The Idea of Will

M.M. Dorenbosch
Scholar on Will and Consciousness
michieldorenbosch@yahoo.co.uk

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Abstract

This article presents a new conceptual view on the conscious will. This new concept approaches our will from the perspective of the requirements of our neural-muscular system and not from our anthropocentric perspective. This approach not only repositions the will at the core of behavior control, it also integrates the studies of Libet and Wegner, which seem to support the opposite. The will does not return as an instrument we use to steer, but rather as part of the way we learn new automatic behavior and of how our neural system steers us. The new concept suggests that understanding of our will is more about understanding of our daily behavior then about the will itself.

Key words: conscious will, free will, free deciding, consciousness, need, satisfaction, longing, desire, affection, intention, motivation, valence, learning, automatic behavior, routine behavior, neural muscular system, behavior control, vetoing, new concept, philosophy of free will, anthropocentric perspective, moral responsibility, Libet, Wegner,

Introduction

The free, unfree or conscious will has been keeping mankind and especially philosophers busy for ages, if not for millennia and remarkably enough without offering a convincing argument for understanding. The American philosopher John Searle addressed this in 2008 as "something of a scandal" for philosophy (Searle 2008). Nevertheless, little has changed since then.

How is it possible that the will could hide itself so well for so long while the apparent opinion is that understanding should be possible. There may be many reasons, however there are two remarkable aspects that catch the eye. One is the unilateral analytical focus of philosophy on free choosing or deciding (O'Connor 2010) disregarding the possible importance of understanding our feelings of will (fig. 2). The other aspect is our (nearly pathological) inclination for anthropocentric understanding of the will (O'Connor 2010), blindfolding ourselves from a broader view (fig. 3). Was it not Charles Darwin who almost two centuries ago, showed us that we have to look outside ourselves to understand ourselves?

This article addresses these two aspects of understanding the will. The result is a surprising new concept of what our conscious will might be about. A concept that also might hold a piece of the puzzle regarding why the will has been keeping us hostage for so long. This new concept does not try to understand the will from our anthropocentric perspective as the majority of research explicitly or implicitly seems to do (Baumeister & Bargh 2014, Brass et al. 2013, Cisek & Kalaska 2010, Dennet 2014, Doyle 2011, 2013, Frankfurt 1969, Kane 2014, Mele & Shepherd 2013, Miller & Schwarz 2014, Murphy & Throop 2010, Nahmias 2014, O'Connor 2010, Pereboom 2014, Seth 2007, Wegner 2002, 2004). The new concept approaches our will from the perspective of the requirements of our neural-muscular system (tab. 1). The concept regards the neural muscular system as an entity independent from us. The neural muscular system may be a part of "us" in a physical sense, but we seem to miss the tools to control it, rather it controls us. The concept focusses on neither freedom nor on deciding,

but focusses instead on the mechanisms and feelings of willing. Therefore, where the concept uses the term conscious will, it is about conscious willing and not about conscious deciding. However, we may expect that mechanisms that create our conscious state of willing also direct what we choose or decide (fig. 2).

Viewed from the perspective of the neural-muscular system this article shows that our conscious will is not about *what* we want, but rather about the inability of our system to control this *what* automatically. This relationship with control places the will back into the setting of behavior control from which it seemed to be "expelled" by Wegner's "Illusion of the conscious will" in 2002 (Wegner 2002). The will returns not in terms of direct steering, as Wegner understandably doubted, but as part of the learning trajectories that create our daily automatic routines (Bargh et al. 2001, Graybiel 2008, Wyer 2014). This insight not only offers a natural fit for Wegner's challenging "illusion of the will", but it also fits with Libet's time delay between neural initiatives to act (action potential) and the subsequent conscious decision to do so (Libet et al. 1983, Libet 1985). A new framework seems possible that includes freedom as well as unfreedom of will. However, where the will touches the functionality of consciousness remains a mystery because the nature of consciousness is still unknown (Seth 2007).

Table 1 DIFFERENT CONCEPTS OF WILL

Concept	Perspective of understanding	Focus of understanding	Source of behavior	Objective of will	Result of willed action
Traditional*	Anthropocentric	Free choice/ Free deciding	Conscious thoughts	Control action & satisfaction	Moral responsible
Wegner**	Anthropocentric	Free choice & Feelings of will	Unconscious processing	Create emotional markers	Authorship of action
New Concept	Neural muscular system	Mechanism & Feelings of will	Unconscious (+Conscious learning)	Explore how to control satisfaction	Learning automatic control

* (O'Connor 2010), ** (Wegner 2004).

This article is an invitation to step into the shoes of our neural muscular system for a moment, wandering about the will without defining it beforehand, considering that our experiences of will may not be about *us*, but rather a part of the instrumentation of our *neural muscular system* to control the world around the system. This article starts with the functionality or non-functionality of conscious perceptions and the relationship between the will and behavior control. Then it looks at our perception of freedom in relation to neural processing, autonomy and intentions. It concludes with a vision on how we assign value to everything around us, and with a new definition of the conscious will.

