

علم الأعصاب وحرية الإرادة: دروس قانونية وتربوية

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Neuroscience, and Free Will: Legal and Educational Lessons

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المخلص:

التطورات الأخيرة في العلوم مثل علم الأعصاب تثير تساؤلات حول التجربة الاجتماعية. تهتم هذه الورقة بالعواقب المتعلقة بمجال النظام القانوني والنظام التربوي. ولهذا الغرض، ناقش في هذه الورقة ورقة جوشوا جرين وجوناثان كوهين لعام ٢٠٠٤ بعنوان "من أجل القانون، علم الأعصاب لا يغير شيئاً وكل شيء". وبعد عرض حججهم، أقيمت بعض الشكوك على بعض مقدماتها الأساسية، ثم أثير اعتراضين. أولاً، أوضح أن افتراضاتهم حول فهم الناس للإرادة الحرة مضللة. ثانياً، أزعج أن حججهم تفشل في إدراك الفرق بين صياغة القانون بناءً على الحسابات العقائدية وتطبيق القانون في حالات معينة. هذا الفشل يجعلهم يدافعون عن حساب يسمح بمعاقبة الأبرياء. وأختتم الورقة بدروس متعلقة بالسياق التربوي.

Abstract:

Recent developments in the sciences such as neuroscience raise questions about the social experience. This paper is concerned with the consequences related to the realm of the legal system and the educational system. To this purpose, in this paper I discuss Joshua Green and Jonathan Cohen's 2004 paper "For the Law, Neuroscience Changes



Nothing and Everything”. After presenting their argument, I cast some doubts on some of its main premises then, I raise two objections. First, I show that their assumptions about folks’ understanding of free will are misleading. Second, I argue that their argument fails to recognize the difference between constituting the law on consequentialist calculations and applying the law in particular cases. This failure causes them to advocate an account that allows punishing innocent people. I conclude with educational lessons. Green and Cohen’s argument fails to ground the effect they claim neuroscience will have on the law. It seems that their assumptions about folks’ intuitions about free will are misleading. They raised the bar too high for free will which makes it incompatible with any kind of causality. That presentation does not reflect what people think about free will according to the data we get from recent studies. Also, their argument fails to recognize the difference between constituting the law on consequentialist calculations and applying the law in particular cases. This failure causes them to advocate an account that allows punishing innocent people. Educational lessons include a discussion of what we real mean by education: a system of interactions where causality determines the results, or a field of interactions open to different, new, and surprising future.

Introduction:

Recent developments in neuroscience open several discussions in the realm of social interactions. For example, Caruso (2021) discusses the consequences related to criminal justice, and Jones, Schall,&Shen (2022) open several issues related to neuroscience and the law. In terms of neuroscience and educational sciences, Fleur, Bredeweg& van den Bos (2021) argue that

Metacognition comprises both the ability to be aware of one’s cognitive processes (metacognitive knowledge) and to regulate them (metacognitive control). Research in educational sciences has amassed a large body of evidence on the importance of metacognition in learning and academic achievement. More recently, metacognition has been studied from experimental and cognitive neuroscience perspectives. (P. 1) Moreover, researchers acknowledge the development of the field of study joining neuroscience and education. Antonopoulou, Halkiopoulos, &Gkintoni, (2023) studied specific relationships such as educational neuroscience and its contribution to math Learning. Furthermore, Wilcox, Morett, Hawes, &Dommett, (2021) discuss the field of educational neurosciences and the challenges it faces :

The emerging discipline of educational neuroscience stands at a crossroads between those who see great promise in integrating





neuroscience and education and those who see the disciplinary divide as insurmountable. However, such tension is at least partly due to the hitherto predominance of philosophy and theory over the establishment of concrete mechanisms and agents of change. If educational neuroscience is to move forward and emerge as a distinct discipline in its own right, the traditional boundaries and methods must be bridged, and an infrastructure must be in place that allows for collaborative and productive exchange. P. 1

One specific question that connects neuroscience, law, and education is the question of free will what neuroscience has to say about it, and what that means for both law and education. To contribute to this question, I engage with a specific argument on neuroscience and the law and then I draw educational lessons.

