (1991: 326):

Of course a machine is not a person, but if it were, we might say the most vital part of a machine is the heart of the machine. (X AS PERSON)

? Of course a person is not a machine, but if they were, we might say the heart of a person is the most vital part of a person. (PERSON AS X)

The second sentence appears very odd for the reason that the heart of a person IS indeed the most vital part of a person (regardless of any mapping) whereas in the first sentence, machines do not literally have blood-pumping organs, but only via mapping. This indicates not only that the mapping must be in the direction claimed, but also that the heart being the most vital part of the body is not a metaphor itself, but rather a literal belief held, or one may say, part of the English concept of *heart*. The direction (X AS PERSON) is also given by the constraints on mapping direction: a machine may just about pass as a target domain; although physical and concrete, it may be argued to be less basic than experience of the physical body itself. We can propose the mappings CENTRE AS HEART and VITAL PART AS HEART as more specific instances (associated mappings) of X AS PERSON. As will be argued below, however, these specific mappings have little justification if occurring independently of X AS PERSON.

In expressions 1), 2) and 15), it is clear that it is not the blood-pumping organ that is broken, torn or stolen in any literal sense. Matsuki, in her analysis of anger metaphors in Japanese (1995) is faced with a similar situation in her discussion of the 'hara' concept which is both a physical body-part (belly) and, as she explains,

"metaphorically contains the emotions in Japanese" (142).¹³ This leads to expressions like 'to split hara, i.e., to open one's heart' and 'hara is black, i.e., not fair/wicked' (143). To explain those uses, Matsuki suggests a mapping 'hara is the container of real intention and emotion' which also manifests itself as 'hara is real intention and emotion' via the metonymy that the container stands for the content (143).

Given that 1), 2), 15) appear to show senses that may be generalised with the paraphrase 'centre of one's emotions or feeling,' we may, à la Matsuki, suggest the mapping CENTRE OF EMOTIONS AS HEART. The heart would clearly have to be the source domain in the above mapping: it is unlikely that the heart (a concrete domain) would be partly conceptualised in terms of the centre of emotion (highly abstract, non-physical domain) not only because it would go against the CTM's mapping-direction constraint, but also because expressions of emotion have already been shown to be a frequent target domain (Lakoff [partly with Kövecses] 1987, Yu 1998, etc.) and it helps, so it appears, to use language for more concrete physical domains to talk about emotions. Furthermore, that the 'centre of emotions' meaning of *heart* is actually a metaphorical meaning of the blood-pumping organ, rather than simply a homophonous word or one of several polysynous literal meanings of *heart* is suggested by the otherwise irrational attitudes that people have towards the blood-pumping organ. This is exemplified by the romantic comedy "Return to Me" (an MGM film released in 2000) wherein a happily married couple have a car accident in which she dies and her heart is given to another woman, waiting for a donor heart. The husband later falls deeply in love with that woman and is shocked when she later finds out about the heart. The film suggests that the love relationship was helped if not facilitated by the fact that the two women shared one heart and it plays on viewers' associations of the blood-pumping organ with the centre of emotions throughout.

Suggesting the mapping CENTRE OF EMOTIONS AS HEART to take care of 'centre of emotions'-type meanings of heart, however, seems insufficient for two reasons:

First, our mapping sounds very much like a definition, a statement of attributing a certain meaning to *heart* as could be done, for example with the meaning of *foot* (another body part) as the lowest part of a mountain where it flattens out: LOWEST PART OF A MOUNTAIN AS FOOT or our mappings from above CENTRE AS HEART and VITAL PART AS HEART. Though such mappings are possible and true in that they capture linguistic phenomena, they are not particularly interesting and provide little justification for being a mapping rather than simply an (arbitrary) lexicon-listed meaning, because the strength of and justification for CTM-claims in this area lie precisely in CTM's ability to explain such meanings or uses of vocabulary. It therefore seems that these mappings need supplementing. If we conceive of mappings as being hierarchically structured, as the CTM suggests, we may posit more general mappings from which the lower-level mappings either fall out automatically or follow naturally in a motivated way: if we posit MOUNTAIN AS PERSON, we don't need to posit LOWEST PART OF A MOUNTAIN AS FOOT and can similarly explain sentences like *the new tunnel goes right through the heart of the mountain*. If specific mappings alone are posited or if there is no evidence for the

¹³ One of the senses listed in a (presumably bilingual) dictionary quoted by Matsuki is indeed 'heart, real intention'.

¹⁴ A similar incident is reported by Yu (2003: 14) with regard to the gall bladder which in Chinese stands for courage (GALLBLADDER IS CONTAINER OF COURAGE): a Chinese person had to have his gallbladder surgically removed and was subsequently rather shaken by the fact, although, medically speaking, there was no reason for concern.

presence of supposed higher mappings that could justify the lower mappings, there is very thin evidence indeed that such a specific-level mapping exists.¹⁵ Mappings should therefore be shown to be part of a hierarchy so that ultimately we have no longer single mappings in empty space, but a network of hierarchies (similar to the Event Structure Metaphor as presented for example in Lakoff 1993: 220ff). This would not only result in more wide-ranging and convincing explanations, but would similarly constrain mappings by forcing those who suggest them to locate their suggested mappings with reference to other already established mappings or possible more general mappings and their validity.

