

On Biologising Racism

Raamy Majeed
University of Auckland
British Journal for the Philosophy of Science (forthcoming)

ABSTRACT: To biologise racism is to treat racism as a neurological phenomenon susceptible to biochemical intervention. In *Race on the Brain: What Implicit Bias Gets Wrong About the Struggle for Racial Injustice*, Kahn (2018) critiques cognitive psychologists and neuroscientists for framing racism in a way that tends to biologise racism, which he argues draws attention and resources away from non-individualistic solutions to racial inequality. In this paper I argue the psychological sciences can accommodate several of Kahn's criticisms by adopting a situated approach to cognition, where we take environmental features as integral to the cognitive processes that manifest racial bias.

KEYWORDS: racism; implicit bias; social cognition; situated cognition; scaffolding

1. Introduction

To biologise racism is to treat racism as a neurological phenomenon susceptible to biochemical intervention. In *Race on the Brain: What Implicit Bias Gets Wrong About the Struggle for Racial Injustice*, Kahn (2018) offers a critique of the science of implicit bias on grounds that it tends to biologise racism.¹ The problem isn't about any specific details concerning the scientific data itself. Rather, the problem concerns how scientists *frame* racism: in treating racism as a biological, cognitive and individualistic phenomenon, it neglects that historical and social factors that shape racism. Moreover, this is problematic because it can take attention and resources away from non-individualistic solutions to

¹ Kahn offers numerous examples, among which include Poussaint (2002), Eberhardt (2005), Kang (2005), Stanley, Phelps and Banaji (2006), Kubota, Banaji and Phelps (2012), Banaji and Greenwald (2013), and Sheepers, Ellemers and Derks (2013).

racism. At its most extreme form, it can result in the recommendation of a pill for racism (e.g. the beta blocker propranolol), which seeks to cure the individual of their racism.²

In making his case, Kahn sometimes overplays his hand. For example, he notes that in the “biologized framing, racism is not social, it is not historical, nor is it even interpersonal or medical in some general sense; rather, it is constructed mechanistically as being generated by the neurotransmitter norepinephrine” (pg. 219). Most scientists are well aware of the historical causes of racism, especially within the U.S context, and some do prescribe social remedies, e.g. targeting mass media policy with a focus on better representations of ethnic minorities.³ However, it would be premature to dismiss all of Kahn’s criticism on strawman charges. As a legal scholar, Kahn is well-placed to warn us of opportunity costs. In treating implicit bias as a biologised notion, the dominant trend in the fight for racial justice, at least in the U.S, has been to focus on individualistic interventions that ignore the social and structural causes of racism. Furthermore, while the problem lies not in the scientific data itself but in what to make of it, I think Kahn is also right that scientists often compound the issue in how they frame racism.

For example, in *Blind Spot: the Hidden Biases of Good People*, two of the pioneering researchers on implicit bias, Banaji and Greenwald (2013), begin by comparing implicit biases to biological phenomena, e.g. our blind spots, visual illusions, imprinting etc., and land on treating such biases as ‘mind bugs’: roughly problems to do with our categorising capacities gone awry.⁴ Once again, the problem isn’t anything specific concerning their findings. Nevertheless, the overall impression one gets from reading this book is that racism today is a fairly natural, mundane phenomenon, on a par with other social biases, e.g. biases for people’s attractiveness and job status (their examples). Worse, this is something actively encouraged by their conclusion: “*in-group favoritism* — may be the largest contributing factor to the relative disadvantages of Black Americans and other already disadvantaged

² E.g. see Terbeck et al. (2012), Douglas (2013), and Cikara and Bavel (2014). See Pustilnik (2012) and DeGrazia (2013) for a discussion.

³ Kang (2017) also makes this point in his review of *Race on the Brain*.

⁴ They borrow the term from VanLehn (1990) who uses it to refer to habits of mental arithmetic, which malfunction when applied to unintended situations.

groups” (162). This is a remarkable claim, not least because Jim Crow laws were still in effect as recently as 1965. (If you are keeping count, that’s less than two generations ago). Here I am inclined to agree with Kahn that this is a “stunning dismissal of precisely the sorts of structural and institutional factors” that shape racism (pg. 95).

Still, I think we should also be sceptical of Kahn’s conclusion, *viz.* that a science should ‘inform’ but not ‘guide’ anti-racism legislature. This is a murky distinction, which leaves unaddressed one of the most pressing questions raised by Kahn’s critique: how should we make progress in a science to tackle racism? This paper aims to answer this question. Unlike Kahn, I think cognitive psychology and neuroscience can still play a significant role in shaping law and policy. In particular, I think such sciences can accommodate several of Kahn’s key criticisms by adopting a situated approach to cognition, where we take environmental features as integral to the cognitive processes that manifest racial bias. In what follows, I provide further background concerning the problems with biologising racism (Section 2), spell out my proposal on how to ‘situate’ racism (Section 3), and end by specifying both the merits and limitations of my approach (Section 4).⁵

2. Biologising Racism

To begin, let us look more closely at both Kahn’s charge that the current science of implicit bias tends to biologise racism and philosophical responses to similar charges made earlier. It is my view that there is something important about Kahn’s critique, namely problems to do with framing, which haven’t been adequately addressed by philosophical defences of a psychological science of racism.

2.1 Framing Issues

Kahn’s main foil in *Race on the Brain* are “behavioral realists —“behavioral” because they are looking primarily at the cognitive foundations of individual attitudes and “realists” because they are grounding

⁵ Note: though Kahn’s main target is the recent science of implicit bias, his critique, I take it, also applies to any account of cognitive bias, be it implicit or explicit, which threatens to biologise racism. Subsequently, this paper focusses on problems specifically to do with biologising racism, and will leave aside other potential problems with the implicit bias literature.

their work in rigorous empirical methods and quantitative measurement” (pg. 6). Behavioural realists consist of a motley of scientists, mostly working in cognitive psychology and political neuroscience, who focus on implicit bias, typically using the implicit association test (IAT), but with an increasing emphasis on integrating tools from neuroscience, e.g. data from functional magnetic resonance imaging (fMRI) and facial electromyography (EMG). According to Kahn, it is the way behavioural realists (mis)use neuroscience which “effectively renders racism primarily a function of biological activity in the brain” (pg. 14), and thereby threatens to biologise racism.

