

Commentary
The Illusion of Conscious Will

Daniel M. Wegner
MIT Press, Cambridge (MA), 2002

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In this Commentary, I intend first to introduce the philosophical discussion about the *conscious experience* of will advanced in Daniel Wegner's *The Illusion of Conscious Will*. Second, I will criticize his theory of conscious will as it does not solve the hard problem of consciousness. Furthermore, I will show how one of its keys concepts (namely, the distinction between nonvoluntary and voluntary actions) is a special case of mereological fallacy. In the end, I will refer to Dynamical System Theory (TSD) to suggest "to put into brackets" our natural attitude towards agency (inner mental states as causes of our actions), thereby introducing a more neutral framework to talk about natural agency as an emergent self-organizing behavior of nonlinear coupled systems.

1. THE ARGUMENT OF *THE ILLUSION OF CONSCIOUS WILL*

According to Wegner, conscious thoughts are not the actual causes of our actions as they play no causal role in action-making processes. Instead, human behavior is caused by unconscious mental states at a subpersonal level, that is, the real causal sequence underlying human behavior involves massively complicated sets of mental mechanisms whereof the agent is not aware. Hence, if Wegner is right, free will is ruled out from our action-making processes: it is just an *illusion*.¹

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¹ For Wegner, conscious will is an illusion as much as a magic trick (Wegner 2002, p. 27). The audience believes in a magic trick because the perceived causal sequence (i.e., «the set of events that appears to have happened») is the best and easy way to explain what is happened, when the real causal sequence, i.e., («the set of events the magician has orchestrated behind the scenes») is often more

Following Wegner, there are two different kinds of mental causation: (i) *apparent* mental causation, that is, *phenomenal will*, or “the feeling of doing something”: conscious experience of will that is self-reported by an agent at a personal level; (ii) *real* mental causation (i.e., *empirical will*: the actual unconscious linkage between mind and action, namely an intricate set of physical and psychological processes at a subpersonal level).

From the distinction between these two kinds of mental causation, Wegner moves to explain why people believe that conscious mental states are the actual cause of their actions. He argues that «*people experience conscious will when they interpret their own thought as the cause of their action*» (Wegner 2002, p. 64).² Experience of will arises when the agent *infers* an apparent causal path between conscious thought and action whereas the actual causal path is not present in agent’s consciousness: conscious thought and action are both caused by unconscious events. Thereby, experience of will is actually an *inference* about the cause of our actions which may be mistaken.³ Most important, Wegner adds that this inference will produce the experience of conscious will only when the perception of the action satisfies three conditions: *priority*, *consistency*, and *exclusivity* of the thought about the action.

The priority principle claims that the experience of conscious will depends on «the timely occurrence of thought prior to action» since «causal events precede their effects, usually in a timely manner». Therefore, «thought that occurs too far in advance of an action is not likely to be seen as the cause of it» (Wegner 2002, pp. 70-71). The consistency principle claims that “the thoughts that serve as potential causes of actions typically have meaningful associations with the actions”, which means that conscious thoughts occurring prior to the act must be semantically related to the latter. Accordingly, when people «think of one thing and do another – and this inconsistency is observable to them – their actions does not feel as willful» (Wegner 2002, p. 79). Finally, the exclusivity principle claims that the experience of will arises

complicated than the perceived sequence: «The illusion of conscious will occurs by much the same technique» (Wegner 2004, p. 653).

² This is Wegner’s *theory of apparent mental causation* (Wegner and Wheatley 1999).

³ As Wegner pointed out, it does not matter «how we are convinced that our thoughts cause our actions, it is still true that both our thought and action could be caused by something else that remains unobserved» (Wegner 2004, p. 655). Indeed, an experimenter can make arise the experience of conscious will so as to the subjects believe that they are controlling a perceived action though they are doing nothing actually (see Wegner 2002, pp. 74-78).

when the conscious thoughts are perceived as the exclusive cause of the action. Thus, the exclusivity that when conscious thoughts «do not appear to be the exclusive cause of the action» then people “experience less conscious will” (Wegner 2002, p. 90).