Second, CENTRE OF EMOTIONS AS HEART is insufficient in itself; it does not explain how emotions can have a centre. An additional mapping or explanation is minimally necessary.

Addressing the two above objections, I suggest that the meaning of *heart* in 1), 2), 15) and similar expressions actually follows from the more general mapping EMOTIONAL SELF AS PHYSICAL SELF.

From this we may not only derive our earlier CENTRE OF EMOTIONS AS HEART mapping (if the physical self has a centre, then the emotional self has one, too, and if the centre and most vital part of the body is the heart, as argued above, then the heart is naturally the centre and most vital part of the emotional self as well) but also a range of more differentiated meanings. First, however, we should try to see whether the EMOTIONAL SELF AS PHYSICAL SELF mapping has support other than explaining CENTRE OF EMOTIONS AS HEART: it can be pointed out that *you hurt me* or *I got a knock from him* can refer to bodily or emotional injury suffered, the latter making use of the proposed mapping. Furthermore, physically, "the centre defines the identity of the individual in a way that the peripheral parts do not. [...] A person whose hair is cut off or who loses a finger is the same person" (Lakoff 1987:274). Therefore, emotionally, the innermost part or the inner self are seen as the emotional identity and character. The heart, being not only in the general centre of the body but at its very central point, is consequently the centre or essence of identity and character (evidenced in 20), 10), 11), 41) and 31)). We can therefore suggest the mapping ESSENCE OF IDENTITY AND CHARACTER AS HEART as an associated mapping of EMOTIONAL SELF AS PHYSICAL SELF. The physical heart, located inside the body, cannot be seen from the outside. Similarly, the emotional heart and what it is made of cannot be seen by outsiders, hence it is the location of private feelings, intentions, secrets and precious thoughts as in 50). One's heart of hearts (51) is then naturally the location of one's very, very innermost and private feelings. These facts provide good justification for the EMOTIONAL SELF AS PHYSICAL SELF mapping which I have argued is responsible for the meanings of *heart* found in example 1), 2) and 15) above.

One further meaning of *heart*, though not central to our concerns, is worth a brief comment: the abstract heart-shape (as in 52), which is meant as a representation of the blood-pumping organ, not only of its 'centre of emotions' -type uses or only as a

¹⁵ Lakoff and Johnson specifically insist on the presence of mappings in cases where higher level mappings are not actively supported, as evidence they suggest that novel metaphor can make use of the unused part of the higher level mapping and it must hence exist. Nevertheless, they concede "if any metaphorical expressions deserve to be called "dead," it is these" (1980:54,55)

¹⁶ The mapping KNOWING AS SEENING is made use of here. The mapping is argued for by Sweeter 1990:3-6 and evident from expressions like *Ah, I see how it works, now*.

symbol of love.¹⁷ This can be seen, for example, from the use of the heart symbol in logos of heart-disease groups or blood donation organisations. By metonymy we can refer to a picture or a two- or three-dimensional representation of something by the same name we use to refer to the real object (so we can say *this is uncle Alfred* pointing to a picture of him). I propose the same mechanism explains the 'heart-shape' meaning of *heart* precisely because the abstract shape is a representation of the blood-pumping organ, although the two look very different.

In this section I have shown that the most common meanings of *heart* as found, for example, in 1), 2), 14), 45) to 48) follow from the central meaning of *heart* as the 'blood-pumping organ' with help of the mappings X AS PERSON and EMOTIONAL SELF AS PHYSICAL SELF (and their more specific instances).

2.2 Heart-expressions

Having so far clarified the meaning of *heart* itself and having ascertained some important mappings present in heart-language, we may now turn to an analysis of the remaining data to establish the mappings (and other devices where appropriate) which motivate their wording and meaning. The data is divided into four thematic groups. A discussion of the analysis is given for all expressions in the first grouping and for further expressions of particular interest in the remaining groupings.

Group 1

1) to 14) may be grouped together as they all speak about physical manipulation of the heart and objects coming or being in contact with it.

The mapping EMOTIONAL SELF AS PHYSICAL SELF together with the beliefs held about the heart in relation to the body (vital part, centre, etc.) enables English speakers to express emotional injury in terms of physical injury in general (*you hurt me*) and injury to the heart in particular, if the injury is perceived to be very serious or affecting some vital, central aspect of one's emotional self.¹⁸ Lakoff states that "injuries to the central parts [of the body] are more serious (i.e. not mendable and often life threatening) than injuries to the peripheral parts" (274). Perhaps that is why being hurt emotionally (without specification where) is far less serious than having one's heart pierced. Such injury to the heart is found in 1) to 6). It is possible to portray either the act of injuring in process or the finished result, as can be seen in 1) vs. 3). In 1), 6) and other cases where the agent is not a person (but an act, situation, sight or words spoken, for example) use of either the anthropomorphisation mapping or a mapping X AS PHYSICAL OBJECT would have to be made. Most subordinate-level terms for injury seem fairly conventional, with *break* and *rear* perhaps the most conventional. 4) is special in that it does not mention the act, but only the result which could be due to no direct outside act such as when one suffers emotionally without this necessarily being the fault of someone else, though someone else might be the cause. In 5) the inference from the physical domain that if something pierces deep it causes more pain is equally present in the abstract domain.