But what exactly is it to biologise racism? And why is this problematic? The notion of biologising racism can be understood in comparison to the more familiar notion of biologising race itself. According to Kahn, while behavioural realists don’t biologise race, they biologise racism in a similar fashion, confusing a social phenomenon for a biological one. This is best seen by example. In touting the benefits of “physical measures of racial bias”, like fMRI and EMG, another leading researcher on implicit bias, Eberhardt, writes that such measures “allow researchers to physically locate the phenomena of interest, such that precise predictions can be made regarding when and where race effects will emerge” (2005: 180). For Kahn, this is a prime example of what he has in mind. As he notes:

Here is where we literally come to find “race on the brain.” The idea of “physically locating” manifestations of racism in the brain reduces racism to a decontextualized physiological condition that tends to displace or obscure understandings of it as a socially and historically situated manifestation of power relations. (Kahn 2018: 208)

Now, in a trivial sense, any given human activity can be seen as biological on grounds that it results from some physiological process, most likely involving some activity in our brains, which can be tracked using physical measures, e.g. fMRI scans. I doubt anyone in the present debate would deny this. To biologise racism, for Kahn, is something more specific: it is to treat racism as *merely* a biological phenomenon, obscuring other factors that contribute to racism. Moreover, this can be seen to be a problem because it has led to anti-racism law and policy reform that focus on bringing about

psychological changes in individuals at the expense of tackling social and institutional aspects of racism.⁶

At face value, the charge that behavioural realists biologise racism in the aforementioned sense is clearly a strawman. Scientists are fully aware that social biases like racism are, well, social. For instance, in an interview for *Washington Post*, Banaji describes the IAT as measuring the “thumbprint of the culture on our minds”.⁷ Nor do they (always) dismiss the importance of history for combating contemporary forms of racism. For instance, Eberhardt herself, granted more recently, speaks of finding ways to “free ourselves from the tight grip of history” (2020: 95), and goes on to quote the political critic Lippmann that history is the “antiseptic” that helps us “to realise more and more clearly when our ideas started, where they started, how they came to us, why we accepted them” (1922: 91).

That said, I don’t think we should dismiss Kahn out of hand. While his portrayal of behavioural realism isn’t entirely accurate, he draws our attention to something significant. His book is awash with real-life examples where diversity-management firms, the U.S Department of Justice, and the American Bar Association, have all, in one form or another, recast antiracism “as a largely private, consumer-driven endeavour” (pg. 151); one where implicit bias training is seen as a quick fix for any given racist incident, be it in the workplace or concerning law enforcement practice. But this raises an important question, namely if implicit bias researchers themselves are clear on such biases having social, historical and institutional elements, why has the uptake of this research by law and policy makers fallen so badly into the trap of treating all forms of racial bias as if they were merely a biological phenomenon?

My diagnosis is that Kahn is right that scientists working on implicit bias have a framing problem. While I don’t think they actually biologise racism, at least not in the way Kahn understands it, they do frame contemporary forms of racial bias as a biological, individual and cognitive phenomenon, which inevitably obscures the cultural and institutional structures that continue to prop-up racist attitudes and behaviour. As Kahn himself contends:

⁶ Similar worries have also been raised by Wellman (2007) and Lawrence (2008).

⁷ Quoted in Vedantam (2015).

My concerns arise primarily from the framing and presentation of many of these findings in what has tended to approach a grand-master narrative for addressing contemporary racial injustice—despite many often thoughtful and well-intentioned caveats from behavioral realists that nonetheless tend to be rather abstract and overwhelmed in practice by suggested interventions that focus almost exclusively on the individual, psychologically based dynamics of bias assessment and intervention. (Kahn 2018: 62)

So while Kahn's primary charge against behavioural realism arguably fails, the motivation for it stands. Even though behavioural realists don't literally take racism "out of history", they do naturalise racism, and in a way that tends to obscure not only its historical roots, but crucially, the ways in which the cultural and institutional effects of this history shape racist behaviour to this very day. When behavioural realists talk of "physically locating" racial bias in the brain, or describe all forms of racial bias as unfortunate consequences of our evolved propensity for "in-group favouritism", they make this framing error. What's more, whether we actually biologise racism or simply frame the issue in a way that places the emphasis on its neurobiological causes, the upshot is still very much the same: we end up with an individualistic policy, which though well intended, often hinders the fight against racism.

It is instructive to place Kahn's concerns in the context of other, similar, criticisms of psychological and scientific research on racism. A popular line of critique contends that such work often "psychologises" racism. There are a few different ways of spelling out this idea, but the general worry is that such work is too individualistic. For instance, Trawalter et al. (2020) take this to be the worry that such work focusses too much on individual biases and not enough on structural racism. In this way, the threat of biologising and psychologising racism raise similar concerns. i.e. they both emphasise how certain, agent-centric conceptions of racism draw attention and resources away from non-individualistic solutions to racial inequality. This is not surprising given that psychologising racism is the broader phenomenon of which biologising racism proves to be one instance.⁸ Nevertheless, biologising racism also brings with it its own shares of specific concerns. As we have seen, it leads to

⁸ To psychologise racism, in effect, is to treat racism as a cognitive phenomenon, while to biologise it is to treat racism as a neuro-cognitive phenomenon.

the absurdity that we can cure racism with a pill. But perhaps even more worryingly, this itself can be seen as an example of the way biologising racism further legitimises quick and overly simplistic individualistic solutions to racism. As Khan notes, in bringing the “hard sciences” to bear on racism, “behavioural realism valorizes the scientific method as an autonomous means to solve complex social, historical, and political issues”, and thereby opens the door to the idea that there is an “ultimate technical fix” for such issues (pg. 13-14).

In *Race on the Brain*, Kahn’s target often shifts between biologised accounts racism and ones that psychologise racism more broadly. This is understandable given that his primary concerns, i.e. how behavioural realists frame racism and the opportunity costs to which this inevitably lead, are issues which dog both accounts. In this paper, my aim is to address these concerns, and in that regard, I take the situated solution on offer to be of interest to those who have concerns with psychologising racism in general, as well as those especially sceptical of its more recent, biologised incarnation.⁹

2.2 Philosophical Responses

As noted, Kahn is not the first to call our attention to how scientific research on racism, though well-intended, focus on individualistic interventions at the expense of ignoring the social and structural causes of racism. The sociologist Wellman, for instance, raises several worries, one of which is that “advocates of cognitive neuroscience locate the sources of discrimination in the minds (brains) of individual actors” (2007: 45), the upshot being that they can’t provide an examination of organisational structures that enable discriminatory bias. Machery, Faucher and Kelly (2010) argue that critiques of psychological explanations of racism, in general, rest on an overly simplified conception of psychological explanation. As for the aforementioned worry in particular, they respond that psychological explanations (i) acknowledge the social elements of racism, (ii) often target social change,

⁹ It is worth noting that similar concerns have also been raised in other domains, e.g. biologising mental disorder (e.g. Rose and Abi-Rached 2013) and neurologising crime (e.g. Fallin et al. 2018). Situated frameworks analogous to the one on offer in this paper should, *ceteris paribus*, prove relevant to addressing these concerns as well.

