

# Passive fear

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**Abstract** “Passive fear” denotes a certain type of response to a perceived threat; what is distinctive about the state of passive fear is that its behavioral outlook appears to qualify the emotional experience. I distinguish between two cases of passive fear: one is that of freezing in fear; the other is that of fear-involved tonic immobility. I reconstruct the explanatory strategy that is commonly employed in the field of emotion science, and argue that it leaves certain questions about the nature of passive fear unanswered. I subsequently propose an account of passive fear that builds upon a phenomenological theory of emotions, placing emphasis on the interpretation of current research into human tonic immobility.

**Keywords** Fear · Emotion · Tonic immobility · Behavior · Sartre

## 1

Emotion is invariably considered as a state that is closely related to behavior. The exact character of that relation, though, remains a matter of dispute. Emotion has been thought to cause behavior directly, or to bring it forth by means of an independently conceived desire, or to accompany behavior as a reinforcing or hindering factor. Theories that support one or more of the above alternatives abound in the literature.<sup>1</sup> Despite their differences, though, those theories appear to me to share an important methodological commitment: they conceive of emotion as existing in principle independently of behavior.

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<sup>1</sup>Damasio (1999) and Prinz (2004) attempt a division of explanatory labour followed by proposals for the combination of all the three options, based on the hypothesis of somatic markers—a hypothesis criticized by Linquist and Bartol (2012). Smith (1998) and Goldie (2000) emphasize the role of desire in emotional expression, an emphasis that is challenged by Hursthouse (1991) and Döring (2003). Ben-Ze’ev (2000); Roberts (2003) and Helm (2010) provide astute discussions of the theoretical terrain.

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I shall consider here an emotional phenomenon that puts pressure on the doctrine of separability between emotional state and emotional behavior. “Passive fear” is the expression often used for capturing a certain type of response to a perceived threat. What is distinctive about the state of passive fear is that its behavioral outlook appears to qualify the emotional experience.

I will begin by distinguishing between two cases of passive fear: one is the (commonly noted) case of freezing in fear; the other is the (generally ignored) case of fear-involved tonic immobility. Work on tonic immobility in animals has been systematically developing over the past four decades<sup>2</sup>; it is rather recently that the occurrence of tonic immobility in humans has attracted the interest of cognitive scientists<sup>3</sup>—and it has yet to capture the attention of philosophers.

I shall reconstruct the explanatory strategy that is commonly employed in the field of emotion science, and will argue that it leaves certain questions about the nature of passive fear unanswered. I will subsequently propose an account of passive fear that builds upon the phenomenological theory of emotions outlined by Jean-Paul Sartre. In particular, I shall explore whether a Sartrean approach can contribute to the interpretation of recent findings of research into human tonic immobility.

## 2

At first hearing, “freezing in fear” and “tonic immobility” might be taken to denote similar events, differing perhaps from each other only as a matter of the degree of apparent inactivity. However, the two phrases pick up phenomena that stand at the opposite ends of a behavioral scale.

Freeze occupies the first place among fear responses: “The frightened man at first stands... motionless and breathless”, wrote Darwin in 1872, and his remark is echoed in most contemporary studies of emotion.<sup>4</sup> The fear response to a threatening ‘object’ varies along a number of factors, such as the suddenness of its appearing and the unpredictability of its movements, as well as with the setting within which one encounters the threat.<sup>5</sup> Thus, freezing may quickly give way to active avoidance (by fleeing or hiding), active defense (by threatening or fighting), and a pattern of

<sup>2</sup> Hofer (1970); Hennig (1978); Ewell and Cullen (1981); cf. Maser and Gallup (1977) for the history of animal tonic immobility observations over the past three centuries, Forkman et al. (2007) for tonic immobility research with domestic animals, and Vieira et al. (2011) for a review of neurological research into that phenomenon. In the course of her insightful analysis of emotional motivation, Tappolet (2010) offers a discussion of tonic immobility in animals, drawing mainly on Archer’s (1979) seminar work.

<sup>3</sup> Abrams et al. (2009): 550; Volchan et al. (2011): 13; cf. Galliano et al. (1993); Gallup (1977); Bovin et al. (2008); Fuse et al. (2007); Heidt et al. (2005); Humphreys et al. (2010); Fiszman et al. (2008); Lima et al. (2010); Rocha-Rego et al. (2009).