Neuroscience and law:

and In their 2004 paper “For the Law, Neuroscience Changes Nothing and Everything”, Joshua Green and Jonathan Cohen argue that despite the fact the existing legal doctrine can accommodate whatever neuroscience will tell us, neuroscience will probably have a transformative effect on the law. That is, neuroscience will transform people’s intuitions about free will and responsibility. And since Green and Cohen hold that the existing legal principles make no assumptions about the neural bases of criminal behavior, that transformation can be accommodated within the existing legal framework. Their argument could be organized like this:

- I. There are three standard responses to the problem of free will.
 - a. Hard determinism. (Determinism is T and free will is F).
 - b. Libertarianism. (Determinism is F and free will is T).
 - c. Compatibilism. (Both determinism and free will are T).
- II. There are two theories of punishment: Consequentialism and retributivism.
 - a. Consequentialism is a forward-looking theory according to which punishment is justified by its future beneficial effects and does not require believing in free will.
 - b. Retributivism is a backward-looking theory according to which punishment is justified by giving people what they deserve based on their past actions and does require believing in free will.
- III. The existing legal system is largely retributivist.
- IV. Most people hold the common-sense conception of free will.
- V. Neuroscience shows that free will is false.
- VI. According to V, people will change their conception of free will.
- VII. Since retributivism requires free will and since free will is false people will give up retributivism.

VIII. Since consequentialism is compatible with neuroscience, people will find it appealing and will change the law accordingly.

First: Discussion of some of the main premises:

I. Three standard responses to the problem of free will: Only determinism is true.

Green and Cohen rule out libertarianism on the ground that there is no available scientific evidence to support its claim. After all, the probability that modern physics shows cannot be any help since it has no space for rational choices. Moreover, they argue that it is highly unlikely that neuroscience will show some mysterious events that operate independently of the ordinary laws of physics in the brain. Thus, they conclude that “any scientifically respectable discussion of free will requires the rejection of what Strawson (1962) famously called the ‘panicky metaphysics’ of libertarianism” (p. 1777). The first argument seems too fast. It seems that Green and Cohen take probability to mean complete randomness. That is, if modern physics shows us the law is probable, then it is completely random. On the other hand, a libertarian might say probability means that there are limited options, and it is undetermined, yet which one will happen. If luck or chance has a role within these limited choices, then free will could. So, if modern physics casts some doubts on determinism, then a libertarian would say that gives space for free will. That is, if according to modern physics, determinism is false, then we can (1) rule out determinism and (2) base free will on other grounds such as common sense or direct experiences of choosing and making decisions. After all, modern physics makes it open and probable that, sometimes some of us can choose freely. I am not arguing that is a sufficient argument in favor of libertarianism. Rather, I am saying that Green and Cohen’s argument against libertarianism is insufficient.

What about compatibilism? Green and Cohen think that they do not need to argue to rule it out since it is irrelevant. That is, their goal is to change the intuitions people hold, which are in reality libertarian not compatibilist. They argue that “the current doctrine, although officially compatibilist, is ultimately grounded in intuitions that are incompatibilists and, more specifically, libertarian” (p. 1776). Moreover, they argue that “retributivism, despite its unstable marriage to compatibilist philosophy in the letter of the law, ultimately depends on an intuitive, libertarian notion of free will that is undermined by science” (p. 1776). After all, the compatibilist principles of criminal law are compatible with the consequentialist approach they advocate. What they need to do is render the marriage between these principles and libertarian moral intuitions.



Finally, Green and Cohen provide a predictive argument for compatibilist philosophers. They write, “The remaining majority, the compatibilists, try to talk themselves into a compromise. But the compromise is fragile. When the physical details of human action are made vivid, folk psychology loses its grip, just as folk physics loses its grip when the morally significant details are emphasized” (p. 1783). It seems that they think that what compatibilists hold is a libertarian concept of free will and try to reconcile it with determinism. So, since science will show that belief is no more than an illusion, hard determinism wins.

In this paper, hard determinism is given. Green and Cohen show no need to argue for it more than predicting its upcoming domination.