Nonetheless, according to Wegner, even though the experience of free will is a mere epiphenomenon it may work as a *mind’s compass*. The feeling of doing is an *indicator* telling us something about the state of our own agency. Experience of conscious will inform us about the *authorship* of perceived causal sequences, whether what it is happening is or is not in our control: «conscious will is an emotion that authenticates the action’s owner as the self»; – «This helps us to tell the difference between things we’re doing and all the other things that are happening in and around us» (Wegner 2002, p. 327).⁴ According to this hypothesis, we do not experience conscious will when the consequences of our actions do not satisfy one of these three conditions of causal inference: experience of conscious will is undermined by the «absence of any of these conditions» (Wegner 2002, p. 70). Consequently, an action is *experienced* in-control when the three conditions are satisfied as well as it is *experienced* out-of-control when one of those conditions is absent.

Wegner’s philosophical main argument is based upon the explicatory distinction between the personal and the subpersonal level (e.g., Dennett 1969 and Stich 1978).⁵ Conscious will belongs to the personal level whereas

⁴ Wegner underlines that conscious will is an emotion, “an informative feeling” (i.e., Damasio’s somatic marker; see also Damasio 1994).

⁵ On the one hand, the personal level explains agent’s behavior in the terms of their conscious mental states (i.e., desires, beliefs, plans, intentions). Accordingly, the causes of the behavior are conscious mental states such as intentions and purposes. For they are *teleological* explications. At this level, the content of mental states is *conceptual*, that is, (a) the subject is able to access *consciously* to it, (b) it is *compositionally structured* (i.e., inferentially integrated with other mental content, namely holistic), and (c) it is *semantically evaluable* by means of truth-conditions, truth-makers, and so on. Furthermore, the mental states are attributed to the whole *person* (the subject who perceives, believes, desires, acts). On the other hand, the subpersonal level explains agent’s behavior in the terms of unconscious mental events (i.e., computational, functional, neurophysical states) attributed to domain-specific and informationally encapsulated cognitive subsystems, or modules. In other words, subpersonal states are attributed only to an *anonymous* part of a person: the brain. Finally, the content of subpersonal states is *nonconceptual*, which means that (a) the subject *cannot* access consciously to it, (b) it is *unstructured* (i.e., inferentially isolated), and (c) it is *non-semantic* (i.e., it does not have truth conditions). Finally, sensory inputs, neural events and motor outputs are connected by *causal factors*. For subpersonal explanations are not teleological, but *mechanistic*. (For a debate on the relationship between these two levels, see Clark 2003 and Bermúdez 2003; for a critical point of view

the actual causes of our actions lie on the subpersonal one. I suggest that the problem of free will (namely, how can something like the free will exist in a causally determined universe?) emerges when human behavior is explained at the subpersonal level. At this level, mental phenomena are explained as *mechanisms*⁶ whose function is to connect some sensory inputs to some motor outputs. Most important, a mechanism is causally determined, its operations are always initiated or maintained by an external cause and the state of each component depends on the operations of another component. Now if we think, as Wegner does, that action-making process is sustained by psychological mechanisms, then free will cannot play any causal role in them. For the free will is *not* a mechanism but it is an uncaused cause which cannot be caused by any external cause.

2. WEGNER'S ANTI-LIBERTARIAN INCOMPATIBILISM

The current philosophical debate on free will shows two opposite views: compatibilism and incompatibilism (Watson 1982). On the one hand, according to compatibilism, causal determinism does not rule out the free will. On the other hand, according to incompatibilism, free will is not consistent with the causal determinism. Furthermore, there are two different kinds of incompatibilism: libertarianism and anti-libertarianism. Libertarianism claims that free will exists and, consequently, causal determinism must be false. On the contrary, anti-libertarianism claims that free will does not exist *because* causal determinism is true. With the respect of these sketched framework, Wegner's account of free will belongs to the anti-libertarian incompatibilist view.

First, it endorses incompatibilism because free will and causal determinism are «incommensurable» (Wegner 2002, p. 322). Free will is conceivable only as an uncaused cause, which should be «*unresponsive to any past influence*» and derives from agent's ability «to do things that do not follow from anything» (Wegner 2002, p. 323). However, if causal determinism is true, then

on personal/subpersonal distinction, see Hurley 1998, pp. 29-54; Bennett and Hacker 2003, pp. 68-107).