<sup>4</sup> Korte et al. (2005); Pape (2011); Volchan et al. 2011. Reduced body sway, that is the hallmark of freezing in fear, has also been observed in experimentally controlled situations presenting low threat, such as the viewing of aversive pictures and exposure to height challenges: Azevedo et al. (2005); Facchinetti et al. (2006); Adkin et al. (2000); Carpenter et al. (2001).

<sup>5</sup> By ‘setting’ I refer not only to the actual or artificial environment within which the threatening situation is played out (e.g. in an open field, or in the confines of a laboratory), but also to the agent’s relation to his or her conspecifics (e.g. whether he or she faces the danger in isolation, or as the protective half of a couple, or as a member of a larger group). The importance of setting for the methodology of research in animal fear is well emphasized by Forkman et al. (2007).

vocalizations, facial expressions, and bodily postures.<sup>6</sup> At the end of that repertoire of emotional responses comes tonic immobility: a reversible—and, thus, temporary—state of physical inactivity and relative unresponsiveness to external stimuli, in situations experienced by the agent as involving extreme danger.<sup>7</sup>

Studies of tonic immobility in humans have focused on survivors of urban violence and victims of sexual assault. The traumatic character of the experiences, and the difficulties (both ethical and technical) in re-creating intense or inescapable life threats, make research into tonic immobility a highly demanding task. However, two recent studies are, in my view, very illuminating because they allow us for the first time to compare results from tests addressing tonic immobility outside and inside the laboratory. I shall present some of the experimental results, which bear directly upon the phenomenology of tonic immobility, before I address their significance for the philosophical discussion of passive fear.

In the first study the subjects were asked to provide detailed reports of their experience by means of specially designed questionnaires that accounted for three major factors: (i) physical immobility (how one's legs, arms, muscles, and voice felt during the episode); (ii) emotional experience (including feelings of horror, fright, and helplessness); (iii) dissociation (having trouble to keep one's eyes open, feeling faint or light-headed, a diminishing ability to feel pain, and one's body feeling cold).<sup>8</sup>

The study indicates that tonic-immobility reports present no significant sex differences—male and female survivors present similar scores in the psychometric tests. There is also no reported difference between the kinds of triggering incident—whether it was an interpersonal trauma, which included sexual or physical assault, an accident-related trauma, or a natural disaster.

What the study did show, however, was a clear correlation between reported tonic-immobility and post-traumatic syndrome disorder (PTSD). Among the subjects tested, those with PTSD not only scored higher on the relevant questionnaires, they also exemplified traits related to that disorder, such as dissociative experiences (derealization, depersonalization, altered time perception around the time of the traumatic event), or high levels of attentional involvement in imaginative activity (that is consistently correlated with hypnotizability).<sup>9</sup>

The role of post-traumatic stress disorder is also evident in the other study, which is apparently the first ever attempt to measure for tonic-immobility induced in the laboratory.<sup>10</sup> The subjects were invited to report on their experience in two separate contexts. First, at the beginning of the research process they reported, retrospectively, about their past traumatic experience at the actual incident.

Secondly, as the process unfolded, each subject recounted the event in some detail, the recount was re-structured as a second-person address, and was summarized into a script, climaxing at the most horrific moment of the incident. The script was recorded in a male neutral voice, and played to the subject. What the researchers then tried to assess was the presence of tonic immobility in the subject immediately after listening to the

<sup>6</sup> See Marx et al. (2008), for the defense cascade model; cf. Bradley et al. (2001); Lang et al. (1983); Mobbs et al. (2009).

<sup>7</sup> Fuse et al. (2007); Abrams et al. (2009); Volchan et al. (2011).

<sup>8</sup> Abrams et al. (2009).

<sup>9</sup> Kihlstrom et al. (1994); Kremen and Block (2002).

<sup>10</sup> Volchan et al. (2011).

script of their ordeal. By means of posturography (which returns accurate estimates of body sway by measuring the displacement of the centre of pressure on set surfaces), and electrocardiography (which calculates heart rate, both for acceleration, and for variability) the researchers gathered biological records of severe motor inhibition, characteristic of tonic immobility, for a 60 s period after the script presentation.

