

# Electrifying Performances and Brains that Fuse: Metaphor and the Cognitive Function of Electricity

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## 1. Introduction

In 1980, Lakoff and Johnson with their seminal work *Metaphors We Live By* brought about a fundamental change in the view of metaphor for a great number of scholars. Ideas that had formerly been briefly touched on by e.g. Black (1962; 1979), but also developed by Reddy (1979), were now developed into a comprehensive theory. On this *cognitive, conceptual* or, “contemporary” (Lakoff 1993: 202-251) view, metaphors are “ways of partially structuring one experience in terms of another” (Lakoff & Johnson 1980: 77) or “understanding and experiencing one kind of thing in terms of another” (1980: 5). They are grounded in our experience (see 1980: 19) and part of a whole system of conceptual metaphors (see e.g. 1980: 7-9). Far from being literal and restricted to poetic language, they are fundamental to the way we perceive, think, act, and speak (see 1980: 5).

In the wake of Lakoff and Johnson’s work, a multitude of conceptual metaphor studies have been made in order to learn more about the coherent way in which the system of conceptual metaphors is structured. The majority of these have thus tended to focus on mappings between source and target domains, for example HEAT and ANGER. In the present paper, the relationship between the structure of metaphorical mappings and that of their experiential bases is highlighted. More specifically, the relationship between certain metaphorical mappings and our experiences of electricity is in focus.

As observed by Sinha (2005: 1538), “mind is socially distributed between people, and mental processes are supported by objects which embody and represent them.” Like many other objects, technological inventions and discoveries, are very useful in such processes (see Johansson Falck 2005).

Similarly, according to Gibbs (1994: 134), language understanding, whether figurative or literal, is founded on the “common stock of experiences” of speakers. Indeed, technological inventions and

discoveries seem to be particularly apt cognitive tools because they are highly functional in our lives, make up a living and activated part of the “common ground” (Gibbs 1994: 135) of speakers and are good reference points.

Section 2 below, discusses the cognitive function of electricity, which belongs to the select number of discoveries that have had a decisive effect on how we live and view the world. Like many other technological discoveries, electricity is highly useful in cognition processes because of the great impact it has on our lives. The versatility of the discovery, which was first used to provide telegraphy in connection with the developing railway services, is unmatched (see Sharlin 1967: 578). Today most people in the Western World are dependent on electricity in their daily lives.

## 2. The cognitive function of electricity

Through my analysis of metaphorical expressions based on mappings involving ELECTRICITY as a source domain, there appears a view on electricity as a powerful force that provides us with energy, and is used to run a number of different electrical appliances and machines. The mappings are also founded on our experiences of electricity as a force that is associated with electric tension and excitation and has the special property of attracting other objects. It is also of relevance for the mappings that electricity may be switched on or off and that it runs through closed circuits. If running through a body, it brings about tension in the electrified body, and if suddenly switched on, it may shock. The stronger the power of the current is, the more sudden the shocks are, and vice versa.

As is evident from my material, which consists of a large number of metaphorical expressions from the *OED*, *CIDE* and *20<sup>th</sup> CW*<sup>1</sup>, there is remarkable consistency among the instances with respect to the kinds of experiences that may be structured by means of our experiences of electricity. Almost all the mappings exemplify the use of electricity to

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<sup>1</sup> Further instances of metaphorical expressions involving electricity as a source domain can be found in Johansson Falck (2005:118-162). This paper is largely identical to chapter 5 in that dissertation.

conceptualise people's actions or emotions. The only exception is the use of electricity to describe very bright colours.

Primarily, it seems to be the different functions of the discovery and the effects it has on other objects that have motivated the mappings. Nearly all the sentences are based on the idea that PEOPLE ARE MACHINES, that is, the use of the source domain MACHINES to structure the target domain, PEOPLE.

As a result of the similarities we perceive between electric excitation or tension in different objects on the one hand, and our own feelings on the other hand, we may use electricity to conceptualise feelings of 'emotional strain' and 'excitement'. The figurative use of *switched on* in sentence (1) below, originates in the use of electric voltages or electric fields to conceptualise human tension, and the use of *electrified* in sentence (2) from the use of electricity to conceptualise 'excitement'.