⁶ A mechanism is a structure performing a function in virtue of its components parts, component operations, and their organization (e.g., Bechtel and Richardson 1993).

everything is caused by something else, and the concept of uncaused cause is not acceptable

Second, Wegner's account is anti-libertarian as he thinks that free will cannot be integrated in a rational theory of human action. Indeed, free will as an uncaused cause is caused by nothing, neither by the agent. For this reason, free will can act only randomly. It follows that none is able to control their own actions, and that free will deprives the agent of any causal power on his/her own actions. Instead, Wegner claims that only causally determined psychological mechanisms can provide us to an effective theory of human action: «free will is not an effective theory of psychology and has fallen out of use for the reason that it is *not the same kind of thing* as a psychological mechanism» (Wegner 2002, p. 324).

As anti-libertarian incompatibilist approach, Wegner thus proposes eliminative view about free will concept. Indeed, if free will cannot describe the actual psychological mechanisms causing human action, then it can be ruled out from the psychological vocabulary.⁷ Wegner advises a paradigm shift in the analysis of free will from intentional psychology to cognitive neuroscience. Depending on this ungrounded concept, the debate between determinists (“robogeeks”) and free-willers (“bad scientists”) is futile and ill-posed as it depends on the concept of free will, but if we eliminate this concept, we eliminate the debate as well. Instead, we should not look for a neural surrogate of free will because free will is conceptually wrong. Rather, we have to study two distinct phenomena: mechanisms of action-making and feeling of doing. The former consists in causally determined unconscious thoughts that are the actual causes of our actions. The latter (namely, conscious will) is just a kind of feeling, a perception detecting whether an action is in control or out of control:

Whether we embrace the illusion of control or reject it, the presence and absence of the illusion remain useful as clues to what is real. Just as the experience of will allows us to know what we can control, the lack of this feeling

⁷ We can outline three reasons to eliminate free will following Paul Churchland's eliminative materialism (Churchland 1981, pp. 75-76): (i) free will suffers explanatory failures on epic scale, it explains only some aspects of human actions but it is not able to solve many others issues (e.g., How can an uncaused force exist in a deterministic world?); (ii) free will has been stagnant for a long time as compatibilist and incompatibilist views still show the same unsolved problems (e.g., the problem of self-control); (iii) free will explanations are not reducible to neuroscience because they involve uncaused processes whereas brain's processes are mechanistic.

alerts us to know what we *can't* control, what surely exists beyond our own minds. (Wegner 2002, p. 333)

3. THE HARD PROBLEM AND THE MERELOGICAL FALLACY

I suggest Wegner's account on conscious will does not succeed to solve two problems, namely the *hard problem* and the *mereological fallacy*.

First, the hard problem is the problem about the conscious experience, that is, *why* something like conscious experience exists (Chalmers 1996, ch. 3). For cognitive sciences, consciousness is a hard problem because whilst psychological states can be reduced to functional or computational states, the consciousness resists to any reductionist attempt. Indeed, two subjects may be functionally identical even though only of them has a conscious experience. Therefore, psychological explanations are *blind* about conscious experience insofar as they do not distinguish a subject who has a conscious experience from a subject who has not (e.g., a zombie, a robot). Now, Wegner's account exposes conscious experience as a detector of authorship (a "mind's encompass") about our actions. Nevertheless, robotics shows us that some embodied agents are able to control and to detect whether an action is self-performed or not without conscious experience. This is recognized by Wegner himself when he writes that even a robot may have conscious will if it was able «to keep track of what it was doing, to distinguish its own behavior from events caused by other things» (Wegner 2002, p. 340). However, if conscious experience is not necessary for an authorship detector, then we are not explaining *why* in human beings the former supervenes on the latter. In other words, the hard problem is still there: *why* does the conscious experience of will exist if an embodied agent is able to detect the authorship about its own actions without conscious experience?

Second, Wegner's account rules out the distinction between in-control and out-of-control actions. Indeed, according to Wegner, conscious experience of will is a kind of knowledge, it is nothing else than an inference about the causes of our actions. As a result, the *voluntariness* experience of our actions is an illusion, for the subject does not actually control his/her own actions. However, if the subject cannot control his/her actions at all, *nonvoluntariness* experience is an illusion as well. For non-voluntariness is not a matter of fact, rather it is an *epistemic* instance that informs the subject when his/her knowledge about the cause of our actions is wrong. Accordingly, the

distinction between voluntariness and non-voluntariness is not an ontological instance but it depends on subject's epistemic structure: actually there are not real things like voluntariness and nonvoluntariness actions.