The research showed that for all subjects, irrespective of the particulars of their case, higher reports of tonic immobility at the beginning of the process, were clearly associated with lower amplitudes of body sway, accelerated heart rates, and diminished heart rate variability, just after the script presentation.

A striking difference, however, was noted between the two contexts among two groups of subjects. For sufferers of post-traumatic stress disorder, the immobility reports obtained at enrollment were similar to biologically correlated immobility reports after the autobiographical script presentation. For subjects without PTSD, the script-driven symptom provocation evoked lower scores in immobility report than those obtained during enrollment.

### 3

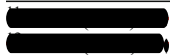
The presence of tonic immobility is clearly more pronounced in sufferers of post-traumatic stress disorder—that much seems clear from both studies we briefly reviewed. What is also evident from the subjects' first-person reports, is the appallingness of the real-life situations within which tonic immobility occurs.

The question that needs to be asked, hence, is not *whether*, but *why* tonic immobility occurs: Why do human beings respond with severe motor inhibition and unresponsiveness to stimuli in those situations? What is the reason that tonic immobility is a human fear phenomenon?

On that question the researchers are less forthcoming. Indeed, most of the studies in the field return one answer, which basically runs as follows: Tonic immobility is widespread in the animal kingdom because it carries survival value, either because predators are generally interested only in live prey, or because a predator's thinking that the prey is dead makes the predator loosen its grip, thus allowing the prey to escape.

I shall not comment here on how extensively the phenomenon occurs in various animal species (in fact, it is less widespread than one might initially think).<sup>■</sup> Neither shall I question the methodological sleight of hand characteristic of various popular generalizations, about adaptation mechanisms across animal species (generalizations that evolutionary biologists themselves are often reluctant to make).<sup>■</sup> Instead, I shall question the relevance of that explanation for tonic immobility in humans.

The problem I think is twofold. On the one hand, the popular explanation implies that tonic immobility occurs as a response to an attacking agent; hence, it assumes that tonic immobility is a last-ditch defense employed in an interpersonal combat. However, tonic immobility in humans occurs in a variety of circumstances where no predator (be it human or animal) is launching an attack: thus, we have records of human tonic immobility in naval, air and car accidents, in earthquakes, and at the exposure of



sudden death of loved ones. Most significantly, as we saw earlier, biological markers of the tonic immobility are registered even at a script-driven provocation, in the protective setting of a laboratory, where no predator is in view.

On the other hand, even in cases where the phenomenon occurs during an assault, it is anything but clear that the survivor employs tonic immobility so as to escape the attacker's grip: first, it is not evident that tonic immobility in humans functions as it does with animal predators, allowing the victim to escape; secondly, first-person reports of tonic immobility in life-threatening circumstances present it as a part of their horrible experience, and not as a means employed by the victim to secure a certain outcome.

We need, I think, a different approach to the phenomenon of tonic immobility. Without ignoring the adaptation value the phenomenon may carry—even despite the subjects' own rationalization of their experience—our account should make sense of tonic immobility as a crucial, arguably as the climactic, moment in fear experience.

I will outline a theory that appears to me particularly well suited to the relevant phenomena. Sartre's phenomenological theory of emotions includes an insightful discussion of the behavioral outlook of the, so called, 'passive' emotions. The Sartrean approach should help us articulate a plausible interpretation of freezing in fear and fear-involved tonic immobility. But first, we need to grasp Sartre's overall conception of human emotion.

#### 4

The core of the Sartrean view is that during an emotional episode one's relation to the world is 'magically' transformed by means of one's body.<sup>13</sup> The magic involved is readily explainable as soon as we appreciate the function of emotional response for a human being in situation. Briefly put, what makes the transformation of the word 'magical' is that what changes is not the material constitution of reality, but how reality is experienced by the agent and, consequently, how the agent responds to a thus transformed world.

