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Agency in a Deterministic World

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Abstract: In *Determined: A Science of Life Without Free Will*, Sapolsky argues that determinism and free will are incompatible, emphasizing that our actions are shaped by genetics, brain chemistry, and environment, not conscious choice. This view challenges traditional ideas of moral responsibility, suggesting that people should not be blamed for actions they couldn't control due to biological and social influences. Despite this, I argue that Sapolsky overlooks a potential space for agency within a deterministic framework. He examines conditioned learning and I believe this opens the door for both individual and collective agency. If behavior can be influenced by external forces, there may be room for us to shape our actions and society through environmental interventions.

Keywords: *determinism, agency, conditioned learning, environment*.

Resumen: En *Determined: A Science of Life Without Free Will*, Sapolsky defiende que el determinismo y el libre albedrío son incompatibles, y enfatiza que nuestras acciones están determinadas por la genética, la química cerebral y el entorno, no por decisiones conscientes. Esta perspectiva desafía ideas tradicionales de responsabilidad moral, al sugerir que no se debe culpar a las personas por acciones que no pueden controlar debido a influencias biológicas y sociales. A pesar de esto, considero que Sapolsky pasa por alto un posible espacio para la agencia dentro de un marco determinista. En particular, Sapolsky analiza el aprendizaje condicionado, y creo que esto abre un espacio tanto para la agencia individual como colectiva. Si el comportamiento puede ser influido por fuerzas externas, entonces podría haber margen para que moldeemos nuestras acciones individuales y sociales mediante intervenciones ambientales.

Palabras clave: *determinismo, agencia, aprendizaje condicionado, ambiente*.

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In *Determined: A Science of Life without Free Will*, Sapolsky advocates for a form of hard incompatibilism, asserting that determinism and free will are inherently incompatible. He explores how individuals and society can adapt to this understanding, proposing potential reforms to current justice system models. While the recognition that human actions are determined may be disheartening for those who believe in personal autonomy, Sapolsky argues that embracing our mechanistic nature and giving up the belief in free will can be emancipatory. This shift, he suggests, could promote a more empathetic and just society by reducing blame and fostering a deeper understanding of human behavior.

A central argument in Sapolsky's book is that humans, like all living beings, are fundamentally biological machines. Despite our complex phenomenology, we do not choose our actions or behavior. Rather, our actions are shaped by circumstances through highly evolved biological pathways. We are entirely mechanistic biological beings, with our decisions and behaviors emerging from the intricate interplay of genetics, brain chemistry, early childhood experiences, cultural influences, and social environments. Sapolsky suggests that conscious decisions are merely "the final three minutes of a movie" (Sapolsky 2023, p. 47), emphasizing that what we perceive as intentional actions are, in fact, determined by preceding causes. Consequently, Sapolsky argues that "terrible people are produced by terrible circumstances" (Ibid. p. 741), and as such, there should be no place for merit or blame in our social practices. Human behavior, he insists, is not freely chosen but is determined by a combination of internal and external factors. This argument is supported by a thorough review of research in neuroscience and evolutionary biology, including Sapolsky's own work.

For instance, consider aggressive behavior. From a biological standpoint, actions that are often deemed unjustified or blameworthy can be explained through the functioning of the prefrontal cortex, amygdala, and hormones such as testosterone and cortisol. What is typically labeled as intentional aggression is not under conscious control; rather, it results from the complex interplay of genetic predispositions, brain structure and development, and external influences like stress or social environment. In light of this, Sapolsky argues that following an aggressive act, we should not hold the individual morally responsible in the traditional sense. Given that their behavior was determined by factors beyond their control, they could not have acted differently, and thus, they are not morally accountable for their actions.

As someone who has spent considerable time working in skill acquisition and execution, I could challenge Sapolsky's view by arguing that he underestimates the role of consciousness in action. He might counter by suggesting that I, along with many of my philosophical peers, overstate its influence and overlook recent advancements in neuroscience. However, I will not pursue this line of argument here. As a philosopher, I value being challenged in my beliefs, and for the purposes of this commentary, I am willing to accept that Sapolsky may be correct: there is no free will.

