From Habits to Compulsions: Losing Control?

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Abstract: In recent years, there has been a trend in psychiatry to try and explain disorders of action in terms of an over-reliance on the habitual mode of action. In particular, it has been hypothesized that compulsions in obsessive-compulsive disorder are driven by maladaptive habits. In this paper, I argue that this view of obsessive-compulsive disorder does not fit the phenomenology of the disorder in many patients, and that a more refined conceptualization of habit is likely to be helpful in clarifying the distinctions between disorders of action. There are thus two aims to this paper. The first is to highlight the issues pertaining to the view that compulsions are the result of an over-reliance on the habitual mode of action, leading to a loss of agentive control. The second aim is to examine the view of agentive control implicit in those accounts, and see how other conceptions of agentive control might do a better job at accounting for the distinct ways in which persons suffering from pathologies of action may be said to lack control.

Keywords: Agentive control, Disorders of action, Obsessive-compulsive disorder

In recent years, researchers in psychiatry have proposed explaining disorders of action in terms of an over-reliance on the habitual mode of action. In particular, it has been hypothesized that compulsions in obsessive-compulsive disorder (OCD) are driven by maladaptive habits. In this paper, I challenge this view on different fronts. First, as a few authors have observed, this hypothesis is not in line with the phenomenology of the disorder in many patients. Second, the habit view, which aims to explain all disordered action (compulsions, impulses, addictive behaviors) as deriving from an over-reliance on the habitual mode of action, neglects the crucial differences between these kinds of actions, especially between compulsions and impulses. I propose that a more refined conceptualization of habit is likely to be helpful in clarifying the distinctions between disorders of action. There are thus two aims to this paper. The first is to highlight some issues pertaining to the view that compulsions in OCD are the result of an over-reliance on the habitual mode of action, leading to a loss of agentive control. The second and more original aim of this paper is to examine the view of agentive control that is implicit in those accounts, and explore how other conceptions of agentive control might do a better job at accounting for the distinct ways in which persons suffering from pathologies of action may be said to lack control. How can we account for the different ways in which agents who act impulsively (such as patients with addiction, attention deficit hyperactivity disorder, or impulse-control disorders) and agents who act compulsively, can be said to lack control? While other researchers have pointed out that compulsive and impulsive actions have distinct properties, I am offering a new way

of conceptualizing this distinction by taking *attention* as the central criterion of agentive control.

In the first section of the paper, I discuss the hypothesis according to which compulsions in OCD are driven by maladaptive habits. I then rely on recent literature in philosophy and psychology to highlight the fact that the "behavioral parallel" between habitual actions and compulsions drawn by defendants of this theory does not account for the different phenomenological bases underlying habitual and compulsive actions. Compulsions do not seem to be performed without conscious attention, or unintentionally. On the contrary, compulsive agents might be exerting excessive conscious control over their actions, causing them to constantly doubt their performances (have I washed my hands *correctly* or *enough*?). This feeling of insecurity towards one's actions inhibits the normal process of habit formation, and undermines the agent's ability to act spontaneously and unreflectively, so that she needs to resort to deliberation and focused attention to perform routine actions. In fact, it has been argued that OCD patients' recourse to conscious control is precisely what diminishes their sense of agency (de Haan, Rietveld & Denys, 2015).

What are the implications of this with regard to the taxonomy of unreflective actions, and particularly with regard to compulsivity and impulsivity (such as displayed in addiction, impulse-control disorders, or attention deficit hyperactivity disorder)? I will examine a few different conceptions of agentive control as implying inhibition, guidance, and attentional focus, and the extent to which they enable us to account for the different ways in which agents who act impulsively, compulsively, and habitually can be said to lack control. We will see that, on a certain view of control, impulsivity and compulsivity can be viewed as two opposite excessive dispositions on a spectrum. Refining our view of agentive control therefore has fruitful implications for our understanding of the distinct kinds of unreflective action, including the ones found in disorders of action.

Finally, I discuss issues pertaining to the definition of *habit* as a single construct opposing goal-directed behavior, in light of recent work in the philosophy of action. Indeed, while we rely on unreflective skillful actions most of the time, our behaviors do not seem either stereotyped or deprived of a purpose. The view according to which habitual actions are disconnected from the agent's intentions and goals is an implausible one.