The world is understood as a totality of phenomena linked by a complex network of references to each other. The way in which each phenomenon relates to others defines the type of world encountered by the subject. In the world of daily activity we experience reality as a combination of demands (for projects awaiting completion, bills to be paid, walls to be decorated) and affordances (given by fast computers, bank transfers, or D.I.Y. shops). The link between demands and affordances is itself experienced as ruled by deterministic processes between causes and effects. The 'instrumental world' of action is captured in the 'pragmatic intuition' of the situation that makes certain moves available for the subject, while denying her others.<sup>14</sup> And this points to a major contrast between action and emotion: for Sartre, the world encountered in emotional experience—what we variously characterize as a hateful, joyful, or bleak world—far from being identical to the world of action is clearly distinguished from the instrumental world. The distinction here is twofold.

On the one hand, the 'emotional apprehension' of the world hooks on to those qualities or aspects that carry affective meaning for the agent, while the pragmatic

<sup>13</sup> Sartre (1939): 39–41.

<sup>14</sup> Sartre (1939): 39.

intuition focuses on features of the situation that make or not possible the execution of a task, the realization of an objective, or the completion of a product.<sup>15</sup>

On the other hand, the agent's response in an emotional episode engages the overall stance and physiology of the body not so as to effect material changes in the world, but so as to alter her perception of reality, and, through that, her relation to the world: "during emotion, it is the body which, directed by the consciousness, changes its relationship to the world so that the world should change its qualities."<sup>16</sup> That change in qualities is what is called by Sartre "magical".<sup>17</sup>

The notion of 'emotional response' is rather ambiguous, and it would help our discussion to attempt a clarification of the various meanings of the term. We may call a response 'emotional' simply in order to distinguish it from other types of response—in pure thought, in imagination, or in practical deliberation whose aim is the achievement, through action, of a particular goal.<sup>18</sup> Secondly, we may interpret one's overall stance or conduct toward a situation as (part of) her emotional response, when that stance or conduct symbolizes her emotion.<sup>19</sup> Unfortunately the notion of 'symbolizing' is not itself unambiguous, and Sartre expends no time to clarifying it. I would suggest that the relevant sense is that of one thing (stance or conduct) communicating to a competent observer the presence of another thing (emotion) by being part of a larger whole containing the thing 'symbolized.' This notion of symbolization seems to be operative in the Sartrean analysis of both 'passive' emotions (as when one's bowed head and bent posture symbolizes one's sadness), and in the case of 'active' emotions (as when one's shouting symbolizes one's rage). The whole that includes both the sadness and the physical listlessness, both the rage and the shouting, is the human being in a situation.

However, according to Sartre, the holding of a relation between the symbolizing stance, attitude, or conduct and the emotion symbolized is not some inexplicable fact of the universe, but is itself subject to further philosophical analysis. And the analysis propounded by Sartre highlights the functional character of emotional response, not only in the case of 'active emotions' (as when one's shouting reduces the chances of properly listening to what anyone else says), but also in the case of 'passive' emotions (as when one's bowed head and bent posture limits the range of one's vision so that as little as possible of the cruel world is taken in).

There is, further, a notion of 'emotional response' that attaches to action which, while it can be described independently of the occurrence of emotion, is thought to be somehow better accounted for by reference to the emotion preceding the particular action. The issues here are quite tricky because strong intuitions seem to pull the analysis of this kind of 'emotional response' in very different directions.<sup>20</sup> I will state how Sartre accounts for a case of active fear in one's running away from a dangerous looking bear; we will then move to the main target of our discussion, that is the explanation of passive fear.

<sup>15</sup> "Emotion is a specific way of apprehending the world." Sartre (1939): 35

<sup>16</sup> Sartre (1939): 41. The role of the body in the formation of conscious experience is highlighted in *Being and Nothingness*, where Sartre purports (not with unqualified success, in my view) to block the dualistic repercussions of his masterful analysis of the Self in Part II (1, IV); cf. esp. Part III (2, sections I and III). My interpretation of Sartre's related ontological distinctions between different kinds and regions of being in *Being and Nothingness* is presented in ch. 6 of my (2011). (*Thanks to an anonymous referee for drawing attention to this issue*).

<sup>17</sup> Sartre (1939): 40, 43, 59.

<sup>18</sup> Sartre (1939): 35.

<sup>19</sup> Sartre (1939): 32.

<sup>20</sup> For some important discussions of this issue see Goldie (2000); DeLancey (2002) and Döring (2010).