I suggest that the concepts of being-in-control and being-out-of-control are related to folk psychology inasmuch as they imply a substantial Self (i.e., a central controller) enabled of controlling its behavior by means of conscious thoughts, but this is exactly what Wegner denies. As *personal* categories, at a subpersonal level voluntariness and nonvoluntariness have not place, for there is not a *person* enabled of controlling his or her behavior. The point is that at the subpersonal level, we have only loop circuits or recurrent networks wherein the events are transformations of state vectors, whilst we can see voluntary or non-voluntary actions only if we *interpret* these subpersonal events as result of a conscious Self which is endowed with contentful mental states. Consequently, Wegner makes the "*mereological fallacy*" (Bennett and Hacker 2003, p. 73). He applies psychological predicates, which are attributable only to human beings as whole (i.e., a Self) to subpersonal processes and states.

I suggest that Wegner's theory on conscious will make the mereological fallacy as they contain descriptions which are encapsulated in the human observer's "cognitive domain" (e.g., Maturana and Varela 1980). The cognitive domain is nothing else than the observer-centred theory which describes the cognitive system's behavior in terms of inner mental states (i.e., propositional attitudes, informational states, inner representations). Thereby, the challenge is to explain why agent's behavior shows recurring patterns of activity, which constitute his *personality*, without any reference to observer-centred descriptions. In order to provide a naturalist account of agency, we ought "to put into brackets" our natural attitude towards the agency, which posits (un)conscious mental states as the causes of the behavior, and to address to a more neutral framework (namely, non-observer-centred).

4. AGENCY IN MOTION

Dynamical Systems Theory (TSD) may be a powerful framework to explain natural agency.⁸ Self-organizing complexity is a powerful tool for

⁸ Dynamical system's state evolves in real time and may show significant nonlinearities (i.e., it is often discontinuous, or disproportional, and hardly predictable as well). Dynamical system's state (i.e., *instantaneous physiologic state*) changes continuously in time plotting *trajectories* in phase

understanding psychological systems (e.g., Piers *et al.* 2007) as well as agency without personal concepts such as voluntariness and nonvoluntariness. The brain is a self-organizing nonlinear system coupled with the environment. Thus, the behavior of the system depends on many variables concerning both the nervous system and the environment.⁹ As any nonlinear dynamical systems, psychological systems will show a self-organizing dynamics (i.e., phase transitions, attractors). In this sense, *personality*, which depends on recurring patterns of the agent's activity, is the spontaneous dynamics of the brain-environment system:

There is no unitary 'ego' or 'self' that directs what we do. Instead, the spontaneous activity of neurons and groups of neurons, in continual transaction with the environment, is associated with the complex emergent activity we call *personality*. A complete description of personality therefore should involve neuroanatomy, neurodynamics, environment, and functioning.

space. Most important, their dynamics may show *phase transition, attractors* (i.e., regular patterns of activity which may be periodic, quasiperiodic or chaotic), and *repellers* (i.e., unstable configurations of a system which tends to "avoid" them). Nonlinear dynamical systems encompass *chaotic, complex, and self-organizing* systems. A chaotic system has two proprieties: i) it is *sensitive to initial conditions*; ii) its behavior is *unpredictable* over a long time level though it is strictly deterministic. A complex system is composed by a network of heterogeneous parts that interact nonlinearly in order to produce an emergent global behavior. A self-organizing dynamical system has no internal or external program that directs its functioning, though its behavior can produce recurrent patterns of activity. Biological systems, such as a brain, are complex, dynamic, nonlinear, chaotic and self-organizing systems (e.g., Kelso 1995). (For a general introduction to TSD see, also Stewart 1990).