7) and 8) imply that an external object made direct contact with the heart. Making physical contact involves the touching object having a certain effect and influence on the touched object, so that we may suggest a mapping INFLUENCE AS

¹⁷ So also Chambers Dictionary: "a sign representing a heart or often love" (1997:291). Collins Cobuild, inaccurately in our view, only explains that the heart-shape is "used as a symbol of love" (1995a:780).

¹⁸ So also Lakoff when he suggests the mapping SOCIAL/PSYCHOLOGICAL HARM AS PHYSICAL HARM (1987:448)

PHYSICAL CONTACT (also manifested in utterances like 'Hands off our rights, reoriented the unions [BNC CRB 1734]. In other words they are continuing to operate in their separate ways, largely untouched one by the other [BNC B2T 876]).¹⁹ If something influences directly the centre of emotions, it clearly has a rather profound effect. The kind of motion further suggests a rather sudden strong influence, not necessarily a long-term one, though the latter might follow from the former: 9) to 12) are similarly explained; something located close to the heart presumably has contact with it. In contrast to 7) and 8), however, specifically a longer-term influence is envisaged. In the above data and particularly in some of the following data, it sometimes appears that the heart does not particularly stand for the centre of emotions only, but for the whole of the emotional self, or one's emotions. This is a case of metonymy which allows one to speak of something by referring only to a (salient) part of it, as in 'Admission is £5 per head' (HEAD STANDS FOR PERSON). In our case it would be the metonymy CENTRE OF EMOTIONS STANDS FOR EMOTIONS.

In 13) and 14) the heart as container is not a metaphorical understanding, rather than being confronted with a mapping, we are confronted with an aspect of the ontology of the object: the heart contains different substances in its structure, such as muscle and flesh as well as containing blood and presumably air in its hollow spaces. On the mapping EMOTIONAL SELF AS PHYSICAL SELF, and the more specific CENTRE OF EMOTIONS AS HEART, the bodily substances contained within the outer shape of the heart, constituting it, naturally correspond to the feelings, inclinations and other contents that make up the emotional heart. Opening something entails gaining access to it and if the heart is opened to someone, one lets that person partake in one's emotional self, and even the centre of it as in 13). Pouring out what is inside the heart as in 14) makes the whole content visible (and, via the mapping KNOWING AS SEEING, known) to another person. That this is done verbally, rather than through a showing of emotions (though that may be part of it, too) must be put down to the idiomatcity of the expression, it does not follow from the mappings.

Group 2

Group 2 contains examples of expressions dealing with the location of the heart relative to other entities and relations between the heart and those entities. These concrete relations between physical entities are used to express a range of abstract relations between abstract entities. 15) to 25) are discussed below as examples of group 2. 20) to 25) raise the issue of narrowly idiomatic expressions and how they can best be treated in the CTM-framework.

If one feels that someone (or something) else is in control of the centre of one's emotions, this may be expressed as the other person possessing the heart (CONTROL AS POSSESSION²⁰): the other person may *keep the heart*, *give it back*, or *throw it away* (though such expressions may be less conventional). This mapping and the familiar CENTRE OF EMOTIONS AS HEART, may be united into the more specific mapping CONTROL OVER CENTRE OF EMOTION AS POSSESSION OF HEART. The heart may be given by the owner (17), taken without (16) or against (15) the owner's will, corresponding to how one feels about the way control over one's centre of emotions was transferred. In 18), unlike 19), it is not specified who is now in control, but someone is. Although usually these expressions are used when talking

about love (which of course is a very salient emotion) a sense of the possessor being in control over one's entire emotions (not only love) is not absent. 16) involves, in the second part of the sentence, the X AS PERSON mapping as *sucker* is usually a derogatory term for a person. 20) also involves the removal of the heart, but as already observed, the mapping which produces the correct semantics is ESSENCE OF IDENTITY AND CHARACTER AS HEART (as well as the X AS PERSON). Though the CENTRE OF EMOTIONS-mapping could be chosen, I propose that the correct mapping is selected on contextual grounds, as the correct meaning of a word is selected with help of the context.

The expressions 21) to 23) are at least partly idiomatic; one may suppose that they result from the established metonymy (PERCEIVED) PHYSICAL EFFECT OF EMOTION STANDS FOR THE EMOTION (Lakoff 1987:382) though in these cases the physical effect is evidently overstated. If one is suddenly frightened or alarmed, the upper part of the body or at least the inner organs of the chest area are felt to move upward with the typical sudden intake of air and in strong cases one may feel one's heart beat in the throat. The heart as a salient organ in the chest area and cause of heartbeat would somewhat naturally be selected as the subject of dislocation. Diametrically opposite to a general upward dislocation is the general downward dislocation that is felt when discouraged or dismayed (22, 23), one feels pulled down: unlike the case of sudden fright when the body is put into a state of high alertness, when discouraged, the body is put into a state of laxness. Here the choice of the heart as the dislocated part is not entirely clear, though similar semantics follow from using other parts like shoulders: *He sat on the bed, shoulders down, face averted, like a refugee* [BNC FP7 1989].