(1) 1962 *Listener* 28 June 1131/1 His characters were understandably so permanently switched on that their moments of crisis were brought about by the small talk of others. (*OED*)

(2) She electrified (=excited) her audience with her vivid stories [T] (*CIDE*: electrify)

Because of the ease with which electricity electrifies other objects, it is useful when we want to conceptualise things, emotions or actions that are 'contagious':

(3) 1791 BURKE *Regic. Peace* i. Wks. VIII. 110 They [ambassadors] will become true conductors of contagion to every country which has had the misfortune to send them to the source of that electricity. (*OED*)

In sentence (3) above, *electricity* is used to refer to the bad effect that is spreading from the source. The potential of electricity to electrify other objects is highlighted by the term *conductors* and the fact that electricity is here coming from some kind of source. In this sense, electricity is very similar to contagious diseases which are easily spread from one person to another. The combination of something that has the quality of spreading in quite an effortless way and contagious diseases is most unfortunate. Even though, without further context, it is not possible to say precisely what the "thing" that is spread is, the combination of our experiences of contagious diseases and electricity makes the "thing" that is spreading

from the source something that is considered extremely dangerous. Electricity, which aggravates the consequences of the contagion and the misfortune referred to in the sentence, thus provides us with a means for emphasising that the “thing” is dangerous.

Quite frequently, the mappings behind the expressions in my material are motivated by the fact electricity is also a source of energy. An example is the use of the term to refer to ‘vigour’ and ‘vitality’ in (4) below:

(4) 1864 *lowell Fireside Trav.* 73 The natural electricity of youth. (OED)

In (5) below, the ability of electrified bodies to attract one another is made use of.

(5) 1858 HAWTHORNE *Fr. & It. Jrnls.* II. 24 The electricity of human brotherhood. (OED)

When used to describe what the ‘human brotherhood’ in sentence (5) is like, electricity symbolises ‘a strong force that strengthens the bonds between people’ with a strong sense of ‘solidarity’, ‘friendship’ and the like. My material also demonstrates that our experiences of electricity going into an object or a machine may be used to describe people who ‘start to behave in a certain way’, or people who ‘show certain feelings without being sincere in what they are doing’. According to CIDE and what is said about the phrase *switch on*, the image of a machine or some other artefact that is switched on may be used to activate the image of a person suddenly ‘switch[ing] on a particular emotion or behaviour’. Usually, this is said in a disapproving way and the emotion or behaviour that has been switched on is generally not considered to be a sincere one. Generally, the phrase indicates that something is done in a quick way:

(6) When a customer walks in, she switches on the charm. (CIDE)

(7) 1966 *Listener* 24 Mar. 426/1, I have always found it very easy to ‘switch on’ emotion. (OED)

Since electricity may be switched on very quickly, this goes for the emotion or behaviours that are figuratively switched on too. Like forces

that run machines, electricity may also be used to conceptualise the energy behind our emotions and our actions. The switching on of electricity becomes the switching on of our emotions or behaviours. There is, however, a mismatch between genuine emotions or behaviours and electricity that has been switched on. Unlike forces that run machines, genuine emotions or behaviours normally cannot be controlled in a totally conscious and deliberate way (cf. e.g. the metaphor FALLING IN LOVE IS PHYSICAL FALLING (see Kövecses 2002: 57)). The incongruity is important for the mapping. From the point of view of the person communicating a meaning by means of the phrase *switch on*, the discrepancies between genuine emotions or behaviours and controllable forces provide him or her with an exact mapping between forces that are switched on, and emotions or behaviours that are not sincere. For the person activating a meaning by listening to someone using the phrase in a metaphorical way, the very same mismatch is evidence of the fact that the emotions or behaviours that are said to be *switched on* cannot possibly be genuine.