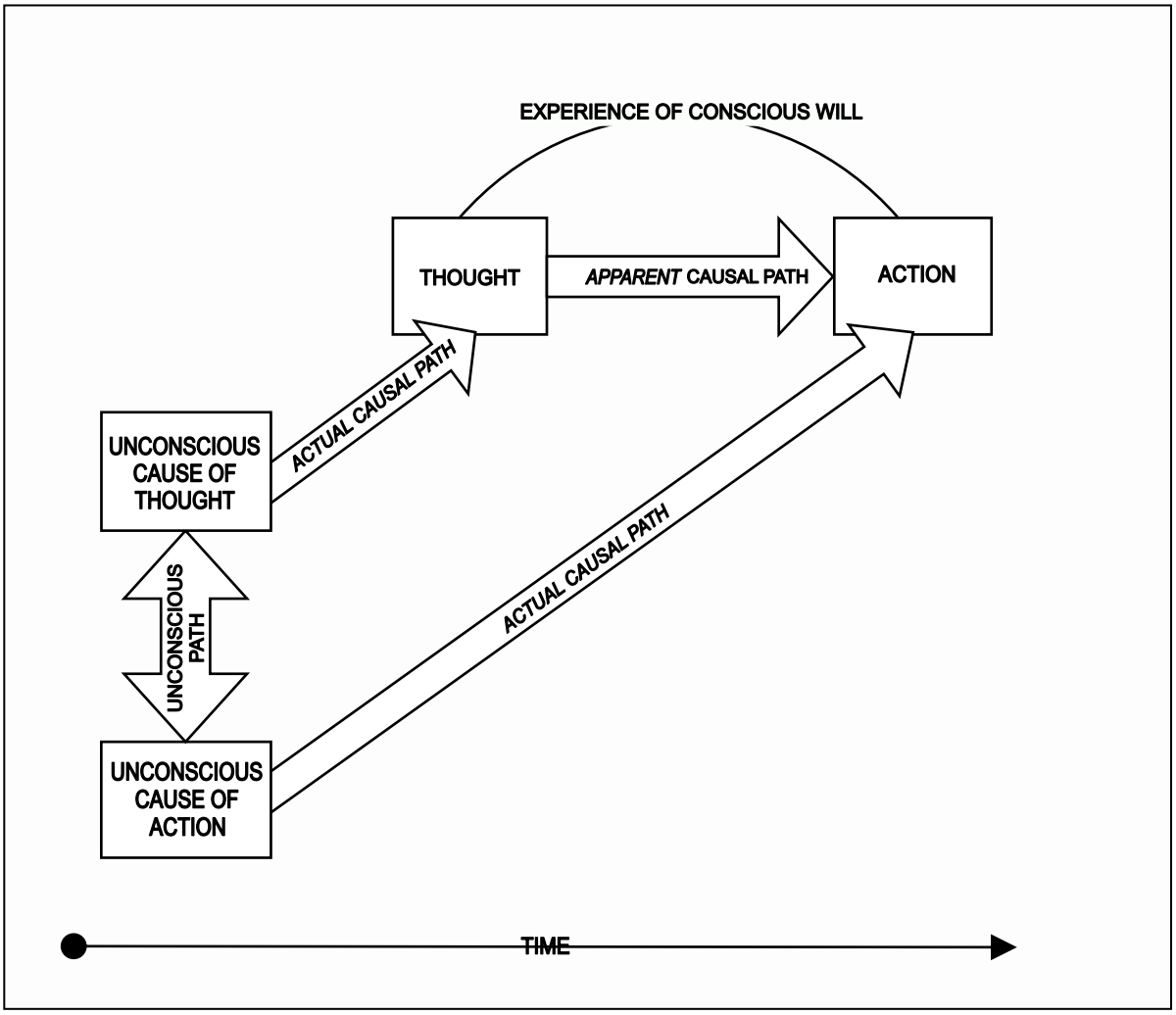

Fig. 1. A MODEL OF CONSCIOUS WILL AS SUGGESTED BY WEGNER (Wegner & Wheatly 1999 ©APA).

Consciousness

The decision to choose the perspective of the neural-muscular system is not that surprising. In fact it is rather inevitable, considering that unconscious neural processing may precede our conscious perceptions, not only in the context of inborn or learned reflexes but also, it seems, in the context of conscious deciding (Bengson, et al. 2014, Bernácer, & Giménez-Amaya 2013, Dijksterhuis 2011, D'Ostilio & Garraux 2012, Fried et al. 2011, Grey Walter 1963, Guggisberg & Mottaz 2013, Libet et al. 1983, Libet 1985, Kühn & Brass 2009, Matsuhashi & Hallett 2008, Ostrowick 2007, 2014, Soon et.al. 2008, 2013, 2014**).** This shift in perspective however, is not without problems. One difficult question is whether our conscious experiences of will can steer behavior (Block 1998, Gulick 2014). This steering aspect of the conscious will is heavily doubted in Wegner's "Illusion of the conscious will" (Wegner 2002, 2004) and this vision has become one of the main hurdles in the understanding of the will. Wegner's vision is that unconscious neural causes create our experience of conscious will and that there is no direct causal relationship between our conscious will and our actions (fig. 1). Nevertheless he tries to understand the will from our conscious anthropocentric perspective and not from the perspective of the neural system (tab. 1 & fig. 1). However, from the perspective of the neural muscular system the steering potency of conscious perceptions is also a thorny topic.

The main problem is that we do not know the nature of consciousness (Chalmers 1995, Gulick 2014,

Seth 2007). Therefore, we also do not know whether conscious experiences of will are functional or not. Nonetheless, as seen from the perspective of the neural muscular system, it seems possible to position conscious experiences, including those of will, in a functional context. To do so we use the insight that a conscious experience, functional or not, generally is correlated with underlying "unconscious" processing of the neural system that generally is assumed to be functional (Engel & Singer 2001, Lane et al. 1998, Tononi et al. 1998). This "neural correlation of consciousness" (Cleeremans 2009, Mormann & Koch 2007, Tononi & Koch 2014) allow us to consider a conscious experience together with its underlying neural activity as a potential functional action of the neural muscular system (fig. 3). This offers an opportunity to leave the question of functionality of consciousness outside the scope of this article system.