The high uncertainty here is indicative of the degree of idiomatcity. This is also felt in 24) and 25) actually in contradiction semantically to 18). Although there is a sense in which much heart-language may be argued to be idiomatic, I take idiomatcity narrowly as an attribute of expressions that sprang from mappings that are no longer evident from elsewhere in the language.²¹ Additional indications are severe restrictions to a particular wording (*He lost the heart* cannot even point to the sense in *Don't lose heart!*), relatively easy translations with little loss (*Don't be discouraged* is equivalent) and semantic contradictions as the above. Particularly this last point suggests to me that synchronically there is no mapping present in narrowly idiomatic expressions. As such, narrowly idiomatic expressions fall outside the focus of this application. The CTM, however, nowhere acknowledging the possibility of mappings falling into disuse, would consider mappings detectable in idioms, as elsewhere, as mappings present in conceptualisation.

Group 3

Expressions in group 3 deal with attributes of the physical heart and express characteristics of the emotional self. The examples discussed below are interesting in that they show how inference patterns from the source domain are valid in the target domain.

In 31) and 32) we encounter metaphorical mappings that go beyond heart-language: the talk of temperature in the emotional domain. I suggest this follows from

¹⁹ Similarly, Lakoff & Johnson argue for a mapping "EMOTIONAL EFFECT IS PHYSICAL CONTACT" (1980:50) on grounds of other data.

²⁰ Further justification for this mapping below

²¹ The expressions under discussion could be related to a focus on the emotion of courage; the heart consequently viewed as standing primarily for the centre of courage and by metonymy SALIENT PART STANDS FOR WHOLE the heart stands for courage per se. *Brave heart* could receive some explanation in this way, though I would hold that this focus is fossilised and no longer active in productive (heart-) language.

the mapping ABSTRACT SENSATION AS PHYSICAL SENSATION, a general mapping of which KNOWING AS SEEING (encountered above) as well as an array of other more specific mappings like EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH and Lakoff's "INTIMACY IS PHYSICAL CLOSENESS" (1987:448) are part. Accordingly, English speakers *feel heat* and also *feel sadness*. Specifically in this case, temperature sensation (cold, cool, warm, hot) is used to describe emotion and how it is perceived (PERCEPTION OF EMOTION AS PERCEPTION OF TEMPERATURE suggests itself): *a warm welcome, warning to one's work, someone warning up, having warm feelings towards someone, speaking with warmth*, etc. all speak about sympathetic emotional involvement, whereas *warm* is substituted for *cool* or *cold*. Little or no emotional involvement with strongly negative connotations is communicated. As far as hot can be used in these examples, a sense of excessive and almost violent emotional involvement results which accords well with Lakoff and Kövecses' mapping ANGER AS HEAT (Lakoff 1987:383). Warmth seems to be the most positive of the emotional temperatures; likely because we feel this temperature to be most comfortable as physical sensations; hot, cold and even cool are temperatures humans don't feel comfortable with for prolonged periods of time. It is now no surprise that one may also speak of the emotional temperature of the heart (as the centre of emotions) in ways consistent with the above examples of emotional temperature as indeed we find in 31) and 32). The resulting semantics follow predictably.

Other aspects of the physical sense of touch that get mapped onto the emotional domain via EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH are *soft / tender / hard / rough / edgy / smooth / slippery / slippy* and similar physical characteristics that can be readily perceived from touching. The resulting target domain meanings are fairly closely linked to the meanings in the source domain: if one touches something soft and tender, it does not hurt, but the object might get hurt rather easily (a softie might cry often, if one's heart is too soft and tender one might suffer too much emotionally). Something hard cannot be hurt but neither is it influenced much by touching; something rough might hurt if touched, etc., etc. When applied to heart language, physical touch language appears very productive; beside conventionalised expressions like 33) and 34), semi-conventional or readily understood novel expressions may be constructed with nearly any of the basic-level adjectives for physical touch perception. This also works on the more general mapping level EMOTIONAL SELF AS PHYSICAL SELF: *he's rough, I'm smooth*, etc. 35) results from the same mechanism: a stone is a prototypical example of something hard and also cool.

Group 4

Group 4 consists of the remaining expressions of our data which are thematically varied. Expressions 53) to 60) have been selected for representative discussion.

If something is according to one's centre of emotions as in 53), it is according to the desires that issue from there (rather than from rational or utilitarian thoughts), as also in 54). It is possible that a similar conception is behind 55), i.e. a breakfast that is according to one's desires, but it appears more likely that this use is a fossil from mappings once active.