Compulsion as Habit

In recent years, researchers in psychiatry have proposed to explain disorders of action such as addiction, OCDs and impulse-control disorders in terms of an over-reliance on a habitual mode of action (Everitt & Robbins, 2004; Graybiel, Rauch, 2000; Page et al., 2009). The *habit theory* has become prominent for explaining how subjects can maintain persistent patterns of actions in the absence of a reward which would act as a motivation, and as such it seems to complement the *motivation* theory (Sjoerds, Luigjes, Van Den Brink, Denys, & Yücel, 2014). However, as we shall see, this theory also raises the question of our conceptual understanding of what habits, or habitual actions, are. Indeed, we can wonder whether associating the habitual modes of action upon which we rely to perform routine actions with the compulsions performed by a person with OCD is conceptually helpful. In what follows, I will briefly expose the habit theory of compulsions, before questioning several of its assumptions.

OCD is characterized by the repetition of routine, everyday actions (such as locking the door, turning off the stove, washing one's hands) in response to an intruding fear (that the house will burn, that one will get contaminated, etc.). This has led researchers to hypothesize that flexible, goal-directed action control is compromised in OCD, and that compulsive acts are instead driven by maladaptive habits (Voulougouris, Chamberlain, Robbins, 2009; Graybiel, Rauch, 2000; Page et al., 2009). For instance, Gillan et al. (2011) argue that, in the same way as it has been suggested for drug and gambling addiction, an imbalance between habitual and goal-directed control may underlie the urge to perform compulsive acts in OCD sufferers. What may be happening, it is argued, is that patients with OCD rely excessively on the habitual mode, resulting in the repeated performance of actions in the absence of a goal or reward.

As Gillian et al. suggest, washing one's hands before preparing a meal may constitute a goal-directed action that is performed to avoid contamination. However, after multiple repetitions of this action, the habitual system can begin to take control. When the habitual system takes over, we find greater *efficiency* in action, but also a *loss of behavioral flexibility*. It is in this sense that an agent who relies excessively on the habitual system can be said to lack control over his actions. According to the authors, this loss of flexibility in action characteristic of the habitual system is exemplified by "slips of action." For instance, when a person who intends to retrieve her keys from the kitchen counter is driven by the "kitchen environment" to go wash her hands instead, her habitual response of hand washing is not seen as goal-directed and lacks flexibility insofar as it is "triggered" by the kitchen environment (Gillan et al., 2011). The hypothesis is that, in a similar manner, persons with OCD rely persistently on the habitual system, leading to uncontrolled behaviors such as repetitive hand washing.

This hypothesis, which associates the compulsive hand washing of OCD sufferers with the habitual hand washing we may engage in automatically when entering the kitchen, is partly based on supposed "behavioral parallels" between habits and compulsions. The underlying idea is that since habitual action is synonymous to a deficit in goal-directed action control, and compulsions occur when an agent uncontrollably performs an action repeatedly without a goal, then compulsions might result from an over-reliance on a habitual mode of action.

This hypothesis rests on multiple assumptions; assumptions regarding the nature of habits on the one hand, and regarding the nature of compulsive acts on the other. In what follows, I discuss the plausibility of this view of compulsions, and present an alternative view of the relationship between compulsions and habits, which will attempt to better account for the phenomenology of compulsions in OCD patients.

Compulsion as Inhibition of Habit

The habit theory of compulsions rests on multiple assumptions, including a "behavioral parallel" between habits and compulsions, where habits are understood as somewhat "mindless" and, importantly, as non-goal-directed. If compulsions performed by patients with OCD might at first appear to bear such characteristics, a closer look at compulsions makes it deeply arguable whether or not they are in fact performed "mindlessly," without conscious attention, or unintentionally.

Patients suffering from OCD are plagued by persistent, intrusive thoughts of threatening scenarios which elicit anxiety (obsessions), and they feel compelled to perform compulsive mental or physical acts as attempts to neutralize the thought or the threat it represents (Abramowitz, McKay, Taylor, 2008; Rachman, 1993). The most common compulsive acts include repetitive checking (of locks, stove, switches), washing, counting, reassurance seeking or unnecessary confessions, and repetitive attempts to attain symmetry (Attiullah et al., 2000).