In (8) below, a machine that has *a switch that begins to operate* is used to conceptualise ‘a brain that begins to function the way it should’:

(8) 1898 G.B. SHAW *Let.* 16 Mar. (1972) II. 16, I am very cross and incommoded by having to adapt myself [to a new secretary]. For three sentences, I feel resentful and quite put out. At the fourth the switch operates and I am on to the new line as if I had never dictated to anybody else. (*OED*)

Here, the concrete image of an electrical machine that begins to function is used to symbolise the abstract image of a mind that suddenly begins to work properly. On this mapping we are all equipped with an electric circuit inside our heads. Like the one we find in various machines, it may or may not work the way it should. When the circuit works, our brain functions properly, and when it is broken our brain cannot fulfil its purpose.

As is quite similar to the reactions that we may observe in objects that are electrified, electrification becomes ‘indications of exasperation, denial or surprise’ when referring to something happening to people.

(9) 1901 *Daily Colonist* (Victoria, B.C.) 4 Oct. 3/7 ‘Well, I’ll be switched!’ ejaculated the chatterer. (*OED*)

The mapping is based primarily on the phase when electricity goes into an object resulting in some kind of electric shock. Alternatively, our experiences of electric voltage, electric fields and the like affecting other bodies may explain the use of the expression to signify 'exasperation, denial or surprise' (*OED*).

In a number of mappings, which are again based on the idea that PEOPLE ARE different kinds of MACHINES through which an electric current is running, people function or behave in a way that reminds us of the way the machine in question works or behaves. Because electrified artefacts like radios and television sets have the ability of receiving information from the rest of the world when they are switched on, people who are *switched on* are 'aware of all that is considered fashionable and up to date' (*OED*).

(10) 1964 *House & Garden* Nov. 78/2, I want to open a department store which caters for switched-on people. (*OED*)

(11) 1967 N. FITZGERALD *Affairs of Death* viii.141 They must be more switched on than I gave them credit for being. (*OED*)

(12) 1970 D. DEVINE *Illegal Tender* ii. 25 Her mother wasn't switched on, she knew nothing of modern fashion. (20<sup>th</sup> *CW* 1999, 444)

In the same way machines that have been switched off cannot receive information about anything, and contrary to people who are switched on, people who are switched off are 'unaware of the latest news':

(13) 1966 *Punch* 29 June 946/1 But nowhere have I come across a word of guidance for the 'out' crowd – the vast, non-swinging, switched off, palateless, utterly without-it lot who dominate the community. (*OED*)

(14) 1982 *London Rev. Bks.* IV. xxiv. 7/2 What Amis's *sprezzatura* is saying is that most of his readers are out of touch, old fogies, Prufrock retreads, switched-off. (*OED*)

Not too different from the way in which electrified machines are affected by electric tension, someone who is 'irritated' or 'surprised' may also be described as someone who is *switched*. In this mapping, emotional strain is once again conceptualised as electricity.

(15) 1838 *U.S. Mag.* I 427, I'll be switched if I do. (*OED*)

(16) 1941 L. I. WILDER *Little Town on Prairie* ix. 99 'Well, I'll be switched!' said Pa. It takes you to think up a chicken pie, a year before there's chickens to make it with. (*OED*)

If we see PEOPLE AS MACHINES through which a current is constantly flowing, then the breaking of the current may be used to conceptualise a number of actions or emotions indicating the end of something or that something is losing its strength.

(17) 1967 B. PATTEN *Little Johnny's Confession* 54 Those couples who Having been switched off permanently, Are so very still. (*OED*)

Similar to the way in which we get rid of the noisy sound of a machine by switching it off, we put an end to something that we do not like, be it an emotion or an action, by simply switching it off.

(18) 1929 W. J. LOCKE *Ancestor Jorico* viii. 111 Without great discourtesy one couldn't switch off Binkie. (*OED*)

(19) 1934 *Discovery* Sept. 259/2 In this way she succeeded in switching off any unpleasant dream. (*OED*)

Accordingly, as if we were machines receiving information, we switch off when we 'cease listening', 'lose concentration', 'become bored' or 'are inattentive'.