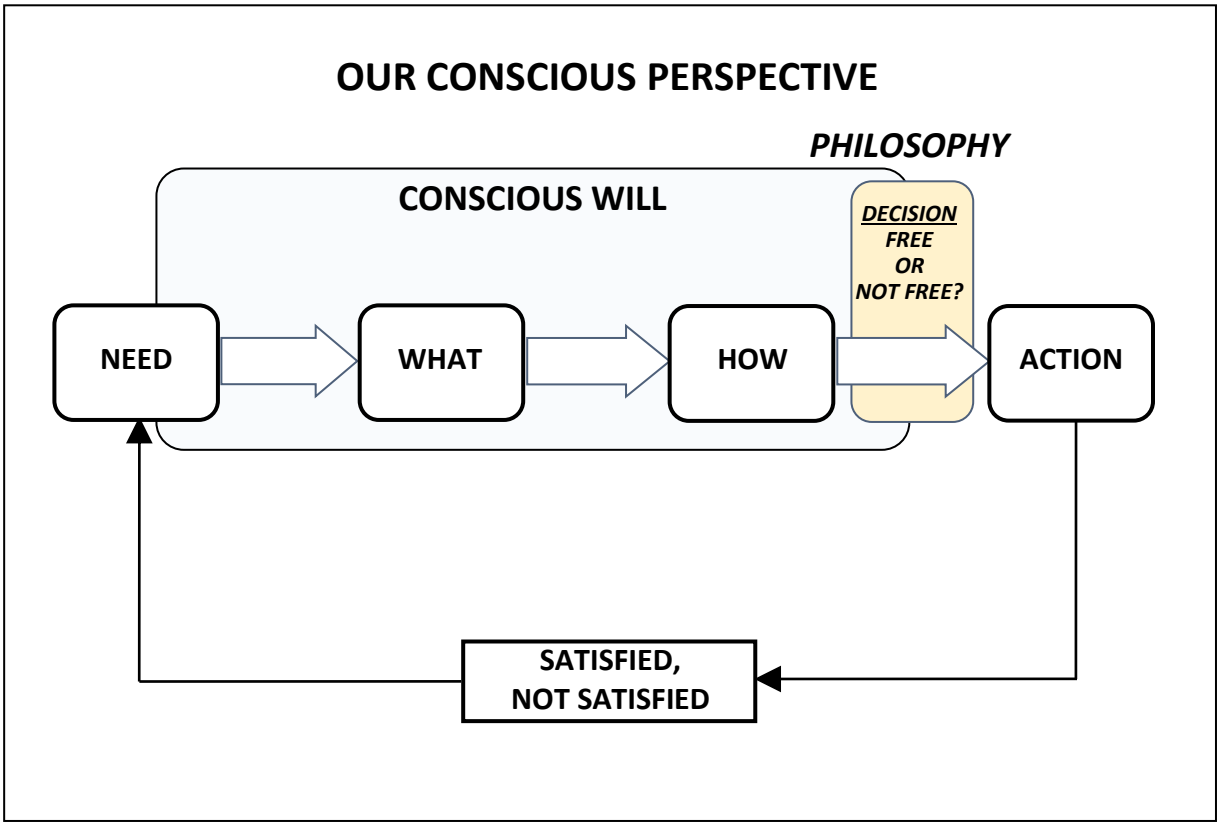

Fig. 2. THE CONSCIOUS WILL FROM OUR ANTHROPOCENTRIC PERSPECTIVE. *Our state of CONSCIOUS WILL is preceded normally by a NEED; a longing for satisfaction. The will seems to enter consciousness when this longing focusses itself on WHAT might satisfy us best. This may create an intention to move towards it. The longing, together with this intention, we experience as a motivation to explore HOW we can control this WHAT in a way that suits us best. Subsequently this may turn into real ACTION. If this ACTION does NOT SATISFY our needs we might try again, modifying the NEED, the WHAT and or the HOW. If the ACTION does SATISFY we may reinforce this behavior by repeating it in future. In both cases this is to regard as a feedback learning loop. When an ACTION is initiated in line with our intentions and thoughts, we normally experience this as our DECISION. PHYLOSOPHY strongly focuses on whether we are free in this decision or not. Whether the relationship between the boxes is causal or not (see fig. 1) is still a subject of debate (blue arrows).*

What and How

That our conscious experiences are preceded and escorted by unconscious neural processing, suggests that we have to reevaluate what our experience of will stands for. Is the experience of will an expression of *our* needs or an expression of the requirements of the *neural muscular system*?

From *our* anthropocentric perspective, the will is clearly about our needs such as food, safety, sex, autonomy (Maslow 1943). We want to experience satisfaction in terms of relaxation, happiness, freedom, love, etc.. The conscious will seems to be our focus on *what* can deliver this to us (tab. 1). The will can present itself in general terms. For example, ”I want to drink something”. But it can also have a specific focus toward what may satisfy us best. For example, ”I would give a million for a cold beer!” (Maslow 1943).

Seen from the perspective of the neural muscular system, the will seems instrumental and primarily about *how* to keep the organism in the comfort zone of its needs (Craig 2010). From the neural muscular system’s viewpoint, the will is hardly about *what* could deliver satisfaction. To the system, this object of our longing and intention, for example drinking, or obtaining a cold beer, is already “known”, even in terms of satisfaction. The problem of the neural muscular system seems to be that it lacks the skills to control this object of satisfaction automatically in the present setting. The challenge of the neural muscular system is to stimulate the organism to explore and learn *how* to control this object also in this setting (tab. 1). For example, it may move the organism into the exploring mode: “Can I buy a beer here?” “Should I ask the neighbor?” “I better eat some fruit?”

All But Doing

Despite this difference in scope, in both perspectives the will is focused on control. In our perspective, the focus is on *what* we want. In the perspective of the neural muscular system, it is on *how* to control this *what* in an automatic way. A part of this control is innate in terms of reflexes and talents. The majority of control, however, we must learn, step by step, day by day, by exploring, trying and rehearsing (Bengson 2014, Brembs, et al. 2002). For us this learning is not normally a part of how we experience the will. In our perception, the will is rather about being in control (Brass et al. 2013) and getting or doing right away.

Seen from the perspective of our neural muscular system, however, the connection with learning seems inescapable. The will emerges when the organism is outside its comfort zone, lacking the skills to return to it (McBride 2008, 2012). For example, “I’m thirsty, but can’t find a drink here!” The organism, therefore, has to learn new skills. Stated the other way around, willing is hardly relevant when control is adequate. For example, we just open the refrigerator and take a drink, thirsty but generally without strong feelings or intentions.