60) assures one that something is done (a family loved, for example) with all emotions, and there are no contrary emotions. The sense of 'very much', 'without reservations' follows from that. If something is from the heart (56), it is authentic in that what it communicates truly originates from (or corresponds to something at) the

centre of one's emotions rather than having no true emotional basis, or being merely superficial. The latter is excluded by the place of origin being the heart and the heart being in central location inside the body, which is here seen as the emotional self. We have seen above how centre location has associations with typically and identity (see also Lakoff 1987: 274-5). A mapping such as SUPERFICIAL AS ON SURFACE, PROFOUND AS DEEP hence only states the obvious. An even deeper (the bottom of something being its deepest place) and hence more profoundly felt communication is assured in 57). The *come from* suggests some motion, perhaps of a feeling or thought travelling from its place of origin to expression. As such it could be viewed as an instance of the X AS OBJECT mapping and the communication process as a journey along a path with start and destination (COMMUNICATION PROCESS AS AN OBJECT'S JOURNEY ALONG A PATH²²). If something comes straight from the heart (58), the path is direct and no intermediate stops took place. Hence it has not undergone any change and still resembles the emotion as it was in the heart. A heart-to-heart talk (59) is similarly authentic communication, yet what is communicated not only originates in the heart, but since the hearts themselves are perceived to speak to each other, there is no path and hence no intervention from any other faculties. The communication remains fully representative of the emotions in the heart. We are all familiar with the fact that we cannot usually express our emotions as they are felt within, at least not in their entirety. Rather we feel constrained in various ways (by social conventions, hearer's reaction, etc.). In a heart-to-heart talk, then, two parties express their emotions on a certain topic without consideration of constraints which results in an extremely frank conversation.

3 Results

Above I have, with help of a CTM-style analysis, extracted a number of mappings underlying English, particularly English heart-language.

First, we have found that the metaphorical meanings of *heart* can be shown to follow naturally and differentially from the physical (blood-pumping organ) meaning and merely two general mappings (X AS PERSON and EMOTIONAL SELF AS PHYSICAL SELF). If any of the meanings resulting from those mappings are lexicon-listed (I shall argue below that this is likely the case), the 'blood pumping organ'-sense of *heart* naturally takes the role of a central prototype, to which the other meanings are related via mappings. We found that the proposed mappings are able to provide a clear explanation for certain meaning nuances (*heart* as central location with nuances of typicality) that would otherwise have to be regarded as accidental.

Second, the more specific mappings responsible for individual senses have been identified as the following:

MACHINE AS PERSON, PROBLEM AS PERSON, PLACE AS PERSON
CENTRE AS HEART, VITAL PART AS HEART
CENTRE OF EMOTIONS AS HEART
ESSENCE OF IDENTITY AND CHARACTER AS HEART

We have seen that these follow from the more general mappings and the literal beliefs about the source domain, specifically the heart (that it is the most vital part, at the centre of the body, etc.) and the body (central parts constitute identity, injury to central parts is serious, etc.).

²² This mapping is formulated on the basis of an investigation into the metaphors of communication in Reddy 1993. Though this particular wording is not applied there, it fits in with his proposed conduit metaphor.

Third, in analysing our English heart-language data, I also showed how the whole of the expressions analysed follow from the above mappings in interaction with other mappings not specifically to do with heart-language. These are:

X AS PHYSICAL OBJECT
 INFLUENCE AS PHYSICAL CONTACT
 CONTROL AS POSSESSION (CONTROL OVER CENTRE OF EMOTION AS POSSESSION OF HEART)
 ABSTRACT SENSATION AS PHYSICAL SENSATION
 KNOWING AS SEEING
 EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH
 PERCEPTION OF EMOTION AS PERCEPTION OF TEMPERATURE.
 Furthermore, the following metonymies have been ascertained:
 CENTRE OF EMOTIONS STANDS FOR EMOTIONAL SELF.
 (PERCEIVED) PHYSICAL EFFECT OF EMOTION STANDS FOR THE EMOTION

It has also become apparent, however, that mappings are not always completely sufficient to account for the meaning and form of expressions. These cases have been identified as narrowly idiomatic. I suggested that these cases are fossils of mappings that have fallen into disuse and are no longer evident in other parts of the language. The ascertained mappings nevertheless go a remarkably long way towards explaining wording and meaning of heart-language in an exact manner.

4 Theoretical considerations

While the need for hierarchies, CTM's definition of metaphor and the issue of narrow idiomatically have been discussed above, more fundamental theoretical questions have not been addressed directly so far. The following comments aim to point out particular claims and premises of the CTM which, on the basis of the present study, appear vulnerable to attack and in some instances to suggest possible alternatives without reaching solidly argued conclusions. The discussion is also intended to serve the purpose of placing the findings of the above analysis into a context larger than that of the CTM.

4.1 Generation or motivation?

It would seem that having established mappings responsible for English heart-language expressions, the mental lexical entry for *heart*, for example, now only needs to consist of the physical sense of 'blood-pumping organ', the other senses being generated via mappings. The expressions so generated, however, would of course be both the conventional AND any number of novel expressions to do with *heart*. Since speakers of a language clearly do have access to information on conventionality, however, this information has to be registered somehow. According to the CTM, conventionality is captured by listing individual lexical items, phrases or idioms in the lexicon (L&J 1980:52, 55). Consequently, in the case of conventionalised expressions, mappings do not generate senses but rather substantiate and explain polysemy (or in fact claim polysemy where otherwise homonymy would need to be postulated). Novel meanings, on the other hand, are generated by mappings.

