

WHAT'S ON YOUR MIND IS NOT ON YOUR BRAIN – HOPEFULLY

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Received: December 9, 2019

Accepted: December 17, 2019

Abstract: The mind-body question is frequently framed in terms of “how the brain creates the mind” (Damasio 1999). The goal of this paper will be to contribute to the debate by a linguistic study of the words *mind* and *brain*, using data drawn from the British National Corpus, the Oxford English Dictionary, the Corpus of Contemporary American and Webster’s Dictionary. Evidence shows that the folk-concepts of ‘mind’ and ‘brain’ imply the causal priority of the mental over the physical. This converges with the conclusions of Penfield (1966), who proposed that “one might well say that the brain of man is molded by his mind,” a position also defended by Eccles 1994.

Keywords: collocations, corpus linguistics, mind-body question, self-consciousness, folk-concepts

Resumen: El problema mente-cuerpo se presenta con frecuencia en términos de “cómo el cerebro crea la mente” (Damasio 1999). El objetivo de este trabajo es contribuir al debate mediante un estudio lingüístico de las palabras *brain* y *mind*, a partir de datos extraídos del Corpus Nacional Británico, el Diccionario Inglés de Oxford, el Corpus de Inglés Americano Contemporáneo y el Diccionario de Webster. La evidencia lingüística muestra que los conceptos populares de ‘mind’ y ‘brain’ implican la prioridad causal de lo mental sobre lo físico. Esto coincide con las conclusiones de Penfield (1966), quien propuso que “uno podría decir que el cerebro del hombre es moldeado por su mente”, una posición también defendida por Eccles 1994.

Palabras clave: colocaciones, lingüística de corpus, cuestión mente-cuerpo, autoconciencia, conceptos populares

The remarkable progress in human neurophysiology has led some researchers to address the body-mind question by attempting to derive the mental from the physical, and to speak consequently of “how the brain creates the mind” (cf. Damasio 1999). This poses the problem of how a mere network of electrochemical circuitry could ever set itself the task of trying to understand its own operations, as Damasio is trying to do in his research, a project which presupposes self-consciousness, i.e. the ability to stand outside oneself and view one’s own

person from the vantage-point of someone else. Jaki (1989: 220-221) argues that such self-consciousness is strictly impossible for any entity that is composed entirely of physical parts, as it would entail that one part of that entity would have to be outside of the entity itself, i.e. not part of the entity – an obvious metaphysical impossibility. The non-reducibility of the mental to the physical demonstrated by Jaki's argument opens up the possibility that the chain of causality might flow in the opposite direction from that posited by Damasio, a position defended by Eccles 1994 in his book *How the Self Controls its Brain* and corroborated by our daily experience of freely-willed bodily actions. As physicist and philosopher Antoine Suarez (2008: 4) puts it, if brain operations are mere physical processes completely determined by the past history of the physical universe, it is not clear how they can produce the desire for 'not being completely determined by the past' characteristic of human beings in their universal quest for freedom.

The goal of this paper will be to contribute to the debate by a linguistic study of the words *mind* and *brain* in English and the various collocations in which these two nouns are found, with a view to describing the folk-concepts attached to these words (in the sense of Wierzbicka 1992). The data will be drawn from both corpora and major dictionaries for both British and American English – the British National Corpus (BNC) and the Oxford English Dictionary (OED) for British usage, and the Corpus of Contemporary American (COCA) and the Webster's Third International Dictionary (W3D) for American. A total of 1000 tokens were examined from the two corpora – 250 for each of the two nouns in each of the two corpora.

The first finding to emerge from the examination of the corpus data was that over 70% of the uses of the noun *brain* referred to the physical organ, in both varieties of English: typical contexts were represented by sequences such as *brain tumour*, *brain surgeon*, *koalas have small brains compared to other marsupials*, etc. In contrast, the noun *mind* was never used to refer to the organ located in the human skull – an observation confirmed both by the OED and the W3D, neither of which records this sense for this lexical item. The latter was found to refer rather to memory (*to keep in mind*), thought (*what is on your mind?*) and intention (*I had a mind to call her right then and there*). It was observed in the corpus nevertheless that the noun *brain* was used in a number of contexts referring to the mental realm. In such uses, it seemed practically synonymous with the noun *mind*. In most of these cases, the motivation behind the choice of the noun referring to the cerebral organ could be discerned fairly easily from the context. Thus in the following instances the brain is opposed to some other body part, with both organs being given a metaphorical construal:

- (1) I'm prepared to follow my heart rather than my brain and predict a win (1-0) against Arsenal tonight. (BNC)
- (2) ... said Tom Kean carefully, reading the paper again to convince his brain as well as his eyes. (BNC)
- (3) Explore the city in chunks that are easy on the feet and the brain. (BNC)
- (4) The objective of the party was "to secure for the producers by hand or by brain the full fruits of their industry, and the most equitable distribution thereof ..." (BNC)

In one case, a correlation was made with the whole body, of which the brain is but one part:

- (5) When you surf Pipe, you've got to be ready. Your body's got to be in harmony with your brain. (BNC)

In another case, the noun *brain* was used in correlation with the noun *mind* to provide a synonym which avoided the repetition of the same word in close sequence:

- (6) my mind was in a turmoil, and my brain was perhaps a little numbed. (BNC)

The collocation *mind * numb* occurs 9 times in COCA, while *brain * numb* is less frequent, occurring only 3 times (the BNC showed no other instances of *brain * numb(ed)* besides example (6) above). Whereas with *mind* the adjective *numb* has to be interpreted metaphorically, this is not so clearly the case with *brain* in (6), as a physiological state might be intended here, with the loss of mental acuity being construed as a consequence of this state.

Other cases of possible ambiguity between physical and mental reference were also found. In (7), the use of the verb *operates*, and the parallel drawn with the hearer's grey matter suggest however a predominance of the organic denotation:

- (7) To meet him is to confront the unexpected and a brain that operates so quickly you need to engage your own grey matter at the gallop. (BNC)

Similarly in (8) below the allusion to audibility, and in (9), the image of the jamming of a mechanism, also suggest a physical reference, which may be transferred to a metaphorical target in these instances:

- (8) he stood in rapt recalculation, you could almost hear his brain working. (BNC)
- (9) she is learning to be patient with herself when, as she puts it, her brain "gets stuck". (BNC)

In (10) below, an ad for a rail company's passenger service, even though the brain is characterized as comprehending a clue in the first sentence, in the subsequent context it is treated as a physical object that can be placed in a traffic jam on the M1, opposed to the mind, and that has a left side:

- (10) You never know in the blissful silence of your train your brain might actually comprehend a clue in the Mephisto crossword. It will probably take two journeys before you actually get an answer. Now if you'd put that brain in a five mile tail back on the M1 it would probably have gone out of its mind. Especially the left side, which is in charge of logic.

Other collocates implying that the brain is construed as a physical or physiological entity include the verbs *use* (11) and *have* (12), the adjective *tireless* (13), and the prepositional phrase *from brain to paper* (14), which puts the brain on the same level as paper as one of the limits defining a physical motion:

- (11) The creator of the document has used his brain. (BNC)¹
- (12) Rocky knew which way to put his cashcard into the hole ... implying he had a brain and therefore could think for himself. (BNC)²
- (13) Many and varied were the personalities behind Arsenal's phenomenal success, and studying them constantly was the tireless brain of soccer's Napoleon, forever working out how to get the best from each of his players. (BNC)
- (14) The word-processor is a very powerful tool for the transfer of thought from brain to paper. (BNC)

Finally, four cases were found in which the noun *brain* was used in the construction of a physically-based metaphor:

- (15) Our small (feeds two) eggplant parmesan (\$17.99) was enough to open a rusty nostalgia valve in my brain. (COCA)
- (16) when you haul out a poem from the brain's back room, it feels like you own it. (COCA)
- (17) She prescribed a massage. Strands of Chinese music looped their way around my brain like a spider's web. (BNC)
- (18) I was talking to him, picking his brain, asking him some questions. (COCA)

Here the source of the metaphor is the physical realm, and *brain* functions first of all on this level to contribute to building up a physical scenario, which is then applied metaphorically to a target belonging to the mental domain.

The noun *brain* can also be used to unambiguously denote the mind, as in these instances:

- (19) is at the very top of all his career, and has a very sound tactical brain. (BNC)
- (20) trying to psyche myself up for Wild Palms – you need your brain on full alert to make head or tail of it. (BNC)

1 Cf. the common expression *to use one's head*, meaning 'to apply one's common sense to a problem'.

2 Note here how the possession of the organ of thought is construed as allowing its possessor to perform the action for which this organ is designed.