One could say that willing means knowing the *what*, but not perfectly knowing the *how* to control this *what* in the very moment. Conversely, if the *how* is fully under control, the will fades and our behavior becomes more or less automatic, as in the refrigerator example. From the perspective of the neural muscular system, the will seems less about an intention to satisfy an active need, as we tend to experience it, but more about a mechanism to get the organism to work by exploring and learning new skills. This is not an easy task when we consider that “willing is all but doing”.

It may be noteworthy that also the part of the brain that produce our intentional feelings of will seems to operate independently from the part that triggers concrete action (Desmurget et al. 2009, Desmurget & Sirigu 2012). Also this suggests that the conscious will is rather about error detection, motivation and learning than about direct behavioral control (Charles et al. 2014).

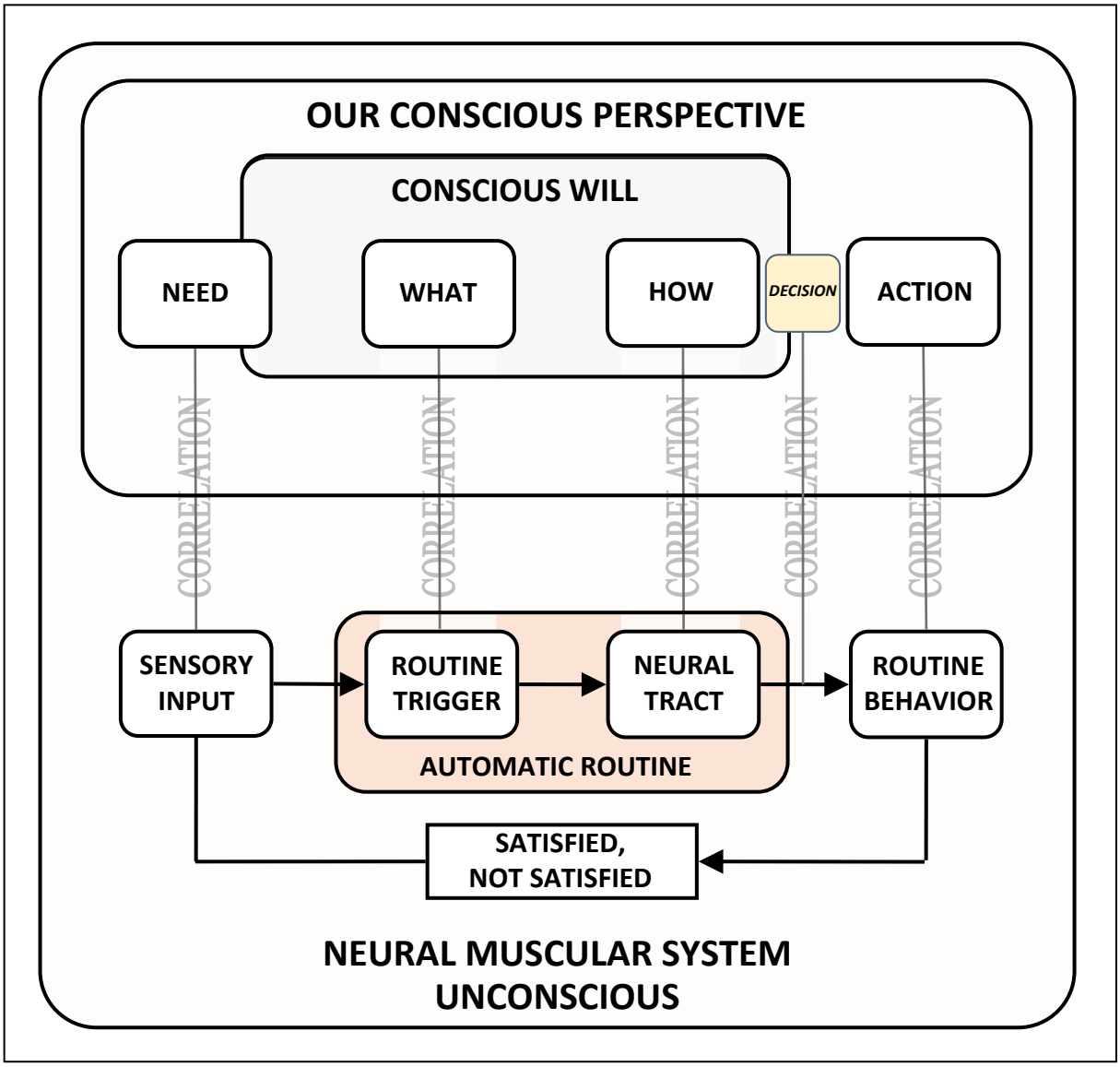

Fig. 3. THE CONSCIOUS WILL FROM THE PERSPECTIVE OF THE NEURAL MUSCULAR SYSTEM. *Conscious experiences are generally CORRELATED with underlying unconscious neural activity, more or less like the two faces of the same coin. However, the new concept suggests that the CONSCIOUS WILL is not as about the will itself, but rather about the learning and improving of the underlying AUTOMATIC ROUTINE. In this context the conscious WHAT may correspond with the automatic ROUTINE TRIGGER that has to be learned, the conscious HOW with finding and learning the optimal NEURAL TRACT of the routine and the conscious ACTION with the future automatic ROUTINE BEHAVIOR. It may be noticed that the "conscious" boxes are only connected through their unconscious counterparts.*

Daily Behavior

The conscious will seems to be part of exploring, trying and learning new behavioral options. When these behavioral options appear successful, normally they will be repeated (fig. 4). As a result, control improves and the new options will gradually turn into semi-unconscious routines, also referred to as cortical reflexes (Bernácer & Giménez-Amaya 2013, Graybiel 2008, Lamme 2010, Lombo & Giménez-Amaya 2014). We seem to activate these routines by consciously or unconsciously focusing

on the triggers (Hassin 2013, Koch & Tsuchiya 2007, Merikle et al. 2001, Shinar et al. 1998), for example, in the way we automatically drive a car. However, life is not only about driving a car. All routine behavior we tend to perform automatic and semi-unconscious; consider, walking, working, eating, talking, etc.. Even thinking seems to follow this design as seen in our often automatic opinions about others.