⁹ Thus, this dynamical account is clearly externalist. Indeed, when we talk about the object of study of cognitive science, we can be internalist or externalist. Roughly, internalism claims all cognitive processes and states are encapsulated in the head of the subject, so that it proposes a methodological solipsism: the behavior of the subjects can be explained referring only to the internal processes and states occurring in their own brains. Externalism, instead, claims cognitive processes and states extend and encompass features of the physical and social environment (e.g., Clark and Chalmers 1998; Wilson and Clark 2009). How is it possible? Part of answer lies in the premise of TSD: brain and environment are nonlinear coupled systems (e.g., Van Gelder 1998). Indeed, as Tony Chemero and Michael Silberstein have pointed out: «Dynamical systems theory is especially appropriate for explaining cognition as interaction with the environment because single dynamical systems can have parameters on each side of the skin. That is, we might explain the behavior of the agent in its environment over time as coupled dynamical systems, using [...] coupled, nonlinear equations» (Chemero and Silberstein 2008, p. 14). In other words, the state changes of the brain depend on changes in the external environment as much as the changes in the external environment depend on the changes of the brain. For it is important for cognitive modeling to track causal processes that cross the boundary of the individual organism as it is to track those that lie within that boundary.

(Grigsby and Osuch 2007, p. 42)¹⁰

From this dynamical standpoint, personality depends on the dynamics of the brain-environment system which may exhibit basins of attraction (namely, a region of states wherein more attractors are placed) and repellers. As the variables of the systems are distributed between brain and environment, a small change in the brain activity, or in the environment, may provoke a global evolution in the whole system changing its basin of attraction. Some basins of attraction are “stronger” and more stable than others insofar as they can be changed only by altering order parameters deeply. In fact, unlike “weak” attractors and repellers, the change of a “strong” attractor requires much energy and time.

Agency is a self-organizing capacity of the system of altering its own state by engaging in certain actions. In fact, nonlinear dynamical systems are well-known for the *circular causality* (Kelso 1995, pp. 8-9), that is, their own states are able to alter the order parameters in order to alter their own states. The significant propriety of self-organizing systems is the capacity of adapting their spontaneous dynamics according to the changes of order parameters. Consequently their dynamics is context-sensitive, for its evolution depends on the changes of order parameters.

Order parameters may be changed by some performed actions that provoke a phase transition switching the basin of attraction. Depending on gravity force of the basin of attraction, the agency is a continuous fuzzy process that may require time for changing dynamics:

those acts that require greater alterations from habitual patterns of behaving require more agency (viz., greater deliberate effort) than those that represent repetitive behaviors with strong attractors and high probability of occurring. (Grigsby and Osuch 2007, p. 64)

¹⁰ As nonlinear result of a complex dynamical system, person’s behavior is determined by many factors. Some of them operates at the cellular level (e.g., membrane permeability and ion channel conductance, blood glucose level, concentration of neurotransmitters), others operate at a neurodynamical level (e.g., emotional state, motivational status, pain or discomfort, level of energy/fatigue, level of arousal), others reflect physiological state such as the sleep-wake cycle or neuroendocrine influences (e.g., cortisol, testosterone, progesterone, adrenaline), and still others are environmental features such as ambient temperature, level and type of sensory stimulation), or the presence or absence of certain people (e.g., parents, enemies) (Grigsby and Osuch 2007, p. 42).

5. THE DYNAMICS OF FREE WILL

Surprisingly, the dynamical agency view may be consistent with free will, although self-organizing systems are deterministic.

Firstly, we can reshape the concept of *autonomy* or *libertas spontaneitatis*. According to the classic view, an action is not free-willed if it is heterodetermined. However, from the standpoint of TSD, there are not distinction between endogenous and external causes since brain and environment are a whole system. Environmental and cerebral factors are equals: there is not an inner Self separated to an outer environment. As Maturana and Varela have pointed out: organism and environment are *structurally coupled* (Maturana and Varela 1980).

Even though the distinction between autonomy and heteronomy does not make sense, we are nevertheless able to reshape the concepts of voluntariness and nonvoluntariness without a central controller. Control is not a dichotomist propriety but it is conceivable as continuous gradual process so as to a system can have more or less control. As a consequence, systems with more control are those that are able to change easily their basins of attraction, whereas systems with less control are those that are not able to change basins of attraction even though the order parameters have been altered by their own actions. Indeed, strong attractors are invariant respect to initial condition, for this reason the systems with strong attractors are not really responsive to environmental changes. If so, the behavior's stability is not a synonymous of control, but of out of control. Instead, the random, chaotic or unstable activity of the brain is warranty of control because this kind of activity allows the brain to be in «a state of maximum responsiveness» (Freeman 1995) so that it is «poised on the brink of instability where it can switch flexibly and quickly» (Kelso 1995, p. 26). Inasmuch as the brain has and shifts multiple co-existent attractors, which can be competitive or cooperative, the dynamics of the brain-environment system is “metastable”. Accordingly, the agents experience loss of control when some attractors are stronger than others so as to they cannot change the behavioral patterns. This does not mean that the Self is weak but that the Self *is* the intrinsic dynamics of a dynamical system (namely, an autopoietic unity) which is able to self-produce and self-regulate its own processes. In this sense, the behavior is what the organism *does* when it engages the world by actively regulating its exchanges with it (e.g., Di Paolo 2005). As autopoietic system, the organism's behavior has the only purpose of maintaining its intrinsic

