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as being kept stupid or being kept awake by deafening noise at night and distracting pain and worry by day.

## IX.

Thus, free will exists: in using the freedom for choice in the world. Let us not be trapped by old-time religious dogma or current thoughtlessness that put freedom in non-causation. It is in the world as explored by thought.

But there hides a serious problem in this analysis. It assumes a causal effectiveness of thought and, thus, of consciousness, in determining action. However, causal closure of the world is usually conceived of in physical terms. Stimuli act on neurons act on muscles. Where and how can conscious experiences enter? How can thoughts enter? How can they take part in a causal sequence?

The current answer is: they cannot and they do not. Consciousness does not enter any causal sequence but merely reflects the neural underpinnings.

It indeed might be so, but the hypothesis is unsatisfactory,-- very much so. It turns consciousness into an epiphenomenon. That is as counter-intuitive from an evolutionary viewpoint as it is from that of everyday observation. We are fairly certain that conscious experience affects behavior, and can do so only by affecting the brain. We are fairly certain of this because, among other things, no action is initiated with respect to objects that are not consciously seen (Weiskrantz, 1997), although their having been seen may be rapidly forgotten (Lambie & Marcel, 2002; Lamme, 2003).

It is unsatisfactory for a major further reason. There exists absolute ignorance about how the brain generates consciousness. Not where it does so: *how* it does so. It is Chalmers' (1996) hard problem of consciousness. After 100 years of psychology here in Amsterdam, here or elsewhere there yet is no thread of a meaningful theory. So then, why, until such a theory is there, not follow the evidence that consciousness affects the brain? Until the problems of consciousness are solved, the best bet seems to be to assume that consciousness serves a purpose and, thus, is capable of affecting matter; and thus to accept the existence of free will, in the sense outlined here. And happily make use of it.

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Freedom *for* choice exists in the world. In any contingency in which a human may find him- or herself, there exist several options for action. One can choose among them, as long as one has the cognitive abilities to perceive them or think of them. When ordered to do something, even at gunpoint, one can always say "no", and refuse to budge. When being told "Then we will kill you", one always can say "just go ahead", if one is prepared to pay that price.

Freedom of choice also resides in that the world lends itself to different appraisals that may include possibilities of choice. It harbors the additional freedom in that appraisals in part are conscious appraisals, conscious experiences. And conscious experience has the peculiar feature of not being isomorphic to its underlying cognitive or neural determinants. Conscious experience is highly integrative, creating properties like the color orange out of the determinants of yellow and red, and Gestalt properties out of discrete stimuli (Hodgson, 2007).

Freedom for choice, the range of available options is very large indeed when the products of human inventiveness and imagination are included. Take the following poem called *The Sage*, which a 20th century Dutch poet translated from the Chinese:

My house is filthy and my many children shrieking.  
The pigs are rooting, grunting, in the yard.  
But mountains, rising high to the blue heaven,  
Draw my attention, which then mounts from stink and dirt.

As I say: preferring certain alternatives over other ones has its determinants in accessing information and deliberating about it. Those again have their determinants in that there were books in the house and that one can read, and that politics had allowed or encouraged thinking for oneself. So, the freedom of will does reside partly around us: in the world and our representations. It partly resides in our freedom to exert our capabilities for entertaining possibilities and considering counterfactuals,-- the genes plus education. Lack of freedom of will likewise resides in ourselves and in the world: in reluctance to enter domains of possibilities that are technically within reach; or in technical obstacles to reach available information by external force, such

exposed to electric shocks, being able to press a button to end it lowers stress and the secretion of cortisol (Frankenhauser, 1975). By contrast, loss of sense of freedom to act is emotionally disastrous. It generates what the sociologist Durkheim (1897) called "anomia": the sense of futility of seeking to act, to maintain orderly life conditions, to set goals. Anomia formed Durkheim's major explanation of suicide in then-modern society. Anecdotal evidence abounds of this under conditions of severe hardship: evidence of the lethal effects of losing hope or heart by prisoners of war, political prisoners, victims of disasters or shipwrecks. or upon severe illness. Evidence also comes from the life-saving influences from fellow-victims who manage to inspire courage and initiative in their fellows, such as Milena Jesenska, the former girl friend of the writer Kafka when she was an inmate in the Ravensbrück concentration camp (Buber-Neumann, 1989), and such as reported from the North Korean prison camps from the 1950's. All this illustrates what the notion of the effectiveness of the notion of free will comes from.