To the neural muscular system, these unconscious routines offer an opportunity to execute "daily behavior" almost automatically without time consuming conscious processing. Consequently, our explicit conscious attention will mainly be centered on what is novel, unforeseen (Charles et al. 2014) or difficult to control, especially when danger or profit is involved.

Wegner and Libet

Seen from the position of the neural muscular system the will seems about conscious learning in order to perform better in the future. The will may be an illusion when it is about direct conscious steering, as Wegner rightly concluded (Wegner 2002), but seen from the perspective of the neural muscular system the will returns, functional or not, as a part of routine steering by improving or renewing routines where the existing routines fail. In other words, steering by doing better next time (Gray 2004, Biggs 2005, Nesse 2005, Woergoetter & Porr 2008).

This approach also creates an unexpected fit for the findings of Libet and others (Libet 1983, Grey Walter 1963, Matsuhashi & Hallett 2008, Kühn & Brass 2009) on the time delay between the neural initiatives to act and our conscious perception of deciding. On the one hand, the new concept skips the need of time-consuming conscious perception as we go about our daily routines. On the other hand, and more important, the concept suggests that conscious processing, and therefore also the will, is about trying and learning to behave automatically in the future and not about *being* in control. Within this context, Libet's half-second time delay of consciousness is no problem as most learning is iterative and slow because of trying, evaluating and rehearsing. The time delay seems even to make sense in terms of afterward evaluation.

Sleepwalking

The consequence of the foregoing is a remarkable and hardly conceivable notion that our daily routine behavior may be more or less like sleepwalking in bright daylight, leaving conscious attention, reflection and evaluation for the moments when control may be insufficient. This could explain why we are capable of very complex behavior when we really are sleepwalking (Mahowald 2006, Pressman et al. 2007).

Pickpockets and magicians have known for ages that we sleepwalk in bright daylight, but for most of us this notion is hard to believe for various reasons. It may seem as stating the obvious, but the main reason might be that our conscious world simply does not include what we process unconsciously. Many may recognize the experience of the miraculous disappearance of the car keys we just had in our hands one minute ago. It appears, we must have put them somewhere in an unconscious routine. Not only our car keys disappear in this manner, but all our routines have the potential to vanish into the void. Nonetheless, we tend to believe that what we do perceive is all there is (Pronin 2009). Conscious perception is far from accurate and complete, as illustrated by the famous experiment with the "gorilla" that passes in full sight among basketball players. When we have the demanding attention task to count the number of ball passes made by one of the teams, many of us will not even notice the passing primate (Simons 2010).

Another reason may be that our conscious perceptions can be very present and vibrant, advocating the

perfect opposite of sleepwalking. In addition, the nature of our senses unavoidably puts us in the center of conscious perception and action, suggesting that we are in charge of full control. Even when we act more or less automatically, as in driving a car while talking to a fellow passenger, we still have to focus on the trigger context of our driving routines, creating the impression of active conscious steering (Sumner 2008).

There are many more examples and arguments, but the constant alert for what may run out of control of our routines, together with the indispensable focus on the routine context, may explain our impression that we certainly do not sleepwalk and that we, and only we, are steering. However, when the sleepwalker is also capable of very complex behavior, we could reason that not *us*, but rather our *neural muscular system* is running our routines without the need of consciousness by using the ongoing stream of information that continuously enters into the brain (Bargh et al. 2001).

Private Path

We seriously have to take into account that our *neural muscular system* and not *us*, directs our regular behavior and perceptions. But what about the will, which seems to give us the personal power to freely choose what we prefer. Are we also unfree in our personal preferences and choices? The answer to this question depends very much on the angle in which we approach our freedom of will. It might be wise to approach it from *our* perspective as well as from the perspective of the neural muscular system.

From *our* perspective, we experience a mental freedom to give preference to what weighs most for each of us, a preference that undoubtedly has the ability to differ from that of others. As a result, we all seem to follow a unique personal path in life. A path that often originates with intention of our will, but that may also contain other input, such as the way we deal with the arguments of others. Whatever the considerations are, they all have one thing in common. They all express the values that we each personally assign to arguments and things around us depending on our actual knowledge, experiences and needs.

This capacity to follow our own path and to assign personal values to things around us makes it almost impossible to believe that something other than our conscious will might draw the very lines of our life, lines that sometimes even seem to challenge logic and common sense. This perception of willpower strongly suggests that our mind is free from the deterministic laws that rule the universe (Hoefer 2008). This may, or may not, be true but it is understandable as science is still incapable of filling the gap between the conscious mind and the physical world of which we are a part (Chalmers 1995). Omitting a discourse on freedom and determinism, a conclusion may be drawn that we are organisms that undeniably have the possibility to differ from one another, mentally, emotionally and behaviorally. This is an autonomy that could be described as the freedom to have personal thoughts, preferences, intentions and emotions, and consequently to make personal choices in life.

Backstage

The possibility to differ mentally and behaviorally from others may explain our feelings of freedom. But what is happening backstage, out of sight of our conscious perception? Who or what is initiating and steering our thoughts, intentions and choices? In other words, what are the degrees of freedom of our autonomy?

That neural mechanisms seem to precede, initiate and guide what we perceive, prefer and choose (Dijksterhuis 2011, Libet 1983, Soon et al. 2008), suggests that our autonomy is less free than we experience. Backstage, out of sight of our consciousness, seems to reign the neural muscular system. By using our senses, it seems to control, more or less automatically, the world outside and inside our

body. It does this, among other means, by reflexes, routines and, when needed, by putting us on track of attention, exploring and learning. For example, when we are hungry, we often start to think and talk about food. Intuitively this makes sense, but who or what initiates our thoughts and words? Do *we* initiate them because we are hungry? Or does our neural muscular system initiate them because of a low blood sugar level? Whatever the answer may be, the undeniable importance of unconscious neural processes widely opens the door for determinism.