(20) 1980 *Nature* 27 Mar. 379/2 The prose style is guaranteed to switch off all but the most ardent student. (*OED*)

(21) 1921 G.B. SHAW *Back to Methuselah* III. Don't switch off. Listen. This American has invented a method of breathing under water. (*OED*)

(22) 1955 *Times* 22 June 11/5 Does he seriously maintain that in a class of 24 boys, where 23 are working keenly and well, it is invariably the master who is to blame because No. 24 always 'switches off'? (*OED*)

(23) If he gets bored, he just switches off and looks out the window. (*CIDE*)

Again, it seems primarily to be the ability of electricity to function as a source of energy that motivates the mapping. Because electricity is

what runs the machines, switching it off means the end of the actions performed by the machines. Equally, when mapped onto what people are doing, or feeling, people who switch off become people who put in less energy in what they are doing. In other words, people who ‘cease listening’, ‘lose concentration’, ‘become bored or inattentive’ (OED).

By contrast with the close relationship between the switching on of an emotion or a certain kind of behaviour and emotions or behaviours that are not sincere, there is nothing artificial about ceasing to do or feel things by switching them off. The act of switching off pertains to our inability or unwillingness to preserve a certain behaviour or emotion rather than force ourselves onto a new one. Our problems with controlling our emotions in a totally conscious and deliberate way (see the discussion of the figurative uses of *switch on* in sentences (6) and (7) above) do not seem to affect the switching off of actions or behaviours.

Like our experiences of disconnecting electricity, our experiences of *fuses that blow* may also be used to indicate the end of something. According to CIDE, a person who *fuses* or *blows a fuse* is a person who stops working rationally because of too much mental strain.

(24) FIGURATIVE Your father’s brain seems to fuse (= stop working) if he has to take in too many new things at once. (CIDE 2001)

Here our knowledge of the small safety devices that blow if they are exposed to too strong an electric current helps us to describe a reaction, or possible reaction, of someone who is exposed to too much mental strain. In the examples, this is what happens if we are unable to relax or if we are exposed to too much information at one and the same time. Similarly, when fuses are used to conceptualise anger, fury, and the like, a person who fuses or blows a fuse is someone who stops working rationally.

(25) 1949 S. J. PERELMAN *Listen to Mocking Bird* x. 120 Relax or you’ll blow a fuse. (OED)

To some extent, the use of our experiences of fuses in mappings of which fury or other kinds of strong emotions are part is a result of the idea that people who are extremely emotional are people who have stopped working rationally. The mappings also seem to build on the match between electric tension and the kind of emotional strain that

typically precedes emotional outbursts, and the match between the blowing of fuses and the strong and sudden reaction of an emotional outburst. From the figurative use of short fuse and short-fused we learn that someone who tends to get angry easily is someone who easily fuses.

(26) 1980 G. THOMPSON *Murder Mystery* xix. 149 Postel's first-rate but he's got a short fuse. You lie to him and he'll walk off your case. (*OED*)

(27) 1979 *Observer* 16 Dec. 9/1 He's quite 'short-fused, but he knows how to control his temper. (*OED*)

As shown in Table 1 below, people who are familiar with the way fuses work are quite likely to be able to conceptualise aspects of the relationship between emotional strain and emotional outbursts all the way from the cause of the reaction to its consequences by means of metaphorical mappings involving fuses. If people are conceived of as machines run by electricity, the current that runs in the machine maps

Table 1. The use of fuses that blow to conceptualise emotional outbursts.