Many experts believe that compulsions are goal-directed and voluntary acts which arise from the intense pressure to appease obsessive worries. Anand and Chandra (2014, p. 345), for instance, insist on the fact that: "compulsions are voluntary, goal-directed, non-rhythmic and under conscious control." In a similar manner, the philosopher Judit Szalai (2016) insists on the voluntary nature of compulsive acts in OCD which, as she notes, are initiated by the agent as a means of control in response to intrusive thoughts. The agent is not passive in the performance but rather intends to deploy those actions for a reason.[1]

A first point that these theories make is that compulsive acts are exerted with the intention to avoid some catastrophe or negative outcome that the individual foresees. According to such a view, compulsions emerge from an extreme sense of responsibility and a heightened awareness of potential threats. Compulsive acts are performed out of excessive concern for the safety of oneself and others, and seem to serve a purpose: neutralizing thoughts of possible catastrophes involving contamination, murder, aggression, offense and

the like.[2] Freeston and Ladouceur (1997, p. 344) define neutralizing as "a voluntary, effortful cognitive or behavioral act that is directed at removing, preventing and attenuating the intrusive thought and the associated discomfort." It is a conscious effort on the agent's part to regain some control over their obsessive fears. Here is a case report from a consultation with a young mother with OCD, presented by Denys (2011):

> When I'm alone at home and I see my daughter sleeping in her crib then I can see myself strangling her. I'm terribly shocked by the thought and I am very frightened by it … In the beginning I occasionally thought about it, but now I think about it all the time. Though I realize that the thought is absurd, I can't stop it … Whenever the thought occurs, I wash my hands. It seems that I can rinse this terrible thought away causing the anxiety to decrease. I have to do it exactly 8 times and am not allowed to touch anything else while washing or to think about my daughter. If I don't do it properly, I have to start all over again.

If compulsions can then be characterized as actions performed out of concern and with a goal in mind, they are also performed with much focused attention. In fact, it has even been argued that compulsions in OCD are characterized by the tendency to exert *too much* conscious control and attention onto one's actions (Arzeno Ferrão, Almeida, Bedin, Rosa, & D'Arrigo Busnello, 2006; Lochner & Stein, 2006).

A second point that these theories emphasize is the fact that OCD patients have a tendency to doubt the effectiveness of their action, and therefore tend to substitute automatic routine actions with controlled strategies. OCD is characterized by persistent doubting: persons suffering from the disorder may wash their hands until they bleed and still doubt whether they have washed them *enough*. As de Haan et al. (2013) note, when experiencing this kind of doubt, patients typically repeat the action, paying *extra attention* to the sequence of movements.

Several authors have highlighted the idea that patients with OCD tend to substitute automatic routines with controlled strategies (Joel et al., 2005; Salkovskis, 1998; Soref, Dar, Argov & Meiran, 2008). Persons with OCD, it is argued, tend to "replace the degree of somewhat intuitive certainty obtained by automatic processing by the certainty from well-elaborated actions" (Dek, van den Hout, Giele, & Engelhard, 2010, p. 586). According to this view, compulsions in OCD result from an inability to trust one's habitual dispositions to correctly perform everyday, routine actions such as locking the door or washing one's hands, rather than from an over-reliance on an intuitive and automatic mode of acting.

An associated hypothesis is that OCD patients apply effort in action for its own sake, rather than for the sake of accomplishing a given action properly. It has been hypothesized that patients with OCD may associate acting *effortfully* with acting in a *responsible* way (Van den Hout & Kindt, 2004). Since patients with OCD typically worry about whether they are acting responsibly, deploying effortful strategies instead of habits might be a way to assuage this doubt. However, paying conscious attention to routine actions may trigger more insecurity and doubt than reinsurance.

It appears as though OCD might constitute an enlightening example of important issues having to do with the interactions between spontaneity or unreflectivity in action, agentive control, and the successful performance of routine actions. I believe that some confusion in the debate on whether OCD patients exert too little or too much control on their actions hangs on what we mean by agentive *control*, and especially on what it means to lack control in action. An effort to determine in which way or according to which criterion compulsions manifest a deficiency of agentive control may help us both understand compulsions and other disordered actions better, and also provide an opportunity to refine and enrich our view of agentive control. In the next section I present some hypotheses as to which elements need to be constitutive of agentive control so that we can account for the distinct ways in which persons suffering from pathologies of action may be said to lack control.