II. Consequentialism vs. Retributivism:

In this section, Green and Cohen argue that there are two standard justifications for legal punishment: a forward-looking consequentialism and a backward-looking retributivism. The former holds that punishment is merely an instrument for promoting future social welfare, and the latter holds that the principal aim of punishment is to give people what they deserve based on their actions. They acknowledge that the retributivist perspective is widespread and argue it needs to be questioned for one main reason. That is, they believe the notion of desert assumes the possibility of free will in a deterministic world. The argument runs like this:

1. Retributivism assumes free will.
2. If determinism is true, then free will is an illusion.
3. Determinism is true.
4. Thus, free will is false and from 1&4 retributivism is false.

Furthermore, Green and Cohen argue that the forward-looking-consequentialist approach to punishment is indifferent to the debate about free will. That is, it “works with all three responses to the problem of free will including hard determinism” (p. 1777). In contrast, retributivism requires either compatibilism or libertarianism, or both. For Green and Cohen libertarianism is scientifically suspect and thus out of consideration, which leaves retributivism with compatibilism as its only option.

Then Green and Cohen turn to discuss the claim that neuroscience will not change the law. That is, as Stephen Morse (2004) argues, “there is nothing on the neuroscience horizon that it (the law) cannot handle” (p. 1778). The main concern here is that neuroscience will undermine the concept of criminal responsibility. However, as Mores argues and Green and Cohen accept, this concern arises only when we commit what Mores calls ‘the fundamental psycho-legal error’. That is, “to believe that

causation, especially abnormal causation is per se an excusing condition” (p. 1778). Hence, they argue, that (1) the law assumes only basic rationality as a condition for moral responsibility and (2) science, including neuroscience, shows no science to undermine that assumption, then, therefore, (3) neuroscience does not undermine legal responsibility. Green and Cohen depart from Mores when they think about the legitimacy of the law itself since “it depends on its adequately reflecting the moral intuitions and commitments of society. If neuroscience can change those intuitions, then neuroscience can change the law” (p. 1778). This argument seems problematic. That is, all that it says is that neuroscience can provide new bases for the law, new intuitions the law can be built on that guarantee the commitment of the society. However, since the current law can accommodate neuroscience as Green and Cohen claim, I do not see reasons for a change caused by neuroscience. If all neuroscience can come up with does not require changing the law, any change will be caused by reasons other than neuroscience. The only change neuroscience can cause, according to Green and Cohen, is changing the basis of people’s commitment to the law not changing the law itself.

III. Mr. Puppet’s case:

Green and Cohen argue that most of the confusion we have about the expected effect of neuroscience on the law is a result of mixing what the folks care about when dealing with crimes with what the law cares about. They argue the law cares about whether the accused were sufficiently rational at the time of the misdeed in question. On the other hand, people want to know if it was really him. To make this distinction clearer they introduce the thought experiment of Mr Puppet. He was created by scientists and was engaged in a murder during a drug deal. In the court, the defense calls the scientist who was the leader of the group that created Mr. Puppet to explain his relationship to Mr. Puppet. The scientist says:

It is very simple, really. I designed him. I carefully selected every gene in his body and carefully scripted every significant event in his life so that he would become precisely what he is today. I selected his mother knowing that she would let him cry for hours and hours before picking him up. I carefully selected each of his relatives, teachers, friends, enemies, etc., and told them exactly what to say to him and how to treat him. Things generally went as planned, but not always. For example, the angry letters written to his dead father were not supposed to appear until he was fourteen, but by the end of his thirteenth year, he had already written four of them. In retrospect, I think this was because of a handful of substitutions I made to his eighth chromosome. At any rate, my plans



for him succeeded, as they have for 95% of the people I've designed. I assure you that the accused deserves none of the credit. (p. 1780).