Running away from the source of danger is standardly taken to indicate that an emotional response consists in the generation of a course of action that, in the agent's mind, serves a prudential end. We may then be led to populate the emotional response of active fear with the desire-belief apparatus, or any other related scheme on which we model prudential agency. However, running out of prudence is acting according to a plan; emotional fleeing, on the contrary, is a "magical behavior which negates the dangerous object with one's whole body, by reversing the vectorial structure of the space we live in and suddenly creating a potential direction on the other side."<sup>21</sup> It is not a case of reaching for shelter (as in prudential behavior) but of forgetting or negating the threat. The dangerous object is the focal point of fear, and – contrary to the case of prudential action – the faster one runs the more afraid one feels.

Let us see how this approach might help us make sense of the phenomena of passive fear, starting with freezing.

## 5

"A grimacing face suddenly appears pressed against the outside window; I am frozen with terror".<sup>22</sup> Most scientists of emotion would try to present an account of how that freezing with terror is made possible at a neurological or biological level.<sup>23</sup> Despite their undeniable importance, though, those accounts leave unaddressed the Sartrean concern about the functional significance of that phenomenon: what that phenomenon indicates for the life of the person who experiences fear, in terms of how that person engages with the object to which his fear is directed. The question, according to Sartre, is why, in the face of the horrible, are we frozen with terror; and the short answer goes as follows.<sup>24</sup>

"That face which appears at the window", Sartre astutely observes, "is presented, motionless though it is, as acting at a distance". And how does the subject respond to this fact? He is 'frozen with terror: by rendering oneself totally inert, 'frozen', (one wishes that) the whole scene, including the threatening presence outside the window, may 'freeze' with oneself. One aims to cancel the threat by cancelling its 'magical' ability of acting at a distance: what is 'frozen' is not only oneself in terror, but (one wishes) also the apparently imminent threat.

The choice of 'terror' as the relevant modality of fear experience in Sartre's example is, in my view, apposite. In contrast to *fright* (where an object presents an immediate harm or an aversive possibility, whose consequences—one wishes that—be avoided), or to *panic* (where in the face of the harmful object, one is moved to do something, just anything), in *terror*, one does nothing: one is frozen.<sup>25</sup> Later on, in the narration of his example, Sartre asserts that "the window and the distance are seized simultaneously in

<sup>21</sup> Sartre (1939): 43.

<sup>22</sup> Sartre (1939): 55.

<sup>23</sup> LeDoux (1984); Damasio (1999); Pape (2011)

<sup>24</sup> For the long answer see Hatzimoysis (2010); (2011) ch. 4, and for its bearing upon some scholarly issues of Sartrean interpretation, Hatzimoysis (2014).

<sup>25</sup> Roberts (2003): 199–201 offers an illuminating discussion of those issues, and clearly marks the salient conceptual differences. The Sartrean approach would not accept the inference (indicated, though not explicitly drawn by Roberts' text) that in terror one is frozen because one "just doesn't know what to do": for me, the phenomenon of inaction when in terror, is part of the explanandum not of the explanans.



the act of consciousness which catches sight of the face at the window: but in the very act of catching sight of it, window and distance are emptied of their necessary character as tools. They are grasped in another way.”<sup>26</sup> That way is explicated by invoking the main line of reasoning we reconstructed earlier, concerning the transformation of the instrumental into the emotional world.<sup>27</sup>

If freezing is the opening scene of the emotional episode, tonic immobility marks the climactic moment before the final curtain. While the opening moment of fear is characterized by bradycardia, reduced body sway, and attentive immobility, its most appalling peak in tonic immobility is marked by tachycardia, extreme constriction of amplitude in body sway, and reduced heart rate variability.

In between freeze and tonic immobility there might have been other options—such as crouching, fleeing, threatening, fighting—but the escapes routes are now closed, the options have run out. How does consciousness respond to the inescapable? By extreme motor inhibition and unresponsiveness to stimuli, the scientific studies assert, noting how consciousness switches into a variety of dissociating modes that are consistently correlated with hypnotizability.<sup>28</sup> Consciousness, in other words, is as if it is mobilizing the whole of one’s body, in an attempt to switch itself off: “No conduct could seem worse adapted to the danger than this, which leaves me defenseless,” Sartre remarks. “And nevertheless it is a behavior of escape.”<sup>29</sup>

I suggest that tonic immobility in the face of extreme danger, is neither some freak physiological occurrence, nor some deliberate trick played by a prey to fool its predator; it is a refuge.