Compulsions and Impulses I: Lacking Control?

Agents who act habitually, compulsively and impulsively may all be said to lack control. How-

ever, we should note that they lack control in significantly different ways. The term "control" has been used by theorists of action with quite different definitions in mind. I believe this is responsible in part for the contradictions we have exposed earlier, where, on the one hand, it is claimed that compulsive agents lack control and "behavioral flexibility," and on the other, they are said to exert too much conscious control on the sequence of movements required to perform the compulsion. These two statements might not necessarily be contradictory; more plausibly, using the term "control" with regard to action, they refer to two different concepts. In what follows, I will first review two views of control: *inhibitory control* and *guidance control,* before proposing that a third view of control proves more useful.

According to a minimal view of control put forward by Dreyfus: "I am in control of my movements in the sense that I can stop doing what I'm doing if I will to do so" (2002, p. 380). This definition creates a first, obvious distinction between habitual action on the one hand, and compulsive and impulsive action on the other: if agents who act habitually are able to easily stop performing their habitual action, agents who act compulsively or impulsively typically experience great difficulties inhibiting their action, and are only able to do so at the cost of major effort (Pickard, 2011, 2012). I believe it is with this concept of "inhibitory control" in mind that Hanna Pickard (2011) proposes that there is in fact no compulsion, only impaired control, weak-will and hard choices. Even if the ability to do otherwise or to choose an alternative course of action is undermined in OCD, it is still rational to encourage the patient to use her power of will and determination to exercise her agency and limit the time spent performing compulsive acts.

On Dreyfus's view of control, an agent who acts compulsively has "lost control" because he is apparently unable to stop performing an action. However, impulse control disorders are similarly characterized by a person's inability to refrain from the urge to repetitively perform a particular act. Kleptomania for instance, can be defined as a "repetitive failure to resist urges to steal things that are not needed for personal use or for their monetary value" (Aboujaoude, 2008, p. 79). On this basis, we would thus still end up grouping together disorders of action such as OCD; pyromania, kleptomania, compulsive gambling (so-called "impulse-control disorders") in the same cluster.

Another more sophisticated view of control suggests that it accounts for an agent's ability to *adjust* her actions to changes in the environment, *respond* to both expected and unpredictable environment circumstances, and *revise* her strategy accordingly (Fridland, 2015). In the words of Fischer and Ravizza (1998), agents who lack control lack the ability to be *receptive* and *reactive* to reason. Again, on this view of control, both the impulsive and the compulsive seem to be equally able to *receive* and understand the reasons why they should act otherwise; the problem rather lies in the *reaction*, in the ability to use these reasons to form motivations which are strong enough. This theory of agentive control cannot account for the facts that (1) compulsions and impulses are underpinned by very different phenomenological bases, and (2) they are guided by motivations which are different in nature.

These views of agentive control remain silent about the distinct ways in which agents who act compulsively and agents who act impulsively can be said to lack control. Still, as Cochrane and Heaton (2017, p. 184) rightly emphasize, "we should not understand OCD as an impulse disorder … the OCD sufferer is in many ways the opposite of impulsive." While they both act in ways which can be defined as inflexible and unreactive to reason, it is clear that we must distinguish between the agent who acts compulsively and the agent who acts impulsively. We are, however, still missing the key to conceptually distinguish what opposes these two agents from the point of view of agentive control. In the next section I argue that a third view bears a more promising prospect in this regard.

Compulsions and Impulses II: Opposite Ends of the Spectrum

In which way might we refine our view of agentive control so that it helps us to conceptually distinguish between disorders of action? As Wayne Wu (2016) points out, the problem with current

accounts of agentive control is that they ignore a central psychological capacity which is essential to control: *attention*.

Indeed, if we consider *attentional focus* as the central criterion of agentive control, the distinction between an agent who is in control and an agent who is not depends primarily on whether the agent is paying conscious, focused attention to his movements and the resulting outcomes in the world while performing the action. Viewed in this way, an action performed with much attentional focus will not be defined as uncontrolled. It is in this sense that compulsions can be said to be "under conscious control" (Anand & Chandra, 2014), or defined as "controlled behavior" (Arden & Linford, 2008).