This case is supposed to show a difference between people's intuitions and the law. People, Green and Cohen argue, think Mr Puppet "cannot be held fully responsible for his crimes" (p. 1780). Forces beyond his control caused him to do what he did. On the other hand, Green and Cohen argue, that the law will see him fully responsible since "for all we know, he is physiologically indistinguishable from the prototypical guilty criminal" (p. 1780). I question Green and Cohen's argument. That is, the argument shows only a difference in degree not in kind. That is, both people and the law see Mr Puppet as responsible, fully in the law's eyes and partly in people's eyes. I question even this relative difference. That is, people can see Mr. Puppet fully responsible. That is, if we replace the scientists with God who created Mr Puppet and arranged his life, religious people, at least, will hold him accountable even though his life was arranged by an external force. People will say that Mr Puppet could have done otherwise. I believe what people's intuition cares about is whether Mr Puppet could have done otherwise. If he could, then he should be held accountable. In the scientists' case, this possibility is not ruled out. The arrangement that the scientists or God, as most religious people believe, is still compatible with Mr Puppet having free will.

IV. The new intuitions:

Green and Cohen argue that most of the confusion we have about moral responsibilities and the way to punish misdeeds is a result of our lack of adequate information about the brain. For a long time, the brain has been a black box that allows people to guess all sorts of ideas about how it works. This lack of knowledge corrupts our intuitions and neuroscience has a promising solution. Neuroscience will turn the black box of the mind into a transparent bottleneck. Neuroscience will show us the cause-and-effect relationships between individual neurons. According to the new knowledge, Green and Cohen argue, jurors in the future will stop asking these questions: was it really him? Could he have done otherwise? Does he deserve to be punished? In short, "the idea of distinguishing the truly, deeply guilty from those who are merely victims of neuronal circumstances will, we submit, seem pointless" (p. 1781).

Two worries here. First, according to Green and Cohen's claim here, neuroscience will change the law itself not just its bases. That is, the current law distinguishes between deliberate murdering and accidental killing and according to Green and Cohen, such a distinction will be pointless in the eyes of the new law. Second, the kind of law that does not care about people's intentions and does not distinguish between



accidental killing and deliberate murder does not seem to be a humane law. Green and Cohen end their conclusion by saying the law they foresee will treat people humanely.

Second: Objections:

A. Are folks really libertarians?

A key concept in Green and Cohen's argument is that one of the main differences between how folks see punishment and how the law sees it is that the law requires only the agent to be rational, whereas folks require free will. They write:

according to the law, the central question in a case of putative diminished responsibility is whether the accused was sufficiently rational at the time of the misdeed in question. We believe, however, that this is not what most people care about, and that for them diminished rationality is just a presumed correlate of something deeper. It seems that what many people really want to know is: was it really him? (p. 1778).

Here I question the claim that there is a difference between what people care about and what the law cares about. I argue that the expression 'sufficiently rational' is equal to the expression 'was it really him?' Here I try to challenge Green and Cohen's claim that we can have an account of rationality without assuming some kind of free will. Rational deliberation is a sign of free will for many philosophers. Rationality shows a set of actions selected to fulfill some wants and desires. David Hume, for example, defines liberty as "a power of acting or of not acting, according to the determination of the will." (2000, p. 81). For the law and for folks too it is important to identify a certain kind of relationship between the accused and the action under investigation. This relation assumes the accused should have some kind of control over his actions while committing the action. For example, neither the law nor the folks would accuse a person of damaging another person's car if he was driven by a hurricane. That is, both believe that the person had no control over her actions.

It seems that Green and Cohen rely heavily when accusing folks thinking in this issue on what Stephen Morse (2004) calls 'the fundamental psychology error'. That is, "to believe that causation, especially abnormal causation, is per se an excusing condition" (p. 1778). I do not think this accusation catches folks' thinking. That is, folks distinguish between coercion and causality. A person is coerced and hence excused if she could have not done otherwise. On the other hand, causation does not rule out the possibility of doing otherwise. That is, people know that one's upbringing and education play a big causal role in their actions, however, they do not conclude that that is a complete excuse for their actions.