When considering how to transform our understanding of human action upon accepting that we are purely mechanistic and predetermined beings, Sapolsky argues that we are already equipped to undertake this challenge, as we have faced similar shifts in thinking in the past (Ibid. pp. 626-713). For instance, in earlier conceptions, epilepsy was often viewed as a moral flaw or even demonic possession, and individuals experiencing an epileptic seizure were held responsible for any actions that occurred during the episode, such as causing a deadly car accident. However, we now recognize

epilepsy as a medical condition over which individuals have no control, and as a result, they are not held morally responsible for actions taken during a seizure.

What about a person with epilepsy who doesn't take their medication and drives despite being advised against it by doctors? If they cause a fatal accident, how should we respond? Sapolsky examines real cases where such tragic outcomes have occurred, and once again challenges traditional notions of moral responsibility. Even in these cases, the individual's decision to engage in such behavior was not fully within their control. Therefore, we should not assign blame. The broader implication, according to Sapolsky, is that this reasoning should extend to all human actions: behavior is determined by our biological predispositions and how we are conditioned to respond to our environment. Our current mental and physical states, including the choices we make, are beyond individual control.

It seems that our identities and actions are already determined. However, does this determinism imply that we are condemned to our circumstances? Setting aside metaphysical debates about the existence of free will, I am interested in exploring what, if any, space remains for agency—the capacity to act and potentially transform our situations and circumstances, both individually and collectively. My question is: Does Sapolsky's deterministic framework allow for any room for human agency? Is there truly nothing we can do to improve or change our actions? The suggestion that there is no such space troubles me. According to Sapolsky, this may indicate that I am "one of the lucky ones" (Ibid. p. 824), and that my belief in agency is an illusion. Even so, I want to challenge Sapolsky on this point, as I believe I have identified a potential opening in his argument through which agency might find its way in. Let us explore this further.

Sapolsky explores how evolution, culture, and social structures shape behavioral changes over time, highlighting how changes in our biology or environment can alter behavior. His argument suggests that, much like Pavlovian conditioning, behavior can be molded through environmental manipulations that alter biologically evolved pathways. The mechanisms behind these changes involve the formation of neural circuits through associative learning, which subsequently lead to adaptive changes in behavior in response to experience. These changes can also result in epigenetic modifications in the brain. Importantly, this process occurs entirely without the need to invoke the concept of individual choice. According to Sapolsky, we become who we are, and we act the way we do, due to these specific adaptive changes.

To illustrate his point, Sapolsky presents an example of conditioned learning involving the word "rapist." Unlike immediate physical threats, such as encountering a large predator, we are not biologically predisposed to activate our amygdala in response to this word. Instead, the amygdala comes to react to the word through repeated exposure and its association with its meaning and implications. Over time, this conditioning leads the amygdala to respond to the word as it would to a direct physical threat, similar to how it would react to a shock.

Here is the key point. Later in the text, Sapolsky explores how powerful groups, such as billionaires and politicians, can exploit these mechanisms to condition voters by associating certain words with specific social groups, thereby advancing their political or economic agendas. Humans influence each other's behavior both through direct interventions (e.g., political campaigns, advertisements) and environmental design

(e.g., educational or social structures). This observation suggests that, even within a seemingly rigid deterministic system, there may still be an opening for agency—where we are not merely mechanistic beings, but rather mechanistic beings capable of manipulating our environments, which in turn allows us to influence others and also shape ourselves.

Let me clarify. My point is that Sapolsky's recognition that associations and conditioned learning can be deliberately shaped by powerful social groups opens up a space for agency that should not be overlooked. The critical issue here is not that these groups could not have acted differently, given their genetic predispositions and upbringing (something we are compelled to accept, despite some of its unsettling implications). Rather, the focus is on the potential for intentional collective efforts to shape behavior. As Sapolsky emphasizes earlier in the text (especially in Chapter 4), our social behaviors are the result of the interaction between biology and environment, much like our physical traits such as height. This includes our intentions. However, once we recognize the significant impact that the social environment has on our cognitive and emotional regulation, the question arises: can we, in virtue of interacting with and/or modifying this environment, transform or alter our conditioning?