Information on conventionality, however, does not necessarily have to be stored as polysemous senses in the lexicon, in fact such an account of conventionality appears overly simplistic: First, it is generally acknowledged that conventionality is a matter of degree (so also for example Sadock 1993:54, Keysar et al. 2000:586) and so a binary listed/not listed distinction appears less than fully appropriate. Second, it

would be very difficult if not impossible to list all conventional mapping-created meanings and ranges of application of all words and phrases in the lexicon. For example, we would need to add to the entries for *break*, *pierce*, *tear*, etc. something like 'also of non-physical things to mean an action that affects the object in a similar way as a physical object is affected by the physical action, something that is not only very hard to do but also imprecise, extremely clumsy and unnecessary, given that, at least in our analysis, those meanings follow nicely and differentially from the mappings. If we assume that degrees of conventionality are taken note of elsewhere (a part of memory keeping track of frequencies of collocations in language input could be one direction of future investigation into this mechanism), we can let mappings generate meanings of words and expressions. Thus we potentially arrive at a far more efficient setup which, on the premise that the brain organises information in the most efficient way, appears more plausible. Naturally, in the case of often used mappings or parts of mappings it will be more efficient for the brain to list the mapping-created meaning with words or phrases instead of having to deduce it in each instance of use. The 'centre' sense and the 'centre of emotions' sense of *heart*, for example, are used so frequently that they are likely lexicon-listed meanings of *heart*. When mappings change, the lexicon listings for very conventional expressions might stay the same. I suggest that this is what happened in cases of narrowly idiomatic expressions like the ones we saw above. Generally idiomatic phrases or expressions, as opposed to narrowly idiomatic ones, may be characterised as phrases that are conventional and fixed in the lexicon, yet correspond to a productive mapping.

4.2 Psychological reality

The CTM's claim that mappings (or, for present purposes, metaphor) involve cognitive faculties other than strictly linguistic ones, is not particularly controversial. As Sadock points out, phenomena very similar to metaphorical language occur outside language: for example when "a lion on a warrior's shield suggests that its bearer is brave" (1993:42). Theories that treat metaphor as a pragmatic phenomenon (as for example Relevance Theory, Sperber and Wilson 1995) inherently propose that metaphor involves cognitive faculties other than strictly linguistic ones. That CTM-style mappings are cognitive appears therefore not without wider support. According to the CTM, language users do not necessarily perceive mappings because "the system of conventional conceptual metaphor is mostly unconscious, automatic, and is used constantly, with no noticeable effort, just like our linguistic system and the rest of our conceptual system" (Yu 1998: 33). Mappings hence cannot be verified by intuition but only by inference.

Psycholinguistic experiments on the detection of mappings have been somewhat inconclusive; some research (Keysar et al. 2000) has shown that mappings are not accessed in the comprehension of the conventional language samples used in the experiment, but other research has shown that violating orientational mappings slows reading which suggests a connection to mappings in comprehension under certain circumstances (Langston 2002). It appears fairly clear, however, that mappings are accessed for novel metaphor comprehension (Keysar et al. 2000). Our investigation of heart-language above has shown that a wide range of possible expressions is found between conventionality and novelty and the transition to novel expressions is nearly seamless. This suggests that mappings are needed and accessed when talking 'heart-language' in its different shades of conventionality and that the conventional/novel dichotomy insisted upon by some may only strictly apply to the extremes of a continuum. I have argued that at the very conventional end of the spectrum (narrow

Idiomatcity) mappings are unlikely to be present, but in the remaining expressions analysed, the interplay between the senses and nuances of *heart* and the mappings' ability to explain them (as pointed out, for instance in the discussion of example 48) suggest the presence of the mappings discovered, as does the already mentioned difficulty of capturing the precise figurative meaning of certain words involved which follows more naturally via mappings. If it can be established that the same logical inference patterns (reasoning) apply in the two domains of a mapping, the presence of a psychologically real mapping is yet more likely. We found such inference patterns for example in the analysis of 5), the group 2 expressions to do with a transfer of the heart and many expressions in group 3. Finally, as mentioned earlier, if a mapping is very productive (i.e. is evidenced in a large number of expressions) it naturally appears far more justified than if it can only be shown to produce one or two expressions found in language.

Though giving general arguments in support of the psychological reality of mappings, the CTM, at least in practice, assumes a mapping to be present whenever a mapping can be formulated that correctly motivates a given language expression or group of expressions. This seems inadequate in consideration of the weight attached to proposed mappings (namely psychological reality and cognitive processes, not to speak of conceptual understanding). Not all expressions which could be construed to result from a mapping, it would appear, do establish the presence of a plausibly psychologically real mapping, less yet the presence of the particular mapping proposed (as opposed to the possibility of there being a different source domain or a shared source that is common to both domains²³). Some support for the psychological reality of proposed mapping along the lines of the above arguments therefore has to be provided, and some argumentation as to why a particular domain should indeed be the source domain of an expression should be given wherever reasonable. This might prevent such peculiar claims as that the expression *What!* (said when things start to get out of hand) results from a mapping "EXTERNAL EVENTS ARE LARGE MOVING OBJECTS", the moving objects in this special case being horses (Lakoff, 1993:222).