dynamics in a range of state's values. In other terms, natural agency is the *regulation* of the organism's intrinsic dynamics which is enacted by itself in order to maintain the state's variables in a certain range of state's value.

Second, a dynamical view of agency can partially preserve *libertas indifferentiatae*. How could agent's ability of "doing and choosing otherwise" be consistent with a deterministic view? First of all, *libertas indifferentiae* depends on a decision-making process. Decision-making process can be understood using theory of chaos as a trajectory of a system unfolding in real time: beginning at an unstable state, "visiting" various places in phase space and finally moving toward a stable state that corresponds to the nonchaotic, or chaotic, basin of attraction (Walter 2001, p. 185). Hence, decision-making process is a point of instability (namely a 'bifurcation') into a phase space where the behavior of the system is unsteady and fluctuating so as to it could take either of two directions until it settles down in a steady state. In this sense, the agent, as chaotic system, could have chosen or done otherwise. Furthermore, initial conditions does not causally determine the behavior of the system, rather a chaotic system is more or less sensitive to some changes and variables. Therefore, the switch from chaotic to stable behavior can be achieved by altering a single order parameter. Changes of order parameters can only increase or decrease the probability of occurrence of a behavior where attractors and repellers are only behaviors with a high or a low probability of occurrence. Hence, the ability of "doing and choosing otherwise" is a continuous gradual process as some changes of order parameters can increase or decrease the probability of occurrence of some behaviors reducing subject's agency.¹¹

¹¹ For instance, consider a subject affected by a tumour of adrenal gland provoking an overproduction of hormones. This disease causes features of his personality such as aggressive mood. Suppose he has killed his wife when he had a fit of anger: could he have done or chosen otherwise? Probably he did, but an alternative behavior had a low probability of occurrence because his tumour has changed some order parameters (i.e., hormones level in the blood). So his agency has been reduced by order parameters' alterations that have increased the probability of occurrence of a aggressive behavior, seen as a strong attractor. Degree of agency depends on system's chaoticness: the initial conditions (i.e., order parameters) can increase, or decrease, the degree of stability of a system. Thus, when they increase the instability of the system, more the system will have the control of its behavior and the capacity of could have done otherwise (i.e., of switching from a steady state to another one).

6. CONCLUSION

The aim of this Commentary was to philosophize Wegner's theory of conscious will. I have suggested some philosophical implications and a proposal of solution. First of all, I have introduced the main philosophical argument assumed by Daniel Wegner in *The Illusion of Conscious Will*, namely the distinction between personal and subpersonal level of explanation. Wegner's theory of apparent mental causation claims the existence of conscious and unconscious mental states, where only the latter are the actual causes of our actions. Second, I have situated Wegner's account of free will in the current philosophical debate in which it may be seen as a form of anti-libertarian incompatibilism. Third, I have criticized Wegner's theory as it does not solve the hard problem of consciousness. Moreover, it fails to distinguish in-control and out-of-control actions. The reason of this misunderstanding is in the mereological fallacy: Wegner applies psychological predicates (voluntariness and nonvoluntariness), which are attributable only to human beings as whole (i.e., a Self, central controller, executive program), to subpersonal processes. Fourth, I have proposed as neutral framework the Dynamical System Theory (TSD) which may allow us to "put into brackets" our natural biases concerning agency. I have suggested that agency is the self-organizing capacity of a nonlinear dynamical system of altering its own state by engaging in certain actions without controller by adapting their spontaneous dynamics according to the changes of order parameters. Finally, I have sketched up two dynamical accounts of the concept of agency in order to reshape both the concepts of *autonomy* or *libertas spontaneitatis* and of *libertas indifferentiatæ* by means of tools of TSD.

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