(iii) suggest mechanisms for racism which are plastic, and (iv) produce data which could be used as part of further strategies that target changes to institutional and social structures.

To elaborate, re-(i), they point out that psychologists often study the contextual effects on racism, with a focus on cues in our social environments that lead to both racist thought and behaviour. Moreover, re-(ii), they point out that psychologists often produce results which prescribe social remedies, e.g. they note that the work of Dasgupta and Greenwald (2001) suggests that one way to tackle racism is to increase the visibility of images of prominent and admired black individuals. Point (iii) is significant and not something we have addressed so far. While behavioural realists treat racial biases as a byproduct of our natural propensity to categorise, they don't take the categories we actually come up with as being inevitable. Racial biases stem from categorising practices that have their roots in harmful stereotypes, which is precisely why the sorts of remedies mentioned in (ii) can be effective. Finally, re-(iv), they observe, "We see nothing preventing the suggestions one might draw from psychology from being incorporated into social action or policy, either in the form of targeted changes to institutional or social structures" (pg. 243). It is certainly true that behavioural realism doesn't rule out such collaborative ways of combating racism.

Machery, Faucher and Kelly are thoughtful critics and succeed in waylaying many of Wellman's concerns.¹⁰ However, I don't think claims (i)-(iv) speak directly to Wellman and Kahn's concerns around framing and opportunity costs. Points (ii) and (iv), in particular, are telling. Re-(ii), behavioural realists do prescribe strategies to combat racism that can be classified as "social". Nevertheless, these strategies still overwhelmingly focus on bringing about individual change. Positive representations of disenfranchised groups, e.g. ethnic minorities, women, or members of the LGBTQI+ community, are all effective insofar as they push against harmful stereotypes dominant in our society. Moreover, they do so by making *us* rethink our stereotypes, by helping *us* replace our old categories with newer, less harmful, ones. But they don't seek to bring about any structural change, be it social or institutional. As Banaji and Greenwald note, stereotypes, though exaggerations, have an element of truth to them. A stereotype that represents most blacks as being poor, though technically false, might have its roots in

¹⁰ Like Kahn, Wellman arguably creates several strawpersons, including claiming that racism is seen by cognitive neuroscientists as being both fixed and inevitable.

the fact that unemployment amongst blacks is at least twice as high as that amongst whites (Wilson 2019). Simply “increasing the volume” of images of wealthy black celebrities will do nothing to address such income disparities. To an extent, Machery, Faucher and Kelly themselves seem to be aware of this, for they grant that such psychological explanations won’t help address one of Wellman’s examples: housing-related wealth inequality which stems from discrepancies in obtaining home-loans between whites and blacks. Unfortunately, they fail to appreciate the prevalence of such structural inequalities, and thereby don’t recognise potential opportunity costs which come with the ever-increasing dominance of psychological explanations of racism over historical, social and structural explanations.

Pace (iv), these opportunity costs are also compounded in the way behavioural realists themselves frame racism. To reiterate, there is nothing about the neurocognitive data itself that is contentious. I am also in agreement with Machery, Faucher and Kelly that there is no reason why we can’t deploy such data as part of a broader strategy to combat the structural causes of racism. (More on this in Section 4). The problem is that behavioural realists frame their results in a way that obscures such use. This is Kahn’s point. By framing racism as if it were *just* a unified, individualistic, neurobiological phenomenon in our head, behavioural realists encourage the use of their work as a master-narrative by which to address all of our racial ills. For example, Banaji and Greenwald, as we saw earlier, claim (most) contemporary forms of racism are best thought of ‘mind bugs’ that stem from our natural propensity to categorise. Framing racism in this manner, though feasible, draws our attention away from the structural causes which underly such categorisations in the first place. As Lawrence, another legal scholar, observes, “When the process of categorization, rather than the content of the categories, is our central concern, we turn our attention away from questions like, “Why is racism so ubiquitous in these categories?””(2008: 261).

One frustrating aspect of challenges to behavioural realism is that they tend to pit a psychological science of racism against the treatment of racism in other disciplines, e.g. sociology (Wellman) or law (Kahn). This creates a false and unnecessary dichotomy. All of these disciplines have important things to teach us about how to combat racism. (This, I understand, is also Machery, Faucher and Kelly’s position). The problem with the way behavioural realists tend to frame racism, however, is that it actively encourages this tension by proposing an individualistic, neurobiological understanding of

racism at the expense of obscuring other ways of conceptualising racism. The philosophical defence of behavioural realism doesn't adequately address this concern.

3. Situating Racism

How should a psychological science frame racism in a way that doesn't downplay the significance of the historical, social and institutional contexts that shape racism? One way to do so is to draw on the growing literature on situated cognition in order to 'situate' racism in such contexts. 'Situated cognition' now refers to a broad range of views with the main unifying idea being that cognition cannot be understood properly without "expanding our field of view" (Griffiths and Scarantino 2005: 449). For example, cognition cannot be understood without taking into account the cultural, social and physical contexts in which it unfolds.¹¹

One of the central advantages of a situated cognition framework is that it isn't necessarily supposed to be incompatible with other frameworks. Rather, it is supposed to emphasize the need to take into account other factors typically neglected by those who study cognition simply by looking at what happens inside our cranium. This promises to be useful for our purposes, as it could help us situate the various cognitive biases studied by behavioural realists in environmental contexts, and thereby take into account at least some of the factors which Kahn claims is neglected by the existing behavioural realist paradigm. In what follows, I draw on the literature on situated cognition to explain precisely how behavioural realists might situate the cognitive biases relevant for racism.

3.1 Situated Cognition

Advocates of situated cognition typically emphasize the embodied and/or embedded nature of cognition. Cognition is embodied when it depends on bodily processes, whereas it is embedded when it depends on extra-bodily environmental processes. For our purposes, what is most salient is how cognition is embedded in environmental features like social and institutional structures. The basic idea is that cognition is *dependent* on environmental factors. But understood literally, this is something everyone can grant. As we saw, even behavioural realists grant that it is social and cultural factors that

¹¹ See Wilson and Clark (2008) for an overview.

shape the cognitive biases relevant for racism. What we want, then, is a non-trivial account of how cognition depends on the environment; one that makes contextual features not just mere inputs into a distinct cognitive system, but one where these features are integral to cognition in a way not emphasised by traditional accounts. According to one such account, cognition is embedded in the sense that it is both guided and supported, or ‘scaffolded’, by our environment.¹²

According to the Scaffolded Mind Hypothesis (SMH), human cognitive capacities are depended on, and have been transformed by, resources in our environment (Sterelny 2010). This account draws on the niche construction model in evolutionary biology by Odling-Smee et al. (2003), which emphasises how organisms carve out niches to which they subsequently adapt. Organisms manipulate their environment which in turn transforms the organisms themselves, often in a way that enhances their survival. The SMH draws on the idea of *epistemic* niche construction, where we humans modify our environments in a way that enhances our cognitive capacities. For example, we use environmental resources, like language, mathematical notations, notebooks, calculators, computers etc., to scaffold our intelligence. What is relevant for our purposes is that social organisation is also a form of epistemic niche construction. Humans have modified their social environments in such a way that these environments play an active role in both the development and the preservation of many of our cognitive capacities. Moreover, one important feature of the way we socially and culturally scaffold our intelligence is through the transmission of knowledge across generations, something Sterelny calls ‘intergenerational social learning’.¹³ Simply put, we inherit (modifiable) epistemic niches, which shape our cognitive capacities.