4.3 Fixed conceptual mappings or dynamic linguistic rules?

The CTM holds that mappings are fixed correspondences between conceptual domains; aspects or the whole of the target domain are conceptualised via these very mappings. Although the theory proposes some well-argued internal reasons (the building up of understanding from concrete to abstract seems logical) and points for support to empirical observations which are borne out in the above analysis (inference patterns along mappings, mappings and their manifestations in language mostly following the concrete/physical to abstract/non-physical direction), the question after the legitimacy of the claim that mappings are necessary to conceptualise the target domain, at least partly, is very contentious. It would require a whole separate investigation to be able to suggest what exactly the contribution of metaphor (and CTM-mappings in particular) to understanding consists of, if anything. It furthermore appears, as noted also by Ortony (1993:5), that the question of whether and to what degree metaphor creates new understanding is ultimately only partly an empirical question. Nevertheless, the following three considerations will allow some preliminary conclusions to be drawn:

First, though the mapping direction is remarkably consistent, it often appears only to be sustained because of the vague description of what can serve as a concrete source-domain (concepts grounded in embodiedness). Even then it is not sustainable in 100% of cases (X AS PERSON applied to hand as in *when you give to the needy, do not let your left hand know what your right hand is doing* [Matt. 6:3, NIV] for example, is an exception). Furthermore one can think of cases where a target domain becomes a source domain for a further mapping: ARGUMENT AS WAR (Lakoff and Johnson 1980:4) is a mapping but also WAR AS PERSON as in *Eugene S. Jones' A Face of War is a feature-length documentary shot in 1966, but not released at the cinema until 1968*[BNC:EE1 114].

Second, given the emphasis, in practice, on the partial conceptualisation of the target domain in terms of source domain, the claims that only source domains are directly understood and target domains are understood via source domains (the building up of understanding) remains largely unsubstantiated. We may add that a complete conceptualisation via mapping would be hard to claim for the data in our analysis and therefore it appears that complete conceptualisation via mapping is extremely rare if it does occur at all. Thus, even clearly abstract, not directly understood concepts (according to the CTM) like CENTRE OF EMOTIONS are actually partly (possibly fully) understood in their own terms.

Third, even if the building-up-of-understanding claim is dropped, logical inference patterns can be explained if we allow the source domain to play any understanding-enhancing role.

In view of these considerations, the CTM-position concerning grounding and building up of understanding appears difficult to sustain. If we allow for the source domain to have some sort of understanding-enhancing influence on the target domain (the details of which would need to be worked out in greater detail), we would be treading on more defensible ground. Additionally, mapping rules, such as we found useful above (X AS PERSON, etc.), could be posited because mappings are no longer needed for the very conceptualisation of the target domain.

Finally, the usefulness of hierarchies, (general and specific level mappings) and interaction between mappings in accounting for the data under investigation above, lets it appear plausible that mappings are not isolated and spontaneous but form a permanent system of rules (likely including mapping rules) held in long-term memory. That mappings often produce, motivate and interact with conventionalised meanings and expressions further supports a fixed rather than completely dynamic nature of mappings: a process in which even a conventionalised abstract meaning, for example, would be available only after literal concepts in the context are compared and a suitable isolated mapping established (which would be discarded again shortly after) seems not only complicated and inefficient but the observed consistency of the result would be somewhat surprising.

²³ A possibility pointed out by Jackendoff and Aaron (1991:328).

The data**Group 1**

- 1) But to be honest it has broken my heart to leave Bangor. [BNC K2U 719]
- 2) Why do I fear my heart by recalling our words then? [BNC HGS 1603]
- 3) He smiled at her, his heart breaking. [BNC CR6 22]
- 4) Bearing in mind, the style of communication you adopt with your youngster could save you a lot of aggravation and heartache. [BNC B10 1772]
- 5) My child you used and pierced my heart a hundred times and deep. [BNC CEM 1846]
- 6) The new awareness of her love for him stabbed again at her heart. [BNC H9H 2358]
- 7) Eudocio Ravines, the former Peruvian Communist, describes how in 1917 'all the events in Russia went straight to my heart' [BNC GIR 311]
- 8) Luzenzo's chest rose and fell as if he was identifying with the loss of the Corosini family, and that touched her heart. [BNC H94 3456]
- 9) She accepted his warning without comment, but she took it to heart. [BNC EVC2394]
- 10) They understand children and they have the children's best interests at heart [BNC CH4 1023]
- 11) It is impossible to be truly non-violent without being utterly fearless, and for that reason non-violence and cowardice go ill together because the coward is fearful at heart. [BNC C9B 440]
- 12) The place was close to his heart. [BNC CH2 100171]
- 13) Marje wept as she opened her heart during interviews for the biography. [BNC CBC 4396]
- 14) I'd phone him up and pour out my heart in a way I couldn't to anyone else. [BoE]