To be sure, annihilating the presence of the assailant by annihilating one’s awareness of that assailant, leaves the assault untouched. Such are the limits of the emotional response; indeed, such are the limitations of my ‘magical’ power over the world: “I can suppress it as an object of consciousness, but only by suppressing consciousness itself.”<sup>30</sup>

First-person reports of survivors of extreme incidents involving tonic immobility, indicate another major limitation of emotional response: even while immobile, the agent of harm is not hidden from the victim’s consciousness: trying as it may to switch itself off (by going into a ‘dreaming mode’, or other tropes of disassociation) consciousness cannot switch off the world. Consciousness, in other words, is constantly already out there, in the world; it is non-positionally conscious of itself being positionally conscious of the unfolding horror<sup>31</sup>: that is what makes fear-involved human tonic immobility a traumatic *experience*.

Post-traumatic stress disorder sufferers bear testament to this dimension of tonic immobility, as a response to extreme harm, independently of the type of source from which harm was effected. Whether it concerns a sexual or physical attack, a natural

<sup>26</sup> Sartre (1939): 57, 59.

<sup>27</sup> Sartre (1939) 59. “For the horrible is not possible in the deterministic world of tools. The horrible can appear only in a world which is such that all the things existing in it are magical by nature, and the only defenses against them are magical.”

<sup>28</sup> Rocha-Rego et al. (2009); Volchan et al. (2011).

<sup>29</sup> Sartre (1939): 59.

<sup>30</sup> Sartre (1939): 59.

<sup>31</sup> For the significance of the distinction between positional and non-positional consciousness see Zahavi (2008) and for a critique of some common misinterpretations of non-positional consciousness, see Hatzimoysis (2011) ch. 3.



disaster, a man-made accident consciousness purports to take refuge from the horrible world, while being overwhelmed by it.<sup>32</sup>

It should be noted, once more, that none of these happens in cool head, as calculated steps for the realization of a prudential course of action. Emotion is neither the deliberate employment of means to an end, nor a play that fakes inaction so as to secure particular benefits: in genuine emotion, one's consciousness is not reflective, but directed towards the world, and lives the significance of the situation with the whole of one's body.<sup>33</sup>

## 6

Human tonic immobility poses some intriguing questions about the physiology and the phenomenology of emotion. We focused on recent findings of scientific research into fear-involved tonic immobility, with a view to acquire a better understanding of the phenomenon of passive fear. To be sure, that phenomenon is too complex to be exhaustively explained in the space of an article. I argued that the standard accounts of the phenomenon, which treat fear-involved tonic immobility as a duplication of an escape trick encountered in other animal species, cannot illuminate the data presented in current research on human fear. I accordingly tried to articulate an alternative account, which draws on Sartre's phenomenological theory of emotion.

The proposed account approaches fear as a response, it treats that response as meaningful, and it locates the meaning in the function of that response for a human being in a harmful situation, without losing from its purview neither the being, nor the situation. Most importantly, I think, it helps us make sense of some extreme phenomena, such as fear-involved tonic immobility, by bringing to the fore their conscious character—their nature as, first and foremost, an emotional experience.

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<sup>32</sup> Fiszman et al. (2008); Abrams et al. (2009); Rocha-Rego et al. (2009); Lima et al. (2010); Volchan et al. (2011). It is worth noting, in this connection, that formal characterisations of PTSD (most recently in DSM-V, May 2013) include a number of symptoms which, in a temporally limited span, occur during tonic immobility episodes, such as numbing, various types of dissociation, and decreased capacity (down to complete inability) to engage with other agents. It is hard to speculate about the common aetiology of the two phenomena before their neurological profile becomes clearer. However, the symptomatology of PTSD and the manifestations of fear-involved tonic immobility overlap to such an extent that it becomes all the more evident, from my standpoint, that they serve a common emotional purpose - what I have called "refuge" (*I am grateful to an anonymous referee for inquiring about this issue*).

<sup>33</sup> "... the physiological phenomena represent the genuineness of the emotion." Sartre (1939): 50; cf. (1943): 353-355.

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