There is much to write about the importance of unconscious neural processes (Dijksterhuis 2011), but in this article we will discusses only one aspect of the will that illustrates how intertwined conscious and unconscious processes are. We will look at the way we assign personal value, or valence, to everything around us (Colombetti 2005, Frijda et al. 2014, Mauss & Robinson 2009, Shuman et al. 2013).

Earthworms

In popular terms, one could say that understanding personal value is a little bit like "understanding" earthworms. Earthworms seem to move towards what is edible or beneficial, and away from what is risky. In a way, we seem to do the same. Recognizing something of importance normally brings us to an intentional state to move towards or away, depending on whether we may expect a positive or negative effect (Valckx et al. 2011, Lavender & Hommel 2007, Lowe & Ziemke 2011). This primitive impulsive reflex of the body is mostly supported by other impulses of our autonomic system (Blessing & Gibbins 2008, Schulz et al 2007). In terms of direct conscious action however, it is normally inhibited by the cortex (Aron 2007, Bradley & Lang 2000, MacLeod 2007, Schel & Crone 2013, Schel et al. 2014). A cortical inhibition that is all but perfect, as we see for example in our body language when somebody is sympathetic to us. In this case, our feet may automatically point towards this sympathetic person, or if not sympathetic, it is our back that turns.

In our intent to move we seem even more like earthworms than we probably want to know, especially in our responses to positive stimuli. We not only tend to move towards the object of sympathy. It seems that we actually want to put it in our mouths. So why do we kiss our loved ones? Or even more strange, why do we kiss the world cup when victorious? In many cases adults may hold back this impulsive action as it may be impropriate or unhealthy, but as a baby we explore all kinds of things by putting them in our mouth.

Valuable Feelings

The conscious perception of the reflex of the body to eat, fight or flight may mirror the individual's personal value of things and actions (Damasio 2000, Gelder 2006, Mauss & Robinson 2009, Schulz et al 2007). However, our neural muscular system also seems to use another trick to indicate importance. When we recognize something that can satisfy or dissatisfy, our system automatically allows us to "taste" this effect beforehand. For instance when we are buying a lottery ticket, the same brain circuits start to boast as if we already won (Clark et al. 2009, Breiter et al 2001). This suggest that value may involve at least two mechanisms. On the one hand is the motivating mechanism of the automatic body intention to move towards or away; what we may call attraction, affection, aversion (Lang & Bradley 2010, Craig 2003). On the other hand is the motivating state of the desire or need to experience the "tasted" satisfaction to its full extent or if negative, to avoid disgust, what we may call respectively longing and repulsion (Andrews & Hawthorn 1988, Cisler et al. 2009, Decker 1971, Nesse 2005, Rolls 2012, 2014, Shuman et al. 2013).