Now, what can that mean, "free decisions" and "free will"? It is here that major confusions have come in.

The term "free will" (that is, its latin equivalent, "*liberum arbitrium*", free choice rather) was invented by Augustin of Hippo to free God from responsibility for evil, and to have a basis to assign responsibility to humans, under the notion of sin. Somehow it came to be understood as implying an absence of causation, and hence as an inadmissible notion in a modern scientific world view. Sense of freedom of will, for Spinoza, reflected mere ignorance of causes. But that need not be implied, once religious theory is abandoned. Moreover, it is not why humans cherish their sense of freedom of will, nor what justifies that sense. We do not want to produce decisions out of thin air and to make arbitrary choices. *Liberum arbitrium* is not free arbitrariness. Making arbitrary choices sounds more like mental illness than like a something desirable for the conduct of life. People value freedom of will and freedom of choice when and because it satisfies their reasons to make the choices. Freedom of will follows from the determinants of willing.

Freedom of will indeed is not located in an absence of causation. What in fact indeed is there, and what is profitable and useful, is freedom *for* choice rather than freedom *of* choice.

The facts of free will include those of effortful emotion regulation just described: resistance to temptation, acting differently from what stimulus events suggest or impose, pursuing emotionally-charged goals with awareness of prominently likely negative outcomes, weighing the values of the outcomes of different modes of action. They even include the more innocuous decisions to prefer a larger reward later in the future than a smaller reward right now, with the reward in front of one's nose (Mischel, Shoda, & Rodriguez, 1989)

I give some more emotionally charged examples. On occasion, political prisoners do not betray their friends under torture. Less occasionally, when ordered to cause pain to others, most people comply, as in the famous Milgram and Zimbardo experiments from the 19-seventies. In the Milgram experiments, eighty-five or so percent of the subjects did comply. But still, 15 percent did not, against pressure or seduction ("It is for their benefit").

During the Rwanda genocide in 1994 in which Tutsis and moderate Hutus were massively murdered, some Hutu mothers hid Tutsi children with the risk of Hutu killers coming at their door. Similarly for the people who hid Jews during the holocaust. Some said, afterwards: I could not not have taken them in; how could I have faced myself, had I heard later that he was caught and I had done nothing.

Such decisions involve four human capabilities: the capability for deliberation; the capability to conceive of possibilities and even counterfactuals; and the capability to distance oneself from immediate emotional impact of events --horror, fear-- without abandoning emotional responsiveness, withdrawing into indifference, or muttering "how awful!". And of energy resources to hold back or suppress actions.

Acting under misery or hardship uses options for action that the person thinks of or has discovered as available in the world or the person's thoughts. He or she finds that he or she can *do* something. He has a freedom to act, in the sense that there are options to choose from and that may be efficacious in maintaining some standard for conduct. One thereby escapes from the compulsion of appearing doomed to passivity. One retains or regains orientation towards setting goals.

By that route, awareness of freedom to act can be vital for survival, One knows that one is not merely or fully a victim of circumstance of hardship and compulsion. This operates this way even in modest conditions of threat: when

(1985). All there exists is an "illusion of conscious will", concludes Wegner (2002).. Neuroscience argues that our choices and actions are just determined by the brain: by neural processes, whatever folk-psychology likes to believe. It also is argued that free will cannot exist because the world is causally closed. Nothing happens that is not causally determined by antecedent events; that also applies to human action.

I think this discussion is misguided, and the conclusions wrong.

Of course, conscious awareness of being a willful agent can be wrong. There always is uncertainty about how freely one decides when one does decide. There always has been. During a weekend of staff and students, in 1946 or so, the founder of our psychology department, Géza Révész, was being pushed onward in a wheelbarrow by Maria Bos, the then-lecturer in developmental psychology; you find them both in the picture on this symposium's announcement. Révész then spoke "Man glaubt zu schieben und man wird geschoben". *You think to push and are being pushed*".