	MACHINES RUN BY ELECTRICITY	PEOPLE
1)	strong force; electricity	strong emotion
2)	internal pressure, electric tension	internal pressure, tension
3)	When the pressure is too high a fuse blows.	When the emotion is too strong the person "explodes"/bursts out with strong emotion
4)	When the fuse blows the current stops flowing and the machine stops working.	When the person bursts out (has his or her tantrum) he or she stops working rationally.

onto the strong emotion that the person experiences. The pressure and tension inside the container of the machine correspond to the internal pressure and tension in the person charged with strong emotion. The stronger the current in the machine is, the stronger the tension and the pressure inside the machine are. Similarly, the stronger the emotion the person experiences is, the stronger the tension in his or her body is. In

both people and machines too much pressure results in various reactions. The machine blows a fuse while the person has an emotional outburst. Since the machine is run by electricity, it will cease to function when the current is disconnected by the blowing of the fuse. Since the person who has an outburst is charged with strong emotion, he or she is unable to think or function in a rational way.

As is evident from the following sentences, the words *electrifier*, *electric*, and *electrifying* are all used about things or people that have the quality of making other people ‘excited’ or ‘roused’.

(28) 1860 RUSSEL *Diary India* I. 210 There is nothing to rouse one like the sound of a cannonade: it’s a tremendous electrifier. (*OED*)

(29) 1819 L. HUNT *Indicator* No. 6 We feel the electric virtue of his [Shakespeare’s] hand. (*OED*)

(30) 1834 CAMPBELL *Mrs. Siddons* II. xiii. 393 A manner so electrifying as to make the poor shop-man start back. (*OED*)

These mappings have primarily been made in order to conceptualise something experienced by those who are described as being “exposed to electricity”. The figurative uses of the words tend to draw on our direct or indirect experiences of electric shocks. In such cases they are used about people or things that have a ‘thrilling’ effect on other people, or make them ‘startled’, ‘roused’, or ‘excited’.

(31) 1871 PALGRAVE *Lyr. Poems* 133 A thrill of electric pain Smote through each English breast. (*OED*)

Because electric shocks are both ‘swift’ and ‘strong’, this is generally true also about the ‘tense’ emotions that are conceptualised by means of them.

When making use of our experiences of electricity as the source of electric excitation and as possessing the power of attraction, the figurative uses of the words are intended to illustrate the magic atmosphere that sometimes arises between performances and audiences, the sensation of those fascinated by a language, or of readers fascinated by an author’s text:

(32) It was an electrifying (=exciting) performance. (*CIDE*)

(33) 1878 F. A. KEMBLE *Rec. Girlhood* I. iv. 113 The tragedy was ended, and I had electrified the audience, my companions, and, still more, myself, and so, to avert any ill effects from this general electrification, Mrs Rowden thought it wise and well to say to me [etc.]. (*OED*)

(34) 1820 J. SCOTT In *Lond. Mag.* Jan., Vivid, searching, electrifying language. (*OED*)

Similarly, they may be used to conceptualise the joint sensation of an army encouraged by heights of courage:

(35) c1794 BURKE *Addr. Brissot to Constit.* (R.), Those heights of courage which electrify an army and ensure victory. (*OED*)

In the same way as we tend to conceptualise animate beings by using our experiences of other inanimate entities than electrified ones, the figurative uses of terms connected to electricity are thus the result of the following metaphorical mappings:

PEOPLE ARE MACHINES (RUN BY ELECTRICITY)  
THE MIND IS A MACHINE RUN BY ELECTRICITY

Like many machines we are equipped with electric circuits. Our brain with its nerves and cells connected by, for example, nerve fibres and blood-veins is one, our nervous system another (see e.g. sentence 8 and 25 respectively).

THE BRAIN IS AN ELECTRIC CIRCUIT  
THE NERVOUS SYSTEM IS AN ELECTRIC CIRCUIT

Interestingly enough, electric circuits were used to conceptualise our brains long before scientists discovered the bioelectric cerebral system and turned the mappings above into truisms.