Situated approaches to cognition are often put to the task of explaining how reliable external resources help us reduce our cognitive load. More relevant for our purposes is the literature on the situated cognition of emotion, which “emphasizes the role of social context in the production and management of an emotion, and the reciprocal influence of emotion on the evolving social

¹² This is a more conservative rival to the view that cognition literally ‘extends’ into the environment. See Clark (2008) for a defence and Rupert (2009) for a critique.

¹³ See also Sterelny (2003) and Heyes (2018).

context” (Griffiths and Scarantino 2005: 438).¹⁴ This is a version of the SMH, but with an emphasis on how emotions are scaffolded by our socio-cultural environment. Besides an emphasis on social context, two further features make Griffiths and Scarantino’s account of environmental scaffolding relevant for our purposes. First, they make a distinction between two types of environmental scaffolding:

Synchronically, the environment supports particular emotional performances - particular episodes of, say, anger or sadness ... Diachronically, the environment supports the development of an ‘emotional phenotype’ or repertoire of emotional abilities. Thus, the provision of confessionals in churches enables certain kinds of emotional performance (synchronic scaffolding), and the broader Catholic culture supports the development of the ability to engage in the emotional engagements of confession (diachronic scaffolding). (Griffiths and Scarantino 2005: 443)

On this view, the development of a cognitive capacity, in this case emotion, can be scaffolded by our environments diachronically, i.e. over the course of our lives, but such a capacity can also be scaffolded synchronically, i.e. in realtime, by the particular environment we happen to be in at a given moment.

Second, Griffiths and Scarantino also emphasize how emotion is ‘dynamically coupled’ to “an environment that both influences and is influenced by the unfolding of the emotion” (Griffiths and Scarantino 2005: 438). The notion of dynamic coupling is not unique to Griffiths and Scarantino’s account, but they place emphasis on how a cognitive capacity, i.e. emotion, is coupled to our socio-cultural environments. Emotions unfold in social situations where they are responses to the behaviour of subjects whose subsequent behaviour are shaped by these very responses. Both of these features will prove crucial in explaining how racial biases are scaffolded by our environment.

It is worth noting that Griffiths and Scarantino’s account isn’t the only taxonomy of scaffolding that might prove relevant for our concerns. As Varga points out, there are “several ways to taxonomize scaffoldings, such as by ontogenetic and phylogenetic aspects, by cognitive domains, or by the material constituents of the scaffoldings” (2018: 50). The account we have looked at focusses on environmental scaffolding, as it pertains to the domain of emotion. Varga’s own account, by contrast, is guided by

¹⁴ Also see Colombetti and Krueger (2014), and Stephan, Walter and Wilutzky (2014).

pragmatic and explanatory considerations concerning common symptoms in mental disorders. To this end, he makes a distinction between intrasomatic and extrasomatic scaffolding: respectively, scaffolding that involves one's body, e.g. the sensorimotor system, and scaffolding that involves systems outside one's body, e.g. props, devices and environmental structures. But he also introduces a form of extrasomatic scaffolding which he argues is neglected by the situated cognition literature, *viz.* intersomatic scaffolding that involves making use of another's body. His primary example is synchronic interaction patterns between infant and caregiver, such as coordination and imitation, which can facilitate the infant's emotion regulation; both in real-time and in the diachronic development of the infant's regulatory capacities.

For our purposes, we are interested in providing a situated account that is guided by pragmatic and explanatory considerations concerning racial biases, particularly considerations raised by Kahn's critique of behavioural realism. To this end, I will mainly follow Griffiths and Scarantino in focussing on environmental scaffolds; what Varga calls extrasomatic scaffolding. Moreover, my account will be conservative in the sense that I will mainly make use of non-somatic forms of extrasomatic scaffolding; ones which are analogous to those discussed by Griffiths and Scarantino, e.g. cases where a cognitive ability is guided and shaped by one's socio-cultural environment. Whether intersomatic scaffolding proves relevant to racial biases is an intriguing prospect. (Racial biases, for instance, might be reinforced due to an absence of the kinds of synchronic interaction patterns that foster a sense of connectedness between individuals). However, working out the details of how this may (or may not) happen is something I will leave for a later date.

3.2 Scaffolding Racism

To begin, I should clarify that the aim here is not to provide a situated account of all racism. Racism is a multifaceted phenomenon, which in all likelihood requires a pluralistic treatment. The aim, rather, is to provide a situated approach to the various cognitive biases which underlie certain kinds racist behaviour and form the subject matter of behavioural realism. Moreover, the underlying intention is to frame our study of these biases in such a way that we no longer downplay the significance of historical, social and institutional contexts that guide and support, i.e. scaffold, them.

The basic idea driving a situated approach to racial bias is to emphasize socio-cultural influences on the development and management of cognitive biases that underlie (some) racist behaviour, and the reciprocal influence such biases have on these socio-cultural factors themselves. As evident, racial biases can be environmentally scaffolded in two ways. First, various social and cultural contexts can diachronically scaffold the development of various cognitive biases during various stages of an individual's lifespan. For example, negative stereotypes concerning black men and danger may lead to the development of emotional and defence responses that trigger automatically in response to racial cues associated with black men (Phelps et al. 2000). Second, specific social and cultural contexts can also synchronically scaffold the manifestation of various cognitive biases in realtime. For instance, far right events, which espouse various kinds of negative stereotypes about non-whites, might prime their participants in such a way that these very events might synchronically scaffold certain cognitive biases, like anger and negative attitudes towards ethnic minorities. Let's look at these more carefully.