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Let us think of three scenarios about a murder case that might help us understand the issue at hand. In scenario one, the prosecutor presents the case like this: A is an uncaused causer; he committed the crime under no influence of any other factors in his life. If he had been born in different circumstances, he would have committed the same crime and thus, is morally responsible and should be punished. In scenario two, the prosecutor presents the case like this: A was influenced by his context for sure, however, he could have done otherwise and hence is morally responsible. After all, the prosecutor continues, many of his peers who live in similar conditions do not kill people. In scenario three, the prosecutor presents the case as if A were moved by deterministic laws of the world, and he has no say in controlling his actions, hence he should be punished let's say for utilitarian reasons. Green and Cohen argue that folks would find scenario one more compelling because they are libertarian and link responsibility with acting outside any casual chain. This does not seem right for two reasons. First, A in scenario one does not seem rational. After all his actions cannot be traced back to fulfill any wants or desires. Second, it seems that scenario one does not match the language people use to describe events. Hence Green and Cohen make empirical claims about folks' understanding of free will so we should see if empirical studies support their claims. It seems not. Studies on folks' intuitions, for example, Nahmias, Eddy, et al (2005, 2007) show that folks' intuitions do not require incompatibilism. In their 2005 study "Surveying Freedom: Folk Intuitions about Free Will and Moral Responsibility," participants were presented with two deterministic scenarios:

Scenario: Imagine that in the next century, we discover all the laws of nature, and we build a supercomputer which that can deduce from these laws of nature and from the current state of everything in the world exactly what will be happening in the world at any future time. It can look at everything about the way the world is and predict everything about how it will be with 100% accuracy. Suppose that such a supercomputer existed, and it looks looked at the state of the universe at a certain time on March 25, 2150 AD, 20 years before Jeremy Hall was born. The computer then deduces from this information and the laws of nature that Jeremy will definitely rob Fidelity Bank at 6:00 pm on January 26, 2195. As always, the supercomputer's prediction is correct; Jeremy robs Fidelity Bank at 6:00 pm on January 26, 2195. (p. 566).

76% of participants judged that Jeremy robs the bank of his own free will. The researchers realized that the previous case might fail to show the deterministic nature of the scenario. The participants may focus on the

predictability of Jeremy's actions rather than on the fact that the prediction was made based on deterministic laws. So, they thought they needed to develop a scenario where the agents' behavior is sufficiently caused by factors beyond their control. So, they develop the following scenario:

Scenario 2. Imagine there is a world where the beliefs and values of every person are caused completely by the combination of one's genes and one's environment. For instance, one day in this world, two identical twins, named Fred and Barney, are born to a mother who puts them up for adoption. Fred is adopted by the Jerksens and Barney is adopted by the Kindersens. In Fred's case, his genes and his upbringing by the selfish Jerkson family have caused him to value money above all else and to believe it is OK to acquire money however you can. In Barney's case, his (identical) genes and his upbringing by the kindly Kinderson family have caused him to value honesty above all else and to believe one should always respect others' property. Both Fred and Barney are intelligent individuals who are capable of deliberating about what they do.

One day Fred and Barney each happen to find a wallet containing \$1000 and the identification of the owner (neither man knows the owner). Each man is sure there is nobody else around. After deliberation, Fred Jerkson, because of his beliefs and values, keeps the money. After deliberation, Barney Kinderson, because of his beliefs and values, returns the wallet to its owner. Given that, in this world, one's genes and environment completely cause one's beliefs and values, it is true that if Fred had been adopted by the Kindersens, he would have had the beliefs and values that would have caused him to return the wallet; and if Barney had been adopted by the Jerksens, he would have had the beliefs and values that would have caused him to keep the wallet. (p. 570).

76% of the participants judged that both Fred and Barney kept the wallet of his own free will and Barney returned it of his own free will. This case should be similar to the cases Cohen and Green care about, and it should not support their claim that folks' intuitions are libertarian.

Another worry is Cohen and Green's assumption that folks hold a radical form of causation. That is an uncaused cause. Andrew Monroe and Bertram Malle (2010) study this assumption by asking people to define their concepts of free will and then by confronting them with a neuroscientific claim that free will is an illusion. They conclude that first, people define free will as making a choice, following one's desires, or being free from constraints. Second, "there is no indication of choice being seen as an 'uncaused' cause or some magical, indeterministic process. Instead, people's folk concept easily accommodates many casual



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factors that can influence and act as inputs to choice such as personality, social forces, capacity limitations, or uncontrolled neural impulses” (p. 219).