In the same way as causes are often conceptualised as forces, different forces may be used to conceptualise things that we feel and causes of things that we do:

EMOTIONS ARE FORCES  
DRIVING FORCES FOR HUMAN ACTION ARE ELECTRIC FORCES

As a consequence, electricity, which is normally used to run machines, may also be used to conceptualise our emotions (see e.g. sentence 7) and the causes for our actions (see e.g. sentence 21):

EMOTIONS ARE ELECTRIC FORCES INSIDE THE BODY  
DRIVING FORCES FOR HUMAN EMOTIONS ARE ELECTRIC FORCES  
DRIVING FORCES FOR HUMAN ACTION ARE FORCES THAT RUN  
MACHINES

The mappings in which electricity is used to conceptualise our emotions rest on our experiences of electricity as a powerful force, which may shock other objects if it is suddenly switched on, and bring about electric tension in them. Here strong emotions are conceptualised by means of strong forces, tense emotions by means of electric tension, and emotions that suddenly strike us by means of electric shocks. There is also a correlation between strong emotions and emotions that occur suddenly. Electricity thus seems to be more useful when we wish to conceptualise the suddenness with which certain strong emotions strike us rather than the fact that strong emotions often last long.

STRONG EMOTIONS/FEELINGS ARE STRONG FORCES  
(CERTAIN) STRONG EMOTIONS ARE (ELECTRIC) FORCES;  
TENSE EMOTIONS ARE ELECTRIC FORCES  
SUDDEN EMOTIONS ARE ELECTRIC SHOCKS  
STRONG EMOTIONS ARE SUDDEN EMOTIONS  
STRONG EMOTIONS ARE ELECTRIC SHOCKS

Not only are the mappings made in order to conceptualise high degrees of intensity of different emotions, electric forces are also used to conceptualise different kinds of tense emotions ranging from negative ones to positive ones:

ANGER IS ELECTRICITY (sentence 27)  
BEING IRRITATED IS BEING SWITCHED (sentence 15)  
BEING SURPRISED IS BEING SWITCHED (sentence 16)

HUMAN EXCITEMENT IS ELECTRIC EXCITATION (sentence 2)  
EXCITEMENT IS ELECTRICITY (sentence 2)

In the same way as electric excitation is easily spread from one object to another, the emotions that may be conceptualised by means of electricity may be easily spread too:

CONTAGIOUS CONCEPTS ARE ELECTRIC FORCES (sentence 3)  
HUMAN CONTAGIOUS EXCITEMENT IS ELECTRIC EXCITATION  
(sentence 31)

Because electricity, metaphorically speaking, has the power to enthuse us, to make us excited, someone or something that is electric or electrifying is someone or something that is enchanting. In line with these mappings, electric attraction aptly conceptualises attraction between people and ultimately strong bonds between them:

TO BE EXCITING IS TO BE ELECTRIFYING (sentence 2)  
STRONG BONDS BETWEEN OBJECTS/CONCEPTS/PEOPLE IS  
ELECTRIC ATTRACTION BETWEEN OBJECTS (sentence 5)

Sometimes our tense emotions bring about too much internal strain. In such cases overstrain in one system may be conceived of as overstrain in another one:

MENTAL OVERSTRAIN IS ELECTRICAL OVERSTRAIN (sentence 1)

By breaking the current we remedy the problem of suffering from too much internal strain. Either we simply switch it off (e.g. sentence 19) or the current is broken by safety fuses that blow (e.g. sentence 25).

CALMING SOMEONE/ONESELF DOWN IS BREAKING THE  
ELECTRIC CURRENT  
SAFEGUARDS AGAINST MENTAL OVERSTRAIN ARE SAFETY  
FUSES IN AN ELECTRICAL CIRCUIT  
GETTING AN OUTLET FOR ONE'S EMOTIONS IS BLOWING  
ONE'S FUSES

PUTTING AN END TO SOMETHING (UNWANTED) IS SWITCHING  
OFF OF AN ELECTRIC CURRENT

Similar to the way certain emotions may be conceptualised by means of electricity, it may also be used to conceptualise “the fuel” for our actions.

DRIVING FORCES FOR HUMAN ACTION ARE FORCES THAT RUN  
MACHINES  
DRIVING FORCES FOR HUMAN ACTION ARE ELECTRIC FORCES

Electricity thereby translates into vitality (see (4)):

VITALITY IS ELECTRICITY

Similarly, young, vital and healthy people are described by means of machines run by electricity.