A lot of behavioural realist studies, especially ones which take advantage of the latest technologies in neuroscience, study racial perception with a focus on the amygdala, "an area of the brain that has been implicated in learned emotional responses" (Eberhardt 2005: 182).¹⁵ Neuroimaging studies, typically done on adults, routinely find differences in the amygdala activation for the perception of African American faces in comparison to European American faces.¹⁶ However, as Tezlar et al. observe, "differential amygdala response to African American faces does not emerge until adolescence, reflecting the increasing salience of race across development" (2013: 234). In particular, these differences become salient around 14 years. Tezler et al. suggest that this could be for a whole host of reasons, such as internal factors, e.g. puberty, as well as external factors such as an increase in cultural knowledge (e.g. implicit and explicit stereotypes around race) and self-explorations around ethnic

¹⁵ Recent work by LeDoux (2016) suggests that various neural circuits concerning the amygdala trigger our defensive responses, but not necessarily the conscious experience of fear itself. Most neuroscientists, e.g. Adolphs and Anderson (2018), are happy to use emotion terms to refer to internal brain states with physiological expressions, i.e. regardless of whether they have accompanying phenomenologies.

¹⁶ For a review see, Amodio (2014) and Chekroud et al. (2015).

identity. Moreover, they go on to conclude that “increasing salience of race across development may shape the functional architecture of the amygdala” (pg. 242). The question for us is how? Precisely how does development shape the architecture of our brain?

Tezlar et al. themselves take the main lesson of their research to be that neural biases to race are not “innate” but are rather a “social construction”. This may well be, but it doesn’t answer our question. Nor does it tell us whether the racial bias in question should itself be identified with these neural biases, or whether it should be construed as a broader phenomenon, with the neural biases as an integral component. The situated framework is well-placed to provide answers to both questions. According to the framework, various environmentally embedded factors like stereotypes (along with possibly embodied factors, e.g. puberty) diachronically scaffold the development of a neurobiological architecture, one where the amygdala becomes sensitive to certain racial cues. As for the racial bias itself, the situated framework suggests that it shouldn’t be reduced to an amygdala-centred neural circuitry. Rather, it should be understood as a situated phenomenon, one whose development is scaffolded by a host of social and physical factors.

A potential response is to accept that the development of various neural biases are shaped by our environment, but to insist that once they develop, certain racial biases themselves can be understood as nothing more than just these neural biases. Nothing I have said rules out such a reductive picture. However, the aim, recall, is to reframe psychological research on racial bias in a way that ensures we no longer ignore the social, historical and institutional factors that shape racism. A situated framework is more advantageous than a reductive one because it provides us with a way of addressing this concern. A situated approach to cognition is premised on the idea that (some) cognitive capacities cannot be understood without taking into account the cultural, social and physical contexts in which they unfold. Here we see that our ability to emotionally respond to various racial cues is one that cannot be understood without taking account of the epistemic niches in which we find ourselves. This sense of not being able to fully grasp certain cognitive capacities without taking into account their situated nature is only compounded when we take into account other elements of situated cognition, e.g. synchronic scaffolding and dynamic coupling.

So far we have looked at socio-cultural influences on the development of cognitive biases that underlie racist behaviour. But socio-cultural factors also influence their management. In other words, a lot of our racial biases are synchronically scaffolded by our social contexts. This is true of implicit biases more generally. For instance, in reviewing the empirical literature, Nosek and Riskind (2012) note:

Implicit social cognition is contextualized. This means that it is a function of both the preexisting content inside the person and the social circumstance in which it occurred (Blair, 2002; Gawronski & Sritharan, 2010; Lewin, 1943). Despite their automatic generation, implicit evaluations are sensitive to social circumstances, such as contextual clues about the valence of the social target (Barden, Maddux, Petty, & Brewer, 2004), viewing positive or negative instances before evaluating a social category (Dasgupta & Greenwald, 2001; Joy-Gaba & Nosek, 2010), participants' motivation to affiliate with another person whose beliefs are readily apparent (Sinclair, Lowery, Hardin, & Colangelo, 2005), or even mental and physiological states, such as implicit evaluations of smoking among habitual smokers following relative deprivation from smoking (Payne, McClernon, & Dobbins, 2007; Sherman, Rose, Koch, Presson, & Chassin, 2003). (Nosek and Riskind 2012: 122)

Some, such as Payne et al. (2017), argue that most systematic variance in implicit bias is situational. We needn't take a stand on this in this paper. The point is, race-based implicit biases are often context-dependent. For example, Dasgupta and Greenwald (2001) found exposure to pictures of admired blacks and disliked whites can reduce automatic preferences for whites over blacks. In particular, they found immediately after exposure, as well as 24hrs later, subjects showed a significant decrease in pro-white bias when measured using the IAT. These effects are well-known. Moreover, they also fit nicely into our framework. Racial biases, as measured by the IAT, are often scaffolded, synchronically, by social contexts.

Racial biases also appear to be dynamically coupled to their environment. The basic idea here is that our cognitive capacities are coupled to an environment that both shapes and is shaped by these capacities. Precisely how this plays out in the racial context is more speculative, as it isn't a feature directly measured by existing behavioural realist studies. Nevertheless, I mention it here because such a

coupling seems to be an important feature of how racial biases are environmentally embedded, and thereby might also prove crucial in working out ways to prevent or mitigate such biases. For example, racist attitudes towards African Americans might lead to law-enforcement officials acting more aggressively towards black suspects than to other racialised groups, which in turn might lead to such suspects acting in a more panicked and/or aggressive manner towards such officials than other suspects, thus creating a self-reinforcing and escalating pattern of aggression. This would explain why police checks for fairly mundane offences, like traffic violations, disproportionately result in violence or death when the suspects are black.

The unfolding of such dynamic agent-environment interactions prove difficult to replicate in a laboratory setting, but some aspects of these interactions are empirically born out. For instance, Eberhardt (2020) notes that black drivers stopped for traffic violations are twice as more likely than white drivers to be pulled over for high discretionary equipment violation instead of moving violations. Moreover, her studies also show that based on words alone, participants were able to tell whether a police officer was interacting with a white or black driver. (Police officers, both black and white, were found to be less respectful of black drivers than white). These sorts of factors make it likely that black drivers would behave differently to white drivers when pulled over. If there actually are such differences, they would be examples of the kinds reciprocal influence racial biases can have on the social environment itself.

In summary, a situated approach to race-based cognitive biases eschews an individualistic, biologised understanding of such biases for one which ‘situates’ them in our social and cultural environments. Racial biases of the kind studied by behavioural realists, as we saw, can be treated as embedded phenomena, both scaffold by, and coupled with, our socio-cultural environments. Since the embedded nature of these biases are integral to both their production and management, a situated perspective helps us reframe racial biases in a way that makes these environmental influences hard to ignore. On these grounds, I think a future science of racism will do well to adopt a situated approach to racism to guard against opportunity costs which result from the individualist narratives that typically frame such research.