Group 2

- 15) ... the man who went on to become world-famous singing star Frankie Vaughan says she stole his heart the instant he saw her. [BNC K52 7253]
- 16) She took my heart and squashed the sucker flat. [BNC AOL 2144]
- 17) ... gave his heart to the building of Westminster Abbey... [BNC BMV 922]
- 18) In this most strange place and in this short moment Nicholas lost his heart and knew for certain that at last, at very last, without doubt or question, he had fallen in love. [BNC ECU 2606]
- 19) Four years after that Hunt Ball, where Nicandra lost her heart for ever, Aunt Tossie broke into her moneybox to endow the marriage of Nicandra Constance with Andrew Julian. [BNC H71 1815]
- 20) This new wave of anonymous buildings, designed to slip as quickly as possible through local authority planning procedures, has ripped the heart out of Hammersmith. [BNC A24 33]
- 21) My heart was in my mouth when I walked into her office. [BoE]
- 22) My heart sank when I saw the hill. [BNC C9R 400]
- 23) When she stepped into the helicopter in front of me, I had no alternative but to follow her with my heart in my boots. [BNC FPN 371]
- 24) Take heart! [BNC C9R 2591]
- 25) James and his besiegers lost heart and abandoned the siege. [BNC A07 537]
- 26) The blonde teenager, who had set her heart on becoming a hairdresser, was also upset at failing to find a job. [BNC CBF 11893]
- 27) I tried to learn some lines but my heart wasn't really in it. [BoE]

- 28) Neil's heart is in the right place. [BNC AK2 1144]
- 29) She could still hear the sound of Rose Trivet crying her heart out in another part of the house. [BNC CCD 350]
- 30) You will only be able to infer their Celtic roots -- they're not a band that wear their heart on their sleeve. [BNC HWX 2157]

Group 3

- 31) But Maggie had a warm heart and she looked for the best in people. [BNC BP1 205]
- 32) Gabriel and his cold-hearted darling, Bathsheba Everdene, stared at each other. [BNC FRE 329]
- 33) He probably thought I had a soft heart. [BNC HLU0 2791]
- 34) A good organiser is totally objective, even downright hard-hearted in choosing venue, style, speakers and programme. [BNC ADK 542]
- 35) I am convinced that you have a heart of stone. [BNC J103392]
- 36) The men were going to see some action, or 'have fun' as they put it, and that was quite enough to render them light-hearted and care-free. [BNC AR8 1100]
- 37) She walked away, her heart heavy. [BNC JYB 3655]
- 38) At once Bathsheba's heart felt lighter. [BNC FRE 1805]
- 39) Normally he was a model husband and father, kind-hearted and always laughing. [BNC ADM 321]
- 40) I did not have the heart to tell her that Ken's beloved instrument was now a thousand tiny splinters after Trev Proby sat on it. [BNC FR9 781]
- 41) That heart is Welsh, and it is his Welshness which gave him an inner security that enabled him to come this far. [BNC AK2 1146]
- 42) In her largeness of heart and her sincere desire to help all who needed it, Miss Green has never spared herself. [BNC AL8 825]

Group 4

- 43) It's so heartless and unfair after all you've done. [BNC AC2 1714]
- 44) But in that case I must warn you that I have no heart. [BNC FPU 1312]
- 45) ... a radically new and immensely powerful device which remains the heart of every modern radar. [BNC B7M 1733]
- 46) Indeed, the conditions created by the electoral system were seen as being the heart of Britain's current problems. [BNC J57 1703]
- 47) The feeling is very much that of a country house hotel in the heart of London, a retreat from the busy streets outside. [BNC, BPF2030]
- 48) Daimler-Benz, for example, has bought a large site on Potsdamer Platz, in the heart of the new Berlin. [BNC ABE 2574]
- 49) I know every word of it by heart. [BNC AAV 747]
- 50) Yet, in his heart, Cranston knew he was a hypocrite. [BNC K95 2704]
- 51) She was keeping her promise to herself, but in her heart of hearts Tess knew that eventually she would accept him. [BNC GW8 1389]
- 52) This plant has heart-shaped leaves with long stalks, which are olive green and slightly corrugated. [BNC CBL 977]
- 53) They had been thinking of a job in Parma to which I would commute daily; but this one sounded very interesting, something after my own heart. [BNC G3B 1822]
- 54) Oh, Mary of my heart's delight. [BNC ADM 2197]
- 55) A hearty voice of thanks for the chairman [BNC A73 144]
- 56) 'Oh, good!' said Francis from the heart. [BNC AOL 65]

- 57) If you ever find enough human emotion to fall in love then I can only pity the victim from the bottom of my heart,' she said savagely, lashing out in her pain like a wounded animal. [BNC JY5 2669]
- 58) Right from the heart. [BNC CFV 582]
- 59) He and I had had a heart to heart in the hotel following some comments supposedly made by him about me in the press, more particularly in the Sun. [BNC BMM 2053]
- 60) My own family I loved with all my heart. [BoE]

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