YOUNG, VITAL AND HEALTHY PEOPLE ARE MACHINES RUN  
BY ELECTRICITY

The breaking of the current may be used to conceptualise the end of an activity (see e.g. (21)). In my material the phrase switching something off is used to activate the image of someone who stops doing something on purpose, whereas our experiences of fuses that blow are used in order to describe an accidental end of an activity (see e.g. (24)):

TO CEASE DOING SOMETHING BECAUSE OF LOST INTEREST IS  
TO DISCONNECT THE ELECTRICITY  
TO CEASE FUNCTIONING RATIONALLY IS UNINTENTIONALLY  
BLOWING ONE’S FUSES

Similarly, a brain that does not work the way it should is a machine whose electrical switch is out of order (see (8)):

A WORKING MIND IS AN OPERATING ELECTRICAL MACHINE  
A MIND THAT DOES NOT WORK PROPERLY is a machine that  
HAS AN ELECTRICAL SWITCH OUT OF ORDER

Sometimes the discrepancies between people and machines are made use of. In contrast to the way in which electricity within machines may be switched both on and off, genuine feelings may only be switched off. The switching on of an emotion thus means the switching on of an emotion not sincerely felt.

On other occasions, people and machines are conceived of as functioning in similar ways. An example is the mapping between electrified machines which receive information from the rest of the world when switched on, and switched on people who are well-informed and aware of what is trendy (see (10)-(12)):

BEING AWARE OF THE LATEST NEWS IS BEING SWITCHED ON  
BEING UNAWARE OF THE LATEST NEWS IS BEING SWITCHED OFF

As is clear from the figurative uses of words connected to electricity in my material, the discovery has provided us with ample tools for structuring our thoughts and for conveying our thoughts to others. In addition to being the versatile discovery that it is, it has given us new opportunities to conceptualise a number of abstract concepts in a much more exact way than was possible before the days of the discovery. The greater its impact on our daily lives, the more useful it is in cognition processes. The first sentences in my material involving electricity as a source domain (sentences (3) and (35)) are from the 1790s. They have been followed by a very large number of others similarly originating from mappings between electricity and various target domains. A number of these mappings have been accounted for in this paper. Yet others may of course be found if metaphorical mappings in other sources are studied.

In my material, mappings were found that were probably conventional before electricity was discovered as well as mappings that must have originated from the discovery. No doubt, frequent mappings such as people are machines and causes are forces belong to the former group and may be re-experienced by means of our experiences of electricity. Mappings based on experiences that may uniquely be learnt from the discovery are novel ones. Among these we find specialised mappings such as human excitement is electric excitation, to be exciting is to be electrifying, and safeguards against mental overstrain are safety fuses in an electrical circuit.

No matter what degree of conventionality the mappings have, the figurative uses of words and phrases in my material are examples of the way in which a popular discovery, its various functions and the things we associate with it are used to conceptualise other more abstract and less clearly delineated concepts. By having this function the discovery not only substantially reduces our need to rely on pre-existing mental structures, but is also of use when we structure our thoughts in new ways. For example, the sentence *Relax or you'll blow a fuse* is structured by the mapping mental overstrain is electrical overstrain. To anyone who does not yet conceptualise mental overstrain in this way, it is not possible to fully understand what is meant by the sentence, unless he or she discovers the match between the target mental overstrain and source electrical overstrain. Once the person has seen the connection between the domains, he or she will not only get the message communicated by the sentence, but is from then on also likely to store the mapping mental overstrain is electrical overstrain in his or her long-term memory.

As to the details of the mechanisms underlying the mappings discussed here, they are naturally not possible to find by simply studying texts. However, it seems likely that the figurative uses of the words and phrases in my material are based on the (nearly) simultaneous mapping of a number of different things. Not only are different concepts mapped but also relations between different concepts as well as associations, values and ideas connected with the things that are mapped. The use of *switched on* to describe people who keep themselves up to date with the latest news and ideas seem to be the result of a very complex mapping. So is the use of *blow their fuses* to describe people who burst out with emotion because they have been exposed to too much pressure. The important role played by the discrepancies between source and target domains in the figurative use of the expression *switch on* to conceptualise people who start to behave or feel in a certain way without being sincere in what they are doing or feeling reflects the complexity of the mapping underlying this use.