To clarify, if our minds are shaped by the circumstances around us, and if other individuals can influence those circumstances to elicit specific behaviors, then there may be some room for shaping behavior. In other words, even within Sapolsky's framework, it seems that we are not entirely passive recipients of biological determinism. Rather, at least some of us have the capacity to actively influence and shape the behavior of others. And I believe this has important implications for the shaping of individual behavior as well.

Consider the classic case of Odysseus resisting the Sirens' songs. Aware of his inability to resist on his own, he ties himself to the mast of his ship to prevent himself from jumping into the sea. Philosopher Tillman Vierkant (2015, 2024) suggests that this might exemplify how free will operates—not as an intrinsic mental capacity, but as a form of "mental tinkering" or "managerial control" via environmental manipulation. In terms of human agency, this story is significant because it demonstrates how external interventions can help individuals overcome their biological predispositions. By tying himself to the mast, Odysseus is not only resisting his immediate impulse but perhaps also conditioning himself to respond differently to the same event in the future. Similarly, environmental interventions can be applied in contexts such as therapy or medical diagnosis, where individuals learn to recognize and potentially relearn conditioned behaviors through changes in their surroundings. For example, such environmental manipulations have been shown to assist individuals with Alzheimer's disease, where cognitive impairments are mitigated through tailored interventions in home environments (Soilemezi et al., 2019).

The issue is that, although we may not have direct control over our determined behaviors, it appears we can still indirectly influence or even retrain them, potentially fostering new habits and automatic responses. Of course, this is subject to certain limits and constraints, which may vary based on individual differences. This space for both collective and individual agency, however, seems to be downplayed in Sapolsky's argument. The potential for change should not be overlooked simply because our thoughts, behaviors, and choices are heavily shaped by biological, neurological, and environmental factors beyond our control. If, as Sapolsky argues, we are biological

machines, we are not merely automatons. Instead, we are machines capable of altering ourselves and others by manipulating and intervening in our shared environments.

It is important to note that this capacity for self and collective influence may not be inherently automatic. For instance, educational systems can promote critical thinking and other practices that empower individuals to better understand and influence their behavioral responses. Similarly, healthcare systems can offer access to mental health resources and therapies that help individuals address maladaptive conditioning to the extent possible. As Sapolsky acknowledges in the context of social justice, it is crucial to address "root causes" (Sapolsky 2023, p. 736), which suggests that we can collectively work to create environments where healthy development is not disproportionately influenced by one's location. In this regard, there appears to be room for agency in a deterministic world—at the very least, no less than there is for political manipulation and marketing."

This raises important moral questions. For instance, if we accept Sapolsky's dialectic and assume there is no free will, then in situations where privileged social groups oppress others or governments commit atrocities like genocide, we might reason, "These individuals could not have acted otherwise, given their biology, upbringing, and cultural inheritance." However, even if this is true, the critical issue becomes: What social environments could have prevented these outcomes? How can we break cycles of inherited violence? How can we foster nurturing developmental environments or address the unjust distribution of resources? These questions only make sense if we believe there is at least some room for agency, even if that agency is constrained, within a deterministic (but not condemned) world. And it seems that this space for agency directly depends on our capacity for social learning and behavioral conditioning.

In summary, I have argued that, even within a deterministic framework, humans retain a certain capacity—albeit dispositionally—to influence their own behavior and that of others through environmental manipulation. This form of indirect agency allows for both collective transformation and individual change, for example within systems such as education and therapy. Sapolsky might argue that I am succumbing to an illusion of agency, a position that may have pragmatic merit. However, I contend that by emphasizing the self-deceptive nature of our belief in free will, Sapolsky may be downplaying our role as active culture-makers and as agents capable of shaping and modifying their environment. In doing so, we can not only shape ourselves and those around us but also influence future generations. Now, let's see whether Sapolsky finds any sense in these thoughts, even though, as he asserts, ultimately "there is no meaning" (Ibid. p. 809).

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