While the role of attention in philosophical theories of agentive control has long been ignored, a recent account of OCD by a philosopher puts attention at the root of the disorder. Coming from a predictive coding framework, Levy (2018) argues that the dysfunctional tendency of OCD sufferers to assign probabilities for threatening events arises from a prior dysfunction related to attention. On this account, both the symptoms and the particular cognitive dispositions of OCD sufferers arise from overly precise "pushmi-pullyu" sensory and motor representations (Millikan, 1995). Dysfunctionally heightened attention brings excessive precision to pushmi-pullyu representations which predict catastrophic scenarios. While Levy focuses on the role of disordered attention with regard to the prediction of feared outcomes, and not on the way heightened attention might affect action performance, the two accounts are compatible in that they put dysfunctionally heightened attention at the root of OCD. In fact, the idea that higher probabilities are assigned to threatening scenarios may well be what triggers the agent to pay extra attention to her actions. Levy's theory thus provides a way of explaining how the prediction of negative outcomes (catastrophes, etc.) is connected in OCD patients with the desire to seek certainty and extinguish doubt.

Then, if we consider the attentional criterion, compulsions and impulses indeed appear, as Cochrane and Heaton suggest, at two opposite ends of the continuum of controlled action.[3] Indeed, if compulsions can be considered as the result of too much attention exerted onto the performance of routine actions, impulsive actions are rather generally viewed as instances in which the agent performs actions with little attention and consideration for the negative consequences. While the agent who acts compulsively exhibits a hyper-awareness of possible negative outcomes and scenarios, the impulsive agent only seems to experience such awareness after the action has been completed. Both of their behaviors are inflexible, but the causal histories behind these behaviors are very different, and focusing on the criteria of attention helps to bring out the crucially different motivations driving these agents.[4]

Impulsivity is characterized by a strong urge to perform an act (such as stealing, in kleptomania) that is pleasurable in the moment but causes remorse afterwards (Aboujaoude, 2008). Compulsions rather originate from an extreme sense of responsibility, coupled with a heightened awareness and overestimation of potential threats. While impulse-control disorders involve an intrinsic motivation, a positive reward—the perspective of a pleasurable experience—compulsions are rather performed to protect oneself against a threat that one perceives as catastrophic, and looming. If there is any phenomenological change to be gained from performing a compulsion, it is a return to a status quo: the absence of anxiety. This is a consideration which bears profound consequences for our moral treatment of these two types of behavior. Indeed, "telling a compulsive handwasher to be temperate misses the point of why the behavior is performed" since in OCD the compulsive act is used as a way to reduce anxiety (Putman, 1997). OCD sufferers have to fight, not against strong desires, but against intruding fears. What they should be encouraged to cultivate is rather what Putman (1997) calls "psychological courage", which he defines as the courage it takes to face our irrational fears and anxieties.

Reasonable agentive control may then be found somewhere in between these two excessive dispositions: the disposition to pay too much attention to one's actions while performing them, and the disposition to pay too little attention to one's actions. But where exactly is the correct balance

between these two excesses to be found? How much should we actually resort to conscious attention for our everyday actions? I will now turn to addressing this question, which will lead me to discuss the concept of habit as presented in the habit-formation theory of compulsions.

Attention, Intention, and Action

In the previous section, I have delineated three notions of control, tied respectively to inhibition, guidance, and attention. The idea that OCD might have to do with excessive attention paid to everyday actions may leave us wondering: when and how much do we actually pay conscious attention to our actions as we perform them? A somewhat disturbing yet plausible answer is: "most of a person's life is determined not by their conscious intentions and deliberate choices but by features of the environment that operate outside of conscious awareness and guidance" (Bargh & Chatrand, 1999, p. 1). If this is right, we may be acting in an unreflective manner most of the time, and attentional control of action might only be deployed in particular cases, such as when we are trying to learn a new skill (Dreyfus, 2002) or when some unexpected or novel event occurs, and also perhaps when stakes are particularly high.

Otherwise, our actions are typically guided by automatic processes. Nonetheless, most of the time, our inclinations to act seem well guided: we respond appropriately to many situations without the need to deliberate or apply conscious attention. Furthermore, paying conscious attention to routine actions is not ideal; it is well known that heightened awareness can interfere with skilled, automatic routines, so that consciously attending to one's movements can hinder the performance of the skill (Beilock, 2010; Di Nucci, 2013; Dreyfus, 2007; Papineau, 2013). The fact that we often act without applying conscious attention to our movements does not, however, necessarily mean that we are acting without a purpose, or unintentionally. This observation should lead us to question our view of habitual actions.