4. Merits and Limitations

The situated approach to racial bias I have spelt out in this paper is closest to Griffiths and Scarantino's situated approach to emotion. Unsurprisingly, my approach shares many of the advantages they claim for their approach. It is worth quoting them in full:

The real theoretical payoff of the situated perspective on emotions is methodological. By shifting theoretical focus from the intrapsychic to the interpersonal, from the unbidden to the strategic, from the short lived to the long lived, from the context independent to the context dependent, from the static to the dynamic, the situated perspective points the attention of the research community to aspects of emotions that have been unduly neglected and that may hold the key to understanding the nature and function of a large class of emotions. These aspects of emotion have not been entirely ignored, of course .., but we think they would have become more central if a broader perspective on the mind suitable to encourage them had been available. (Griffiths and Scarantino 2005: 448-9)

Such methodological payoffs are directly relevant to our concerns. We began this paper with Kahn's objection that behavioural realism threatens to biologise racism, which in turn hinders approaches to tackle the social, historical and institutional causes of racism. I have argued that current work in cognitive psychology and neuroscience doesn't actually biologise racism in the sense of reducing it to a purely biological phenomenon. However, I have also argued that Kahn is right to point out that such sciences do have a framing problem: they often frame their research in a way which targets the individual, neurobiological features of our cognitive biases whilst ignoring, and even obscuring, other factors integral to their production and management.

The theoretical payoffs of a situated approach to such biases is that it shifts our focus, and helps us target features typically neglected by behavioural realist approaches. As in standard theories of emotion, dominant theories in a science of racial bias don't neglect socio-cultural influences on their subject matter. As we have seen, behavioural realists are explicit that what they are studying are the effects of socio-cultural features, like negative stereotypes. Nevertheless, as we have also seen, such factors tend to be relegated to the position of being mere background conditions. By contrast, a situated approach to racial bias makes these environmental influences more central to scientific

research. Such a science aims to understand not just individual cognitive biases, but how the development and management of these biases are scaffolded by, and coupled with, our socio-cultural environment. I have argued that this way of “expanding our field of view” helps us address significant aspects of Kahn’s concerns.

To be clear, there are approaches, especially within social psychology, that already advocate a more expansive understanding of racism. As Murphy et al. (2018) observe, it is ironic that for a field that touts the power of situational factors, social psychology mostly ends up locating prejudice within people, not places. But there are exceptions. For example, the “socio-contextual” (Murphy et al. 2018), “cultural-psychological” (Salter et al. 2018) and “integrative” (Trawalter et al. 2020) approaches to racism stress the impact of social, cultural, and historical-cum-structural contexts on individual biases, and *ergo* to varying degrees can be seen as examples of situated approaches. The integrative approach, for instance, expands our viewpoint in the following sense:

From a theoretical perspective, it invites us to (A) broaden theory to consider history and structures; and then (B) identify psychological mechanisms and phenomena that connect history and structures to outcomes. From a methodological perspective, it suggests a multi-pronged approach. To study individual and institutional racism, we can (1) measure exposure to systems and structures, and test associations with psychological mechanisms and outcomes; (2) manipulate salience of historical harms or systems; and (3) leverage ‘natural experiments’. (Trawalter et al. 2018)

In advocating this approach, Trawalter et al. note that “too often [psychology] has failed to contextualize individual biases within historically created and presently upheld structures” (pg. 47). One of their examples is the police use of force, e.g. that police officers are more than three times as likely to shoot a black person than a white person. The dominant behavioural realist frame attempts to understand this through the lens of individual biases, such as ‘mind-bugs’ and in-group favouritism. This, as Trawalter et al. argue, neglects the history of institutional violence against blacks by police, as well other structural factors, like residential segregation and economic disparities. An integrative approach, by contrast, aims to understand the link between such factors and individual bias, and does

so by encouraging social psychologists to draw on the wealth of material found in other disciplines, e.g. history, law, African American studies, sociology, economics etc.

Trawalter et al. themselves don't elaborate on the matter, but it is not hard to see how psychologists working on racial biases could, in a more general sense, be receptive to work done in such disciplines. For example, in his comparative study of Nazi Germany, Apartheid South Africa and Jim Crow U.S.A, the historian Fredrickson (2015) traces the history of Western racism and argues that it is not a "natural or virtually inevitable human response to encounters with strangers" but a "historical construction associated with the rise of modernity and with specific national or international contexts" (pg. 99). This in turn leads Fredrickson to a more expansive understanding of racism, one which involves the combination of a set of beliefs or attitudes with a set of practices, structures and institutions. Racism, understood from such a historical (and geographical) frame, then, cannot simply be reduced to a neurobiological phenomenon. What's more, it suggests that racial biases, even of the variety studied by behavioural realists, don't (just) stem from our natural propensities to categorise. Rather, they occur when such propensities combine with certain historically created ideologies that remain embedded in our cultural and institutional practices. Behavioural realists could be more sensitive to such factors, e.g. by examining not just how certain instances of racism link up with individual

cognitive biases, but how these biases themselves link up with certain historical and structural contexts.¹⁷

Since there already exists various approaches that encourage a more expansive understanding of racism, what use is there for the situated approach advocated in this paper? The main benefit is that it provides a broader framework by which to consider these existing approaches. This is important because it helps us unify these approaches under a single research scheme, which in turn helps us consider, collectively, approaches that place emphasis on different situational factors, e.g. the interplay between group-membership and organisational structures in propagating prejudice (e.g. Murphy et al.) or the role of “racist affordances”, i.e. cultural-cum-social cues, in directing individual bias (e.g. Salter et al.). Moreover, by doing so, we can also be clearer on which elements of the broader situated approach are stressed or neglected by a given approach. For instance, the socio-contextual and integrative approaches are good at encouraging us to look at how racism is both diachronically and synchronically scaffolded by institutional structures, but they neglect the way racial bias can be dynamically coupled to such structures. By contrast, the cultural-psychological approach considers both how cultural contexts shape racist habits of mind and how these habits in turn shape and maintain such contexts. In this way, by considering existing approaches as part of a broader, situated framework, we are able to better ensure that we pay attention to the full gamut of ways racial biases are environmentally embedded.

¹⁷ While social psychologists typically focus on the effects of people on prejudice, there is a growing body of work that examines the link between environmental factors (e.g. culture, institutions and history) and prejudice. For example, Payne et al. (2019) compared contemporary implicit bias rates within counties with the proportion of the population enslaved in them in 1860. They take their results to support the claim that implicit bias is a “cognitive residue of past and present structural inequalities” (pg. 11693). Also see the studies undertaken by Bonam, Bergsieker and Eberhardt (2016) which demonstrate how physical spaces linked to African Americans can be subject to negative racial stereotypes, and those by Salter and Adams (2016) which examine how representations of black history month can promote (or impede) perception of racism and anti-racist efforts. Behavioural realists should do more to incorporate such results in how they frame their own work.