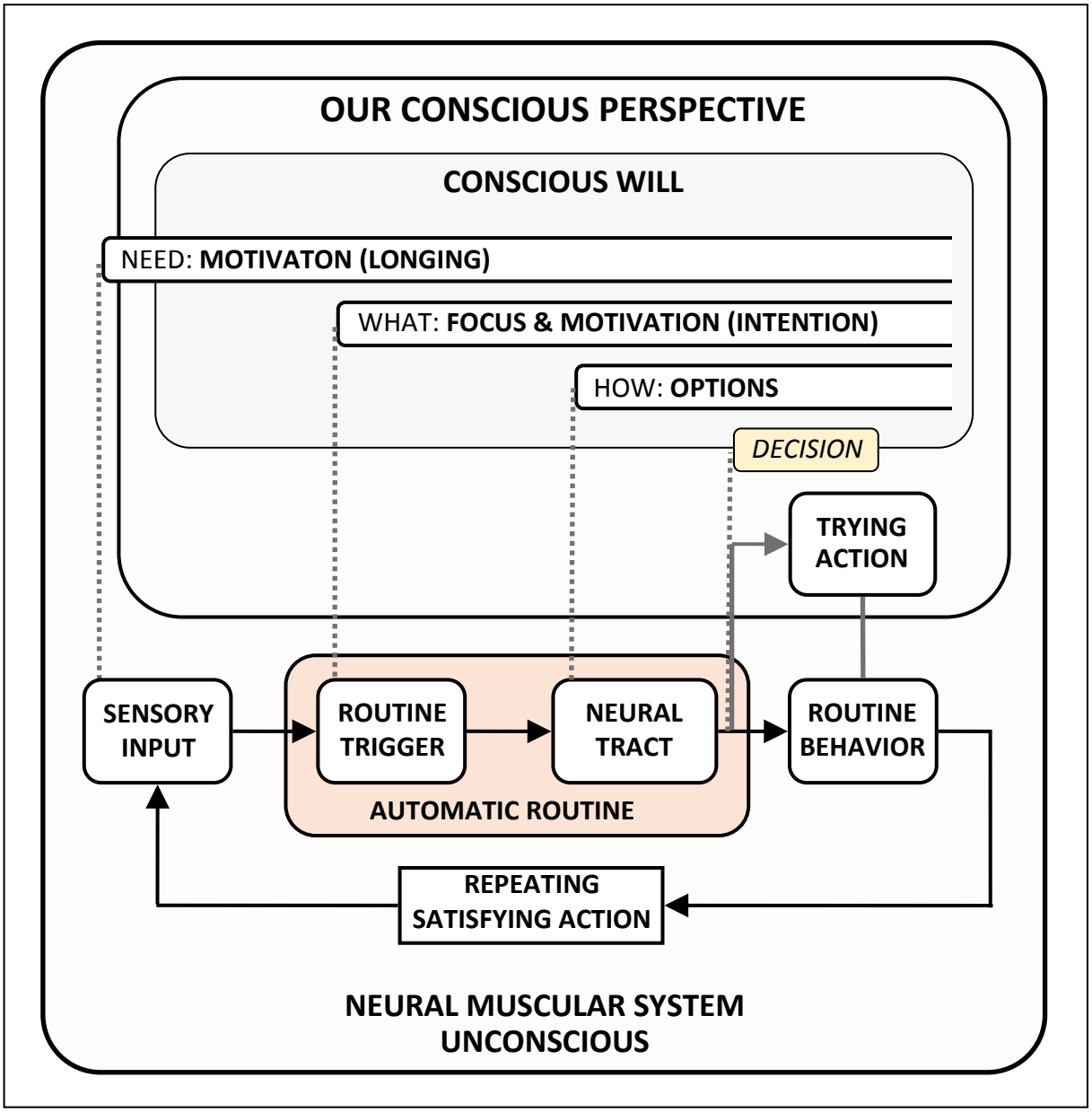

Fig. 4. THE CONSCIOUS WILL IN THE FUNCTIONAL CONTEXT OF THE NEURAL MUSCULAR SYSTEM. *The CONSCIOUS WILL we perceive as a MOTIVATION to get us to work in finding and TRYING, HOW we can control what may satisfy our needs best. Different from the physical world, the CONSCIOUS WILL offers steadiness in terms LONGING, FOCUS and INTENTION to explore, try and learn new routine behavior. Actions that SATISFY seem to create the neural tracts for new routines. REPEATING turns these ACTIONS gradually into automatic ROUTINE BEHAVIOR. ROUTINES that may function unconsciously as long as the NEURAL MUSCULAR SYSTEM can recognize INPUT automatically as the ROUTINE TRIGGER. The unconscious counterpart of what we experience as a DECISION may be the moment that a behavioral option results in real trying. When a new option becomes routine behavior, deciding also becomes an unconscious automatic step.*

From *our* perspective, value may be defined as, the experienced intent to move *towards* because we long for satisfaction, or *away* because we fear distress. Seen from the perspective of the neural muscular system, value seems to be part of a mechanism to focus the organism on what seems most

promising in terms of exploring and learning in the actual setting (fig. 4). Interestingly the experience of value fades when learning is complete and a new behavior has become a routine (Lewis & Todd 2005). For example, as an experienced driver we may no longer experience the potential risk of oncoming traffic as we probably did during our initial driving experiences.

Personal Data

How do we know the value of things? Our longing for pleasure and satisfaction may be inborn and also our inclination to explore, but we must learn the value of objects, circumstances and skills. This learning probably starts while we are in the womb and continues throughout our lifetime (Heckhausen et al. 2010). When we taste a delicious cake, our neural system will normally store the experience along with the effort to get the cake and the circumstances in which we obtained it (Schedlbauer et al. 2014, Watrous et al. 2013). In the same way, we will remember negative experiences with the intention to avoid these conditions in the future (Gray 2002, Rolls 2014).

As a result of this learning, we create a vast personal "database" of the value of things as a function of actual needs, circumstances and possible actions (Damasio et al. 1996). This database of personal values seems hardly active during daily routines, but is immediately activated when we run out of control over our satisfaction, for example, seeing an appetizing or sexy roadside billboard. The database seems to be more or less a private global positioning system, automatically indicating where to focus when exploring and learning is needed.

As part of the brain circuitry, this database allows fast value assessment based on memory. The high speed at which we process the database indicates that memory suffices for valuing (Cannon 1927). Nevertheless, the body may also react at "low" speed when we recognize something or somebody as important, for example sweating or blushing, and more generally in terms of stress, intentionality or relaxation (Faigman, et al. 2003, Melo & Gratch 2009). This reaction may play a role in body language (Gelder 2006) and presumably also in new learning.

Weight of Arguments

The value of things seems to be based on the conscious perception of body-intention and longing, but what about our preferences based on physical, economical or other discrete values: the biggest, the longest, the cheapest, the sweetest, etc.? A child may create havoc because his or her glass has just one millimeter of lemonade less than those of other children. Is this about physics or feelings? If it were about physics, what would be the common measure when we compensate for less lemonade with a larger piece of pie? It could be about the physical amount of food or about the emotional amount of parental affection. However, when we add more and more aspects to a choice, there seems to be no common physical measure available. In this case, we normally return to what feels best in terms of longing, intentionality and achievable satisfaction. A powerful and robust value that spontaneously seems to integrate the importance of what we are perceiving.

Realizing that the value of things is about feeling, suggests that our will and choices are not directly based on facts or logical arguments, as they present themselves to us, but rather on the feelings triggered by this information. Our will and approach may start with the perception of facts or arguments but our intentions and decisions seem based on the feelings generated. This also offers a possible explanation as to why our will can challenge logic and common sense. At the core, we seem to choose *what feels best* and not *what reasons best*. Nevertheless, defining, reasoning and understanding play an important role in our daily choices. Not necessarily because of logic and understanding as such, but more likely because we want to be sure about triggering the right feelings, once we have to choose.

New Meaning

A new picture of the conscious will evolves. The new concept shows the will as a conscious state in which we are encouraged to control what can satisfy us best. An intentional state set off by our neural muscular system at the moment it can no longer control satisfaction automatically. The neural muscular system needs us, the organism, to interact physically with the world around the system to explore, try and learn new options of control. The will seems to offers the steady conditions for this in terms of focus, motivation to and duration (fig. 4). In this new context, the conscious will might be defined as *a conscious intentional state, characterized by focus, intention, desire and duration. A state set off by our neural muscular system in motivating us to explore and learn the options of control that the neural muscular system needs to control the world outside the system automatically*. A definition that positions the conscious will, functional or not, central in the context of steering to keep our routine behavior attuned to changing conditions around the neural muscular system.

This new definition implies an understanding of the will on three levels. First, on our anthropocentric level, showing a will that targets the satisfaction of our needs. Second, on the brain level, showing the will as a part of the toolbox of our neural muscular system to control the world around the system. And third on the integration level, showing that *our neural muscular system* and not *us* is running the evolutionary battle of control.