- (21) he threw himself into his work and eventually, with a good brain and a determination to achieve, obtained a qualification to become a surgeon. (BNC)
- (22) an angler with an active brain ... has not got enough challenge with one species. (BNC)

Here the notion of the organ is used to evoke the mental faculty associated therewith, and the noun *mind* could be readily substituted. *Mind* was also found to be able to fill in for *brain* after the preposition *through* (23-24) and the phrasal verb *turn off* (25):

- (23) It was the most bizarre thing I have ever witnessed. Powerful images raged through my brain. (BNC)
- (24) The idea for the first excursion flashed through his brain as he tramped across the middle of England from Market Harborough to Leicester. (BNC)
- (25) “Fragile,” he said. “I am going to turn my brain off and stagger downhill now. That was kind of a big deal.” (COCA)

Such contexts show the close association between the mind and the brain, attested in the dictionary sources in the expressions *brain/mind candy*, meaning ‘something entertaining but not intellectually demanding’, and *brain/mind food*, used in the sense of ‘something that stimulates the mind’. What is of interest for our discussion here is that whereas the noun *brain* can be used metaphorically to refer to the mind, the reverse is never the case. Since the natural direction of metaphor is from concrete to abstract (cf. Lakoff and Johnson 1980), this indicates that *brain* is the concrete term and *mind* the abstract one. This is confirmed on the grammatical level by the fact that the noun *mind* is frequently used with no article to denote an abstract unbounded state, as in *to bear in mind*, whereas this is never the case with the noun *brain*. The latter can however be construed as non-count in cases such as:

- (26) There's a small part of the population evidently that feels that if you eat brain you can become more intelligent. (COCA)

The reference nevertheless remains very clearly physical in this case.

Confirmation of the abstract vs. concrete distinction between the two nouns is also to be found in the very different effects produced by applying the adjective *right* to them. Applied to *mind*, this adjective has the sense of ‘characterized by normality’ (W3D), and refers to the functioning of the intellectual faculties; applied to *brain*, on the other hand, the adjective expresses the idea of a physical location opposed to ‘left’:

- (27) Who in his right mind would kill people indiscriminately? (COCA)
- (28) both left and right brain must be activated. (COCA)

The verb *infect* exhibits a similar distinction. With *brain* as its direct object, the infection is understood to be that of a physical virus or bacterium:

- (29) If the surgeon though is unable to perform his duties properly, for example if HIV infects his brain or he's coughing up tubercle bacilli because of pneumonia ... there's no way a hospital would continue to allow a doctor to operate under such circumstances. (BNC)

With *mind*, however, the infection must be construed metaphorically:

- (30) Baseball creates doubt. Failure infects the mind. (COCA)

The non-physical nature of the mind also explains why you can change your mind in the twinkling of an eye, but you cannot change your brain – at least not in the present state of medical science.

In the folk-concept of the mind attested by the linguistic data in English, the latter is conceived furthermore as being superior to the body, and consequently to the brain which is part of the latter. This is manifested in the popular dictum *mind over matter*, which refers to the mind's ability to overcome the inertia and resistance associated with the material realm, and to the fact that it is the mind that controls the body:

- (31) MIND OVER MATTER: The placebo effect is well-documented, just thinking that the pill will have a medical effect on you makes it so. (COCA)

It is significant in this respect that the noun *mind* is 4.4 times more frequent than *brain* in the whole BNC and 2.4 times more frequent in COCA: this manifests the greater role played by the mind in human life and experience, and its control over the brain, which converges with the conclusions of Canadian neurologist Wilder Penfield, who held that with respect to language “one might well say that the brain of man is molded by his mind” (1966: 236).

Another aspect of the superiority of mind over brain resides in the fact that the former is free to travel beyond the experiential limits of present time and current location, as attested by (32) below:

- (32) The flowers were lovely out-of-season ones, and they took her mind back more than 30 years to the May basket in which Dick had hidden her. (COCA)

Indeed, the mind is free to wander or drift, while the brain is utterly unable to move from its location inside its proprietor's cranial cavity. The collocation *free mind* occurs 12 times in the corpora; in contrast, the adjective *free* never collocates with the noun *brain* at all in either corpus.

This brings us to the title of this paper, and to the difference between having tumours on one's mind as opposed to having tumours on one's brain. With the concrete noun *brain*, the entity referred to is the physical organ and the tumours are consequently understood to be physical growths on this organ. With the noun *mind*, on the other hand, tumours are not construed as lumps of cancerous cells growing on the mind but rather as a mere idea

occupying the conscious focus of the person's thoughts, with the preposition *on* representing consciousness as a surface, i.e. the visible part of something which has other strata below the surface that are hidden from conscious awareness. Thus although tumours represent a life-threatening physical reality on the level of the brain, when they enter the realm of the mind they cease to be physical and become abstract ideas entertained as mere objects of thought.³

In conclusion, we have seen that unlike the brain, which is constrained by the limits of time and space, the mind enjoys freedom from both. It can range over all of time and space, and even imagine things that do not exist in physical reality:

- (33) try to realize that those vast crowds of people who will scream with laughter at the sight of you in a swimsuit, or on seeing you jogging, skipping, enrolling at aerobics classes or even taking a brisk daily walk, exist only in your mind. (BNC)