As I see it, the main limitation with the situated approach is that it doesn't fully accommodate all of the features which Kahn claims is ignored by behavioural realism. More specifically, it doesn't directly take into account certain dimensions of the historical and institutional causes of racism. In this paper I have focussed mainly on social and cultural elements of racial bias, partly because they are, uncontroversially, central to contemporary forms of racial bias, and partly because existing situated approaches tend to also focus on socio-cultural factors, making it easy to see how to flesh out a situated approach to racial bias which makes these factors a key part of our research program. We have also just seen, albeit briefly, how a situated framework might look at the effects of history and institutions on individual biases. What we haven't seen, however, is the impact of historical and institutional factors on racism that outstrip our cognitive biases. Wellman's example of housing-related wealth inequality is a case in point:

Because fewer Blacks can obtain mortgage loans, and when they do obtain them they do so on less favorable terms, the value of the housing they purchase is lower on average than the value of housing purchased by Whites. White flight compounds the problem; the value of Black housing declines as Whites move out, making it more difficult for new Black buyers to obtain loans at reasonable rates of interest. The circle is completed when banks redline black neighborhoods, leading to downward spiral of disinvestment. African Americans, consequently, accumulate less wealth with devastating consequences. (Wellman 2007: 58)

In responding to this example, Machery, Faucher and Kelley grant that there is no obvious need to appeal to psychological states to explain this phenomenon, and therefore agree with Wellman that "some cases of racism can be adequately explained without mentioning psychological causes" (pg. 236). I think that's right. Behavioural realism takes as its explanatory target the cognitive biases which underlie certain kinds racist behaviour. As Kahn notes, like behavioural economists, they "apply cognitive theories to address pressing legal and policy issues" (pg. 64). In this paper, I have provided a situated framework by which to examine how our environments shape our cognitive biases. Such a framework is well-positioned to draw attention to the sorts of historical and institutional factors that

scaffold these biases. However, crucially, it will leave unaddressed any non-agential factors that propagate racial subordination.

Put another way, I have been proposing a way we might transpose a situated approach to cognition onto existing research programs in cognitive psychology and neuroscience. This, I think, can be done by drawing on other areas of psychology, such as developmental psychology and social psychology.¹⁸ However, I don't see an analogous area of psychology that studies the impact of historical and institutional structures on racial inequality which outstrip our cognitive biases. The various sub-disciplines within psychology, as well as those related to it such as cognitive neuroscience, simply don't take such structures as their explanatory targets. Subsequently, for all that I say here, a future psychological science of racism will, in all likelihood, leave certain fundamental underlying causes of racial inequality untouched.

That said, I don't think this limitation is damning. The reach of any individual discipline, by its very nature, is bound to be modest, especially when tackling a multifaceted phenomenon as complex as racism. A psychological science can only hope to tackle certain aspects of this phenomenon, which again presses the need for an interdisciplinary approach, one that includes insights from history, sociology, law etc. To that extent Kahn is right. And his point should not be understated. The penchant of law and policy makers, in recent years, for deferring to a science of implicit bias, arguably, has come at a cost of sidelining ways to address the underlying structural causes of racism. However, I think he is also wrong to press that such a science should only play a cursory role. As we saw, a situated approach can help us reframe existing research programs in both cognitive psychology and neuroscience to accommodate various environmental factors indispensable to an explanation of race-based cognitive biases. This should ward off any threat of biologising racism, and with it, one would expect, many of the opportunity costs which come from placing race on the brain.

¹⁸ Griffiths and Scarantino's situated approach to emotion, for instance, draws on the work of social psychologists Parkinson, Fischer and Manstead (2005). Likewise, as mentioned earlier, a situated approach to racism can draw on the work done by social psychologists such as Payne et al. (2019), Bonam, Bergsieker and Eberhardt (2016), and Salter and Adams (2016).

REFERENCES

- Anderson, A. K. and Phelps, E. A. (2002) 'Is the Human Amygdala Critical for the Subjective Experience of Emotion? Evidence of Intact Dispositional Affect in Patients with Amygdala Lesions'. *Journal of Cognitive Neuroscience* 14: 709–20.
- Amodio, D. M. (2014). 'The Neuroscience of Prejudice and Stereotyping'. *Nature Reviews Neuroscience* 15: 670-682.
- Banaji, M. R., and Greenwald, A. G. (2013). *Blindspot: Hidden Biases of Good People*. New York: Delacorte Press.
- Bonam, C. M., Bergsieker, H. B., and Eberhardt, J. L. (2016). 'Polluting Black Space'. *Journal of Experimental Psychology* 145(11): 1561-1582.
- Chekroud, A. M., Everett, J. A. C., Bridge, H., and Hewstone, M. (2014). 'A Review of Neuroimaging Studies of Race-related Prejudice: Does Amygdala Response Reflect Threat?' *Frontiers in Human Neuroscience* 8: 179.
- Cikara, M. and Van Bavel, J. J. (2014). 'The Neuroscience of Intergroup Relations: An Integrative Review'. *Perspectives on Psychological Science* 9: 246, 256.
- Clark, A. (2008). *Supersizing the Mind: Embodiment, Action, and Cognitive Extension*. Oxford and New York: Oxford University Press.
- Colombetti, G. and Krueger, J. (2014). 'Scaffoldings of the Affective Mind'. *Philosophical Psychology* 28 (8):1157-1176.
- Dasgupta, N. and Greenwald, A. G. (2001). 'On the Malleability of Automatic Attitudes: Combating Automatic Prejudice with Images of Admired and Disliked Individuals'. *Journal of Personality and Social Psychology* 81(5): 800.
- DeGrazia, D. (2013). 'Moral Enhancement, Freedom, and What We (Should) Value in Moral Behavior'. *Journal of Medical Ethics* 40(6): 364.
- Douglas, T (2013). 'Moral Enhancement Via Direct Emotion Modulation: A Reply to John Harris'. *Bioethics* 27(3): 164.
- Eberhardt, J. L. (2005). 'Imaging Race'. *American Psychologist* 60: 181–190.