To sum up, data show no support for Green and Cohen’s claim that folks are in fact libertarians.

Second objection:

B. Can consequentialism, without any reliance on any meaning of free will, constitute the law?

The consequentialist approach Green and Cohen advocate fails to prevent punishing innocent people for reasons such as the good of society. To wit, consequentialism leaves the question of whom to punish open to utilitarian calculations. Let us think of this example. In Tallahassee murders become common, and the police fail to catch the criminals. It would be possible within consequentialism to hang another person, let’s say who committed another murder, for this crime since that will calm down the city and make people feel safe, which will help the police to capture the real criminal.

Green and Cohen might argue that such worry is not real. That is, people realize that such an event will not generate good or happiness since it requires a kind of systematic deception that will lead inevitably to corruption in the legal system. However, this reply does not rule out the possibility that people in the legal system could see such exercise as beneficial at least for a short period of time. After all, the person who will be hanged did commit a murder. True he did not commit the exact murders under investigation but he will be hanged anyway for the murder he did do. Green and Cohen agree that this kind of criticism points out that “consequentialist theories fail to capture something central to common-sense intuitions about legitimate punishment” (p. 1776). Moreover, they argue that such common-sense could be changed by the advancement of neuroscience. The common-sense they talk about here, I take it, is the link between legal responsibility and free will. Without such a link, I argue, the law cannot be practiced. That is, Green and Cohen, fail to recognize what John Rawls calls the “difference between the justification of the general system of rules which constitutes penal institutions and the justification of particular application of these rules to particular cases by the various officials whose job it is to administer them” (p. 11). They mix the role of the legislators with the role of judges and juries. Consequentialism might be enough for the legislators who care about the benefits of the laws, but it is not adequate for those who apply these laws. Consequentialism alone can answer this question: Why do people put other people in jail? By saying it is for the good of the



community. However, it cannot alone answer the following question: Why was X put in jail yesterday? The latter question deals with why X, is not Y, and assumes we need to draw a distinct relationship between X and the crime. This relationship, I argue does not make sense without dealing with X as someone who did an intentional and rational action.

In short, it seems that consequentialism without any reliance on free will is not enough to constitute the law.

Lessons for education:

Current education systems are not immune from the effects of recent developments in the sciences. Neuroscience is leading the modern investigations into major issues such as consciousness and free will. If we accept the main premise above that neuroscience shows that humans do not have free will, can we say that education will accommodate that without leading to an existential crisis? And what difference can we see between the law and education in terms of dealing with neuroscience's claims? Biesta (2015/ 2021) argues that we have two kinds of relationships: strong metaphysical relationships which are deterministic, and the outcomes flow necessarily from incomes, and weak existential relationships where causality does not determine what the outcomes will be. He understands relationships in education to be of the latter kind. This weak nature of the educational relationships, according to Biesta is what makes keeps education, educational. That is, current tendencies, following the market model, are working to move education into the realm of strong relationships where we can be certain that certain outcomes will follow out of certain incomes and processes.

In the same manner, we could argue that education is governed by two kinds of laws: laws of nature and laws of culture. If we consider the laws of nature, then the discussion should aim at the compatibility of free will and the laws of nature. The discussion then will be about basic facts about the physical nature of the world and the nature of human beings. However, if we consider education as it is most of the time understood as human communication such as parent-child communication or schooling then we are thinking of a phenomenon that is governed by the laws of culture which are probabilistic. Within the scope of these laws, education cannot be deterministic and hence cannot be incompatible with free will. It seems that it is up to us, society, educators, and policymakers to decide what we want education to be.

Conclusion:

Green and Cohen's argument fails to ground the effect they claim neuroscience will have on the law. It seems that their assumptions about folks' intuitions about free will are misleading. They raised the bar too





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high for free will which makes it incompatible with any kind of causality. That presentation does not reflect what people think about free will according to the data we get from recent studies. Also, their argument fails to recognize the difference between constituting the law on consequentialist calculations and applying the law in particular cases. This failure causes them to advocate an account that allows punishing innocent people. Educational lessons include a discussion of what we real mean by education: a system of interactions where causality determines the results, or a field of interactions open to different, new, and surprising future.

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