Practically all research about the will tries to understand the will only on the first level and predominantly in a technical sense, for example in relation to determinism or moral responsibility (O'Connor 2010). It is difficult to grasp why the importance of our feelings of will have been practically ignored for so long. This seems an omission that might explain, in part, why traditional philosophy never could produce answers that took hold in society. People feel what they want and a challenge might be to address also this aspect in the understanding of the will and deciding. However, it may be clear that there is an even bigger challenge for will-related studies. That is the challenge to go beyond the present anthropocentric fixation that seems to blindfold us from understanding the will in the broader context of control and evolution.

Decision and Choice

This new concept does not address free deciding, the central issue of the free-will debate. Nevertheless, the new concept may have a substantial impact on the understanding of deciding.

A first notion is that the new concept positions all conscious perception, including conscious deciding, in the context of learning new routine behavior. This means that studies about conscious deciding should be about learning situations and not for example about routines that already exist. This is not only because both mechanisms use different neural networks (Schenk & McIntosh 2010), but also because the neural activity may differ considerably (Crammond & Kalaska 2000, Cisek & Kalaska 2010). For example the research of Grey Walter in 1963, that strongly suggests that the brain decides and not *we*, seems to be about an existing button-push routine to change a viewing-slide (Grey Walter 1963, Ostrowick 2007). Also the studies of Libet and many others seem to use existing routines, such as moving a wrist or a finger. We will not discuss here the possible impact of the use of existing routines in the studies (see: Klemm 2010, O'Connor 2009, Pacherie & Haggard 2010) but we have to wonder whether these studies can show the effect of what conscious deciding should be about: trying and evaluating a promising option in terms of need satisfaction.

A second notion is that the concept suggests that deciding means choosing the option that feels best to us. On a neural muscular level only this option will result in motor output (Prescott 2008, Schall 2013). It may be clear that such a mechanism leaves little room for doing otherwise at the very

moment of choice. Nevertheless, we have a possibility to do otherwise. By postponing the moment of choice, for example because choosing seems risky, we may create time for additional information. This additional information might change the option that feels best to us. From *our* perspective, we may experience this postponing as hesitating, thinking it over, or asking a friend's opinion. Nevertheless, also in the new moment of choice, there will only be room for the option that feels best at the very moment of deciding.

This brings us to a third and final notion on deciding, the conscious vetoing of a decision to act. The veto debate roots in Libet's findings of the time delay between a neural initiative to act and our conscious perception of deciding, suggesting that we have no free will (Libet et al. 1983, Libet 1985, 2003). Libet wanted to prove that we still can veto the neural "decision" within the conscious 0.2 seconds before acting. That would leave a little "elbow room" for the free will (Ostrowick 2007). We showed already that Libet's the time delay does not conflict with the new concept of the conscious will.

Also vetoing seems to fit the new concept. Vetoing means effecting new contra indicating input or insights. A veto can be part of gradually exploring and learning new routines as well as a fast stop routine. Organisms need fast stop routines to deal with unexpected impacts as for instance a sudden predator attack. We can veto an intended action even up to 0.1 before acting (Matsuhashi & Hallett 2008). A veto in the research of Libet and others may be fully willed action as suggested by Libet, but given the time window of 0.2 sec in its research, it rather might be mix of an automatic stop routine and a conscious assessment of this routine (Kühn & Brass 2009).). To assess and improve a routine afterward, a description of the input, output and actor has to be the possibility also when it is a fast automatic routine.

Epilog

This article is written to share the explanatory potency of an approach of the will from the perspective of the neural muscular system, an approach that unexpectedly resulted in a new concept of the conscious will.

Does the new concept rescue the free will or free deciding? If we approach the will from *our* perspective and if we read free as autonomous, the concept might rescue it in a certain sense. It shows that we consciously and intentionally are involved in the learning of new behavior. The correlation of consciousness with neural processing positions our conscious perception and so our conscious will within the functional context of the neural muscular system. Of course this correlation does not answer the question about the functionality of our conscious involvement. Nonetheless, the concept displays a remarkable intertwining of the conscious will and the learning of new routine behavior. However, not knowing the nature of consciousness the functionality of this intertwining cannot be proven, but it also should not be excluded.

This nevertheless may be a small anthropocentric spark of good news about our involvement in the steering of our behavior. However, seen from the perspective of the neural muscular system, the new concept suggests that our conscious experiences, including those of the will, are not about *us*, but rather part of the incentives of *our neural muscular system*. Incentives to get us to work at the moment that the system needs us to keep up with its outer physical world. It is a double layer, which positions our explicit conscious world, including *us* and our conscious will, within the instrumental context of *our neural-muscular system*. Without realizing it, all our thoughts, experiences, actions and emotions, seem to be part of how our neural system controls "its world". This is an alien perspective that displays *us* as unaware puppets on the strings of the *neural-muscular system*. A hijacking of our conscious world that is very difficult to see as potentially real and accordingly we must wonder, are we ready for it. Nevertheless, the new concept, if true, will unavoidably force us to reflect anew on

who we are. A perspective that may cause us to drift further and further from what we thought to be for ages; beings at the core of consciousness and creation.

Does this mean that we no longer can be loving or proud of ourselves? The new view on the conscious will in no way erases our perceptions, values or emotions. Even when every aspect of our conscious world is instrumental to our neural muscular system, we continue to live within the same conscious world confined by our personal experiences. We have no other choice, and emotions such as love and pride inevitably will stay a part of us, individually and as a society.

There is still a lot to discover about functionality and our conscious will, nonetheless the concept presented here may open a new door to the mystery of will. This may be a small first step, as further research is needed to reveal conclusive insights into the nature of the conscious will. Insights, it seems, no longer of a mysterious free entity but rather the expression of our mental sovereignty and uniqueness; conscious, autonomous, and at the same time inseparable from the universe in which we all live, love and die.

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