Metaphorical expressions seem to originate from our placing of the experiences that we have of one phenomenon in a conceptual context traditionally belonging to some other phenomenon. This seems to be as true of expressions structured by conventional mappings as it is of expressions structured by novel ones. When hearing metaphorical expressions, we activate meanings that are inextricably linked to the new

context in which the phenomenon is “placed”. Hence, the way in which meanings previously associated with a certain word or phrase match the new context in which the word is used is substantial for the new meaning of the word or phrase in question. Accordingly, differences between what may be profiled<sup>2</sup> by the different forms of a word may lead us to use different forms of one and the same word in totally different kinds of metaphorical mappings. By way of example, far from activating metaphorical meanings that are closely related, the two forms *switch on* and *switched on* are used in metaphorical mappings that do not have very much in common. *Switch on*, which is originally used to indicate that something is currently starting, translates into a metaphorical sense where people start doing or feeling something, that is, into meaning that people ‘start to behave or feel in a certain way without being sincere in what they are doing or feeling’. *Switched on*, which refers to some time later and symbolises an ongoing process, is more useful when we wish to communicate that someone is currently being ‘very tense’ or ‘aware of all that is considered fashionable and up to date’.

Similarly, the metaphorical expressions *switch on* and *switch off*, which are antonymous in form and literal meaning but widely differing in their metaphorical senses, demonstrate a lack of agreement between the ways the figurative senses of the phrases develop. Even though *switch on* refers to people who ‘suddenly begin to behave in a certain way without being sincere in what they are doing or feeling,’ *switch off* is not used to signify the antonymous act of ceasing to do so.

Clearly, words are not defined only by their relationship to one another but by our use of them in different contexts. Ultimately, sense development seems to originate from what happens to be required by the contexts in which words and phrases are used and from the way in which meanings previously associated with a certain linguistic form match the new meaning we wish to communicate. In this process, small differences play a substantial role.

Interestingly enough, the dividing line between perceived similarities among real-world objects, metaphorical mappings and scientific truth

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<sup>2</sup> The *scope* of a predication is a scene specifically included by the predication. The *profile* of a predication is the entity designated by the predication (see Langacker 1987:118). The profile is “maximally prominent and can be thought of as a kind of focal point; the scope of a predication is then describable as the context necessary for the characterization of the profile” (Langacker 1987:118).

sometimes seems to be very thin. Occasionally, what was once a perceived similarity resulting in a metaphorical mapping later turns out to be a scientific truth. It is evident that people used their experiences of electricity in order to conceptualise their own actions and emotions before much was known about the way electric impulses inside our bodies work. Indeed, even today familiarity with the bioelectric cerebral system does not seem to be the kind of knowledge that is common ground for a great number of speakers. It seems likely that many people today conceptualise human emotion or action by means of electricity without knowing that there is indeed electricity inside our own bodies. Presumably, the dividing line among hunches, perceived similarities among real-world objects, metaphor and science is thin precisely because many of the systematic correspondences that we observe are due to underlying real-world correspondences between entities with similar structures and behaviour. In other words, the coherent structuring of the world ultimately reflects the coherent structure of the world.

### 3. Summary and conclusion

The aim of this paper has been to analyse the cognitive function of electricity. A number of different ways in which electricity has helped us to structure language and thought have been identified. As is evident from the metaphorical expressions discussed here, the use of electricity as a cognitive tool has resulted in meaning extension of a large number of expressions originally used to refer to the discovery. Considering the great impact electricity has on our lives it will probably remain useful in cognition processes for years to come. As long as it is essential to us in our daily lives and part of our common ground, it will be useful in cognition processes and the source of a large number of metaphorical expressions. Performances will continue to be electric, and brains will go on fusing.

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