The denials of free will are confused and misguided. Lifting one's finger, as in Libet's experiments, is the delayed and automatic outcome of a conscious and willful decision to participate in the finger-lifting experiment and to obey the experimental instructions. Wegner's experiments only show that one can fool any subject in any situation by well-chosen tricks. Optical illusions also do not demonstrate that visual perception is illusionary.

And it is silly to say that the neural processes are the determinants of our actions. That is similar to saying when receiving a phone call makes you happy, this happiness is caused by the telephone lines. It is caused by the words spoken at the other end that have links to visible presences and intimate interpersonal actions, for which the electrical currents in the line are merely messengers.

The major point here is that the notion of free will does not depend upon a "sense of free will". Free will is not merely a feeling, a "sense". The notion refers to the facts of self-determination. It is what distinguishes the perpetrator of some cruel act from its victim. It is what allows any victim always, or almost always, to become not merely a victim but can remain an actor. It is what allows slaves to become masters. Free will is a fact of human cognition and motivation, Those facts are obscured by erroneous preconceptions like those above, as well as by the profound ignorance that still exists concerning certain issues. Let me first say a few words about the facts.

the person who insulted you right on the nose, or at the right moment think of a truly stinging remark.

Emotion regulation is not only a human capability. Cats softly and stealthily stalk their prey so as not to prematurely warn it and chase it away; many male animals perform courting rituals and parade up and down, instead of jumping on to the chosen female, so that she will not react defensively. Chimpanzees waiting for food may start to embrace and groom each other so as to prevent fighting if each should run to the food by him- or herself. One may propose that the capacity for emotion control generally functions to fine-tune actions and interactions. Hebb, at the time, proposed his "inverted U-curve" of the relationship between motivation strength and the quality of performance: at high levels of motivation, performance goes down.

Regulation goes to the heart of emotion. Without emotional adjustments, no conflicts of interests could be solved, such as between getting what you want and keeping friends. In fact, emotion regulation not only serves to soften pain or being considerate to others. It often primarily is there to serve multiple constraint satisfaction. That is: it seeks to satisfy several emotional concerns at the same time: to achieve intimacy in love and to retain autonomy; to get much money and retain self-esteem; not merely to act but also to feel and realize what happens.

The epitome of emotional flexibility consists of effortful self-control: acting against one's inclinations, once these are aroused. Such flexibility extends beyond self-control, since it is one manifestation of a wider class: the exertion of free will. I define free will as deciding to act against the pressure of circumstances and aroused inclinations, and to be ready to act upon that decision. The inclinations one acts against include those that bring pleasure as well as those that avoid pain and risk, both of which are disregarded when acting against the pressures of circumstance or against desire. Human emotional processes and decision making show flexibility in freedom of the will.

#### IV.

Free will? Free will is a derided concept in psychology, these days. "Human freedom does not exist" writes Wolfgang Prinz (2004). Conscious decisions do not influence one's actual decisions since they only come after the fact, finds Libet



At the same time, emotions manifest considerable rigidity. That, too, is one of emotions' main features. Emotions of any strength are characterized by what I have called "control precedence". They claim control over thought and behavior. They color what one thinks as well as what one does. Once an emotion has been evoked, one tends to cling to it. Emotions tend to overrule following tasks or other goals, and they distract from them. They cause neglect of risks and harmful consequences. They lead to neglect information that something one fears is in fact harmless, that someone loved does not give pleasure, or that dislike for something or someone is in fact unfounded or a fear irrational.

Emotional rigidity interferes with emotional flexibility, because that flexibility is largely due to openness for information. Strong emotions "tend to restrict one's range of cue utilization" (Easterbrook, 1959). "Alcohol myopia" is a concept coined to characterize how alcoholics disregard risks and warnings (Wiers, 2007); love can be not only shortsighted, but even blind. Emotions generally tend to make people think one thing rather than another; and strong emotions let people fall back on simple and more elementary response repertoires, such as physical violence rather than negotiation, self-defeating and self-destructive quarrels and revenges, jealousy that chases a partner away rather than regaining him or her.

### III.

Fortunately, human nature also has provisions for counteracting control precedence: emotion regulation. Emotion regulation has many forms: responding less powerfully than one is inclined to, responding differently from what a situation appears to call for, such as bursting out laughing when treated with insolence, acting against one's desires to follow more remote goals.