- (2020). *Biased: Uncovering the Hidden Prejudice That Shapes What We See, Think, and Do*. New York: Viking.
- Fallin, M., Whooley W., and Barker, K. K. (2019). ‘Criminalizing the brain: Neurocriminology and the production of strategic ignorance’. *BioSocieties* 14: 438-462.
- Fredrickson, G. M. (2015). *Racism: A Short History*. Princeton and Oxford: Princeton University Press.
- Griffiths, P. E. and Scarantino, A. (2005). ‘Emotions in the Wild: The Situated Perspective on Emotion’. In P. Robbins and M. Aydede (eds.), *The Cambridge Handbook of Situated Cognition*, 437-453. Cambridge: Cambridge University Press.
- Heyes, C. (2018). *Cognitive Gadgets*. Cambridge and London: Harvard University Press.
- Kahn, J. (2018). *Race on the Brain: What Implicit Bias Gets Wrong About the Struggle for Racial Justice*. New York: Columbia University Press.
- Kang, J. (2005). ‘Trojan Horses of Race’. *Harvard Law Review* 118(5):1495.
- (2017). ‘A law professor worries that racial justice has been seduced by science’. *Science* <https://blogs.sciencemag.org/books/2017/11/27/race-on-the-brain/>
- Kubota, J. T., Banaji, M. R., and Phelps, E. A. (2012). ‘The Neuroscience of Race’. *Nature Neuroscience* 15(7): 940–948
- Lawrence III, C., (2008). ‘Unconscious Racism Revisited: Reflections on the Impact and Origins of “The Id, the Ego, and Equal Protection”’. *Connecticut Law Review* 40: 951.
- LeDoux, J. E. (2016). *Anxious: Using the Brain to Understand and Treat Fear and Anxiety*. New York: Viking.
- Lipmann, W. (1922). *Public Opinion*. New York: Harcourt, Brace and Company.
- Machery, E., Faucher, L., and Kelly, D. R. (2010). ‘On the Alleged Inadequacies of Psychological Explanations of Racism’. *The Monist* 93(2): 228-254.
- Murphy, M. C., Kroeper, K. M., and Ozier, E. M. (2018). ‘Prejudiced Places: How Contexts Shape Inequality and How Policy Can Change Them’. *Behavioral and Brain Sciences* 5(1): 66-74.
- Nosek, B. A., and Riskind, R. G. (2012). ‘Policy Implications of Implicit Social Cognition’. *Social Issues and Policy Review* 6(1): 113-147.
- Odling-Smee, J., Laland, K. N., and Feldman, M. W. (2003). *Niche Construction: The Neglected Process in Evolution*. Princeton, NJ: Princeton University Press.

- Parkinson, B., Fischer, A. H., & Manstead, A. S. R. (2005). *Emotions in Social Relations: Cultural, Group and Interpersonal Processes*. New York: Psychology Press.
- Payne, B. K., Vuletich, H. A., and Lundberg, K. B. (2017). 'The Bias of Crowds: How Implicit Bias Bridges Personal and Systemic Prejudice'. *Psychological Inquiry* 28: 233–248.
- Payne, B. K., Vuletich, H. A., and Brown-Iannuzzi, J. L. (2019). 'Historical Roots of Implicit Bias in Slavery'. *Proceedings of the National Academy of Sciences of the United States of America* 116(24): 11693-11698.
- Phelps, E. A., O'Connor, K. J., Cunningham, W. A., Funayama, E. S., Gatenby, J. C., Gore, J. C., and Banaji, M. R. (2000) 'Performance on Indirect Measures of Race Evaluation Predicts Amygdala Activation'. *Journal of Cognitive Neuroscience* 12(5): 729.
- Pustilnik, A. (2012). 'Racey, Racey Neuro-hype! Can a Pill Make You Less Racist?'. *Concurring Opinions*, <http://www.concurringopinions.com/archives/2012/03/racey-racey-neuro-hype-can-a-pillmake-you-less-racist.html>.
- Rose, N. and Abi-Rached, J. M. (2013). *Neuro: The New Brain Sciences and the Management of the Mind*. Princeton and Oxford: Princeton University Press.
- Rupert, R. D. (2009). *Cognitive Systems and the Extended Mind*. Oxford and New York: Oxford University Press.
- Salter, P. S. and Adams, G. (2016). 'On the Intentionality of Cultural Products: Representations of Black History As Psychological Affordances'. *Frontiers in Psychology* 7 (1166): doi: 10.3389/fpsyg.2016.01166
- Salter, P. S., Adams, G., and Perez., M. J. (2018). 'Racism in the Structure of Everyday Worlds: A Cultural-Psychological Perspective'. *Current Directions in Psychological Science* 27(3): 150-155.
- Scheepers, D., Ellemers, N., and Derks, B. (2012). 'The 'Nature' of Prejudice: What Neuroscience Has to Offer to the Study of Intergroup Relations'. In B. Derks, D. Scheepers and N. Ellemers (eds.) *Neuroscience of Prejudice and Intergroup Relations*. New York: Psychology Press.
- Stanley, D. Phelps, E. A., and Banaji, M. R. (2016). 'The Neural Basis of Implicit Attitudes'. *Current Directions in Psychological Science* 17: 165.

- Stephan, A., Walter, S., and Wilutzky, W. (2014). 'Emotions Beyond Brain and Body'. *Philosophical Psychology* 27(1): 65-81.
- Sterelny, K. (2003). *Thought in a Hostile World: The Evolution of Human Cognition*. Malden, Oxford and Carlton: Wiley-Blackwell.
- (2010). 'Minds: Extended or Scaffolded?' *Phenomenology and the Cognitive Sciences* 9(4): 465-481.
- Terbeck, S., Kahane, G., McTavish, S., Savulescu, J., Cowen, P. J., and Hewstone, M. (2012). 'Propranolol Reduces Implicit Negative Racial Bias'. *Psychopharmacology (Berl)* 222(3): 419–424.
- Tezlar, E. H., Humphreys, K. L., Shapiro, M., and Tottenham, N. (2013). 'Amygdala Sensitivity to Race Is Not Present in Childhood but Emerges over Adolescence'. *Journal of Cognitive Neuroscience* 25(2) : 244.
- Trawalter, S., Bart-Plange, D-J., and Hoffman, K. M. (2020). 'A socioecological psychology of racism: making structures and history more visible'. *Current Opinion in Psychology* 32: 47-51.
- Varga, S. (2018). *Scaffolded Minds: Integration and Disintegration*. Cambridge and London: MIT Press.
- Vedantam, S. (2005). 'See No Bias'. *Washington Post*, January 23, 2005, <http://www.washingtonpost.com/wp-dyn/articles/A27067-2005Jan21.html>.
- VanLehn , K. (1990). *Mindbugs: The Origins of Procedural Misconceptions*. Cambridge, M A: MIT Press.
- Wellman, D. (2007). 'Unconscious Racism, Social Cognition Theory, and the Legal Intent Doctrine: The Neuron Fires Next Time'. In H. Vera and J. Feagin (eds.), *Handbook of Racial and Ethnic Relations*, 39-65. New York: Springer.
- Wilson, R. and Clark, A. (2008). 'How to Situate Cognition: Letting Nature Take its Course'. In M. Aydede and P. Robbins (eds.), *The Cambridge Handbook of Situated Cognition*. Cambridge: Cambridge University Press.
- Wilson, V. (2019). 'Black unemployment is at least twice as high as white unemployment at the national level and in 14 states and the District of Columbia'. *Economic Policy Institute*, <https://www.epi.org/publication/valerie-figures-state-unemployment-by-race/>