The intentional, goal-directed aspects of actions such as habitual actions, seem to have been until recently ignored or rejected. While I am here focusing on the contemporary philosophical literature, it is worth noting that the concept of habit has a long and complex history, which testifies to the dissensus on the nature of habit, and on the properties to be attributed to this type of actions. In their "genealogical map of the concept," Barandiaran and Di Paolo (2014) have identified two main trends in the history of the concept: an "associationist trend," which conceives of habit as the passive result of an automatic association between stimulus and response, bearing no intentional or rational dimension, and an "organicist trend," which conceives of habit as patterns that are informed and formed by individual intentionality, and stabilized by their enactment. As the authors note, neuroscientific research on habit has been largely based on the former tradition.

Recent literature in the philosophy of action aims at expanding our largely associationist-informed view of habit, and rehabilitating the intentional, rational, dynamic properties of habit, by questioning the duality between, on the one hand, automatic and non-intentional processes, and on the other, dynamic and intentional processes. As Fridland (2015) rightly pointed out, a damaging consequence of "dual-system theories" of action is that it is often assumed that conscious, controlled, intentional processes are to be explained in conceptual, propositional terms, while unconscious, automatic processes result from purely causal, mechanistic connections, independent of personal-level intentional states. Habitual actions, while being guided by automatic processes, are intentional and context-sensitive actions. If environments had the power to directly trigger specific actions in us, we would all be displaying these same reflexes in a rigid and stereotyped manner. Far from being reducible to cases of "slips of action," the habitual mode of action is one we rely on most of the time, and one which seems to be more flexible and intentionally driven than previously believed.

In a similar way in which the gymnast intends to perform her skilled actions on the bar (Friedland, 2015), I intend to press the keys of my keyboard to write this sentence. That intention is formed somewhat automatically (it does not require explicit deliberation), but it is an intention all the same: my pressing these keys is not "accidental."

Moreover, although most of my actions involve the (automatic) execution of sophisticated sequences of movements, they are nonetheless intentional: I *intend* to play the piano (although I do not need to deliberate on the way to move my fingers on the notes in a certain way); I intend to throw back the tennis ball (but not to move my arms at this precise angle and force); I intend to go downstairs (but not to move my feet in this specific manner), and so on. The fact that many of our everyday actions take the form of stimulus-response associations guided by automatic processes (be it in the decision-making or in the execution processes) does not make them stereotyped, rigid, and disconnected from personal-level intentions.

This should make us even more cautious about drawing parallels between compulsive action and habitual action. Referring to OCD patients' tendency for persistent doubting, Hookway remarks "If obsessively, we consider every possible doubt and demand reasons for every belief we employ in our reasoning, then we will be unable to exploit all the knowledge that is embodied in habits and emotional response" (2008, p. 64). While compulsions in OCD are misled (by dysfunctional emotional and cognitive dispositions), rigid, and unresponsive to reasons, habits are informed, intentional, and flexible.

Notes

1. As Szalai remarks, some actions performed by OCD sufferers may become habitualized and partly automatic. In this case however, "we probably cannot talk of compulsive action any longer, only of habitualized movements that have lost their meaning" (2016, p. 56).

2. Note that this view may not be the most relevant for certain forms of compulsive behavior as found in chronic severe OCD. As already noted by Szalai (2016), these forms of compulsive behavior seem disconnected from intentions and subjective reasons. For less severe forms and earlier stages of OCD, however, the characterization provided in this section seems relevant.

3. Lochner and Stein (2006) express a similar view: they group disorders of action linked to risk avoidance as belonging to the "compulsive" cluster which implies over-control of behavior, and "impulsive" disorders linked to disinhibition at the other end of the spectrum.

4. While the view proposed in this paper does not constitute a new explanation of the causes of OCD, it offers a clinically relevant re-conceptualization of the relationship between compulsions and the subject's internal states and processes. Together with papers such as Levy's (2018), it encourages therapeutic interventions that take the patient's attentional strategies into account.

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