Emotion regulation forms part and parcel of human emotions. We hardly ever respond with blind anger, blind fear, or blind desire. Regulation is deeply engaged even in the most basic emotional behaviors, and to our advantage.

This is in part motivated by autoregulation: getting over being off-balance or disliking oneself because of one's weakness in being afraid or getting confused.

It often is also motivated by the desire to gain precision in one's emotional action: getting one's key into one's lock when pursued by a weird individual; hitting

sweating, they form the lowest stratum of such response. They exemplify rigidity. In evolution, the kind of reflexes tend to remain similar in number and scope; urges increase, and so does the number of specific behaviors that result. An insect can only run or sting, in "fear", that is, in reaction to threat or to what is unexpected. A rat can freeze, jump, or run in fear, or turn on its back when attacked by another rat. A chimpanzee can freeze, climb, run, scream, submit, seek assistance, and cling to its mother or friend. A human can do all this (although not climb as well), but also duck, build a shelter, talk and plead, get or make tools to help in defending and, most salient, elaborately solicit and seek help from others,

The basis for this behavioral flexibility is formed by motive states. That is: they are states that are geared to achieving a state to come, by deploying action to indeed achieve it. They are intentional states. I have called them "states of action readiness". States of action readiness may be felt as urges. They aim to maintain or modify one's relationship to the object that the emotion is about.

Human states of action readiness vastly extend this flexibility over that of other mammals. Their behavioral repertoires are vastly more varied. Anger, for instance, uses stabbing and shooting, blackmail, harming the antagonist's possessions, harming his or her next of kin, and group expulsion, in addition to hurting, shouting, biting.

Shame illustrates a kind of action readiness that is flexible in another way. The state of action readiness is submission: acting and showing oneself unassuming and with less power than others. It can serve very divergent aims with regard to variable objects. It serves to pacify a powerful other individual, to show humility and acceptance of authority, and attachment or readiness to obey and follow an authority figure in ideological, educational, political, and religious power relationships.

Human nature shows its emotional flexibility in allowing large variation in what generates particular emotions. Fear, anger, joy etcetera are evoked not only by specific stimulus objects, but also by complex events like encountering individuals belonging to a particular group, and like events understood in terms of abstract notions like prevailing of, and violence to justice and truth, or like success and failure of goal achievements.

## **Emotions between flexibility and rigidity**

**Nico H. Frijda**

The theme of this meeting: flexibility and rigidity. Human nature moves between them. This is nowhere clearer than in the domain of emotions.

The concept of emotion, and similar concepts (*pathèma*, *affectus*, *Gemütsbewegung*, *bhava*), have emerged in language because behavior and feelings show that people (and animals) want or don't want things, and that they do or don't want things in various ways, such as by prolonging contact, by intensifying or expanding interaction, by acting against other people, by escaping from contact, by abandoning all interaction. It is their aspect of action readiness.

And when wanting or not wanting in a particular way, it appears indifferent how they seek to achieve it. Different emotions do not represent different sets of movements, but different modes of seeking or avoiding interaction. In fact, the modes of wanting and not wanting, or of seeking or avoiding interaction, are inferred from the varieties of specific things people do, or are seen being done by others, that all appear to serve a common purpose. For instance, you perceive an event as a threat or danger. You stand still and watch. Or you prepare to cope and resist. Or you crouch or run away. You may call for help. You look for shelter or for a weapon. You frantically ponder a way out. Your face may take all sorts of expressions: that of apprehension, of worry, of drawing back and of protecting your eyes. These behaviors all share that they in some way serve to prevent or decrease the threat to actually hurt.

Each of the many behaviors forms an adjustment to the particular situation at hand. Which of them occurs depends on what the situation of threat allows or suggests to do, and on one's skills, inventiveness, and available energy. But what we call an emotion is an urge that flexibly obtains shape according to circumstances. It is a flexible response to wanting or not wanting a particular relationship (Frijda, 2007).

This flexibility is what distinguishes what we usually call emotions from what we consider reflexes. Reflexes are stereotyped behavior patterns. Emotional events may also trigger reflexes. But they only form a fraction of how people and other animals respond to such events. Examples are startle and freezing. These are the outcomes of what LeDoux (1996) called the "short route" in generating emotional response. Together with autonomic reactions like blood pressure changes and