The freedom of the mind explains why “any scientist will claim to be the conscious and free author of the work he publishes, and not some zombie repeating things already pre-determined in the Big-Bang” (Suarez 2008: 7). Suarez and Eccles both argue that the indeterminacy of matter on the quantum level is what allows immaterial free will to control a material body: if the physical universe were completely pre-determined, there would be no room in it for the operation of free will. Since we all have the daily experience of moving our bodies freely, we could perhaps have inferred the necessity of matter not being completely pre-determined long before Heisenberg and his colleagues in physics. Modern neurolinguistics (cf. the Damasio quote about how the brain creates the mind given at the outset of this paper), and even some cognitive linguists – cf. Langacker (1987: 100): “what I call *thought* is the occurrence of a complex neurological, ultimately neurochemical event” – would like nevertheless to reduce the mind to the brain, and thoughts to mere electrochemical events. As pointed out by both physicist Paul Davies (1984: 62) and philosopher of mind Edward Feser (2005: 25, 172), however, electrochemical impulses jumping between neurons have no more meaning than electricity in a wire. In Davies' words:

An electrical engineer could give a complete and accurate description of an advertising display in terms of electrical circuit theory, explaining why and how each light is flashing. Yet the claim that the advertising display is nothing but electrical pulses in a complex circuit is absurd.

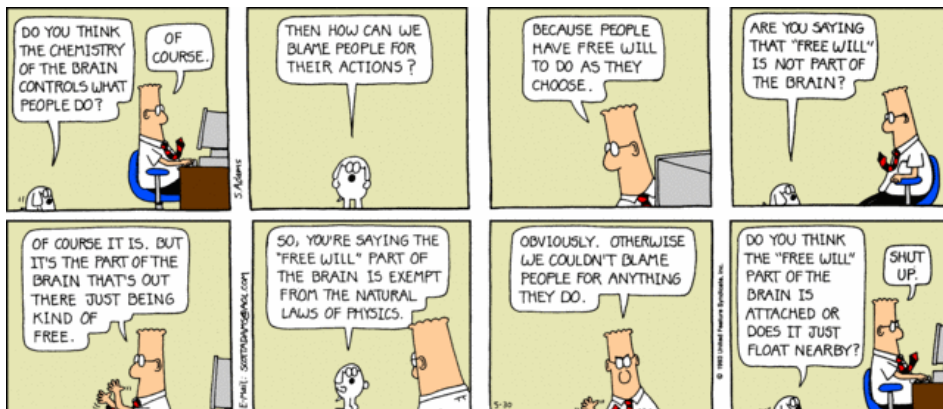
The reduction of mind to matter seems to be a case of the emulation of the science of physics by the human sciences, a misconception criticized by philosopher Thomas Nagel in *The View from Nowhere* (1986: 7-8):

For many philosophers the exemplary case of reality is the world described by physics, the science in which we have achieved our greatest detachment from a specifically human perspective on the world. But for precisely that reason physics is bound to leave undescribed the irreducibly

³ It may be noted in passing that both the OED and the W3D record the phrase *to have (something) on the brain*, used metaphorically to mean ‘to be obsessed with something’, as in *Tom had for the moment got Beethoven on the brain*. Here the source-domain of the metaphor is that of a physical ailment and so *brain* evokes firstly the organ and, through metaphorical transfer, the mind, which is consequently depicted as suffering from some sort of disease making it obsessed with something.

subjective character of conscious mental processes, whatever may be their intimate relation to the physical operation of the brain. The subjectivity of consciousness is an irreducible feature of reality – without which we couldn't do physics or anything else – and it must occupy as fundamental a place in any credible world view as matter, energy, space, time, and numbers.

The attempt to give a complete account of the world in physical non-subjective terms leads inevitably, as Nagel observes, to “false reductions or to outright denial that certain patently real phenomena exist at all.” It has been shown in this paper that the data of natural language, as embodied in the everyday categories of thought in English, attest to a very clear distinction between the brain, which is a physical organ located in the cranial cavity of a human being or an animal, and the mind, which is not tied down to particular space-time coordinates but is free to roam as far as it likes into the past or future, or over the vast expanses of the universe, and can even be conceived as being absent from the person to whom it belongs (cf. the adjective *absent-minded*). The existence of the distinction between mind and brain is based on the experience we have of our own selves, seen from an inside, subjective point of view. However the concepts of mind and brain are not purely subjective, since they can be communicated to other people by means of the shared sign-meaning pairings of the English language. Why would linguists ever want to deny that a distinction so overwhelmingly attested by the linguistic evidence exists? I would like to conclude by offering for your consideration the profound wisdom embodied in the following dialogue between Dilbert and his pet dog:



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