Instilling New Habits:

Addressing Implicit Bias in Healthcare Professionals

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Abstract

There appears to be a fundamental inconsistency between research which shows that some minority groups consistently receive lower quality healthcare and the literature indicating that healthcare workers appear to hold equality as a core personal value. Recent evidence using Implicit Association Tests (IAT) suggests that these disparities in outcome may in part be due to social biases that are primarily unconscious. In some individuals the activation of these biases may be also facilitated by the high levels of cognitive load associated with clinical practice. However, a range of measures, such as counter-stereotypical stimuli and targeted experience with minority groups, have been identified as possible solutions in other fields and may be adapted for use within healthcare settings. We suggest that social bias should not be seen exclusively as a problem of conscious attitudes which need to be addressed through increased awareness. Instead the delivery of bias free healthcare should become a habit, developed through a continuous process of practice, feedback and reflection.

There is growing evidence that even when factors such socio-economic background, educational attainment, and underlying conditions are controlled for, healthcare workers do not provide equivalent levels of care to patients of different social groups (Clark, 2009; Parliamentary Office of Science and Technology, 2007). The prevalence of this phenomenon is surprising given the literature that describes healthcare professionals as highly motivated individuals who explicitly endorse egalitarian goals such as fairness (Dall'Alba, 1998; Draper and Louw, 2007). However, recent studies have unveiled evidence that strongly suggests that non-conscious social biases are one of the causes of the persistence of the observed disparities in health care (Green et al., 2007; Sabin and Greenwald, 2012; Chapman et al., 2013). This evidence would explain, for example, the co-existence in individuals of consciously held anti-racist beliefs and explicitly endorsed egalitarian values at the same time as implicit negative affective evaluations and non-conscious stereotyping.

Many educators appear to characterise bias exclusively as a problem of 'lack of awareness' and therefore assume that raising awareness will be sufficient to solve the problem. For example, "programme effectiveness" has been evidenced by the finding that "[s]ensitizing programmes result in positive attitude change in students" and that "gender sensitizing courses may have an empowering effect on students themselves" (Verdonk et al., 2009). However, if, as recent literature suggests, attitudes and stereotypical representations, which are both automatic and unconscious, are one important cause of biased behaviours and judgements, cultural competence training and awareness raising alone will not inhibit

the activation of these processes or mitigate their effects on behaviours. This conclusion is supported by evidence indicating that individuals may have high levels of implicit social biases even when they have low levels of explicit bias (Devine et al., 2002; Greenwald and Nosek, 2008).

The primary problem is that exposure to an individual patient may trigger in a clinician an implicitly held stereotype or negative affective evaluation about a social group. For example, prejudices about chaotic lifestyle may be unconsciously activated by the recognition that a patient has a tattoo. These prejudices once activated may cause the healthcare professional to become concerned about treatment compliance, with the result that active treatment is less likely to be offered. It is also likely that the clinician would be unaware of what prompted the concern and be prone to construct a justification after the event. In some instances social biases will cause subtle changes in behaviour such as, for example, reduced eye contact, shortened consultation times and decreased probability of referral. In all such cases the clinicians concerned could be largely unaware of the stereotypes or negative affective evaluations that guide their interactions with patients and could be expected to deny any such biases if directly questioned. It should be noted that the influence of social biases on judgements and behaviour should be reduced in cases where the correct choice is evident or where there is time for the clinician to make a considered decision. Further, these considerations do not deny that explicit prejudice may exist in some healthcare professionals. Our present concern is with implicit social biases whose influence is additional to that of conscious prejudices and which can be present despite the absence of explicit biases.

Prompted by recognition of these issues, some new educational interventions have been developed which aim to mitigate the effects of unconscious or implicit biases in healthcare provision (Teal et al., 2010; Stone and Moskowitz, 2011; Hernandez et al., 2012; Gonzalez et al., 2014). These proposals, although welcome, suffer from serious limitations. They are 'one shot' interventions involving one dedicated classroom session whose purpose is to inform about biases, to induce acknowledgement from the participants that they themselves are likely to be to some extent biased, and to induce reflection on one's experience of biased attitudes. In addition the intervention proposed by Stone and Moskowitz (2011) also would include information about effective strategies to mitigate stereotype activation.

Several features of these approaches militate against their effectiveness. Firstly, implicit processes are often highly contextualised, and like habits, are therefore difficult to dislodge without repeated intervention (Devine et al., 2012). For this reason, 'one shot' approaches especially when carried out in a classroom environment are unlikely to influence behaviour in clinical contexts. Secondly, any strategies to address implicit social biases, which are learnt in this manner, are unlikely to become themselves habitual as they are not re-enforced through continuous practice. As a result their application would require significant and prolonged, conscious effort on the part of the medical professional. Thirdly, the literature on implicit social bias indicates that individuals are more prone to socially biased decisions and behaviours when highly stressed or tired and when decisions need to be made quickly (Moskowitz, 2010). For example, cognitively depleted individuals have been shown to suffer from more pronounced implicit racial bias than their control group counterparts (Ma

et al., 2013). It would seem that a strategy that increases the cognitive load of individuals who already find themselves in a cognitively depleted situation will either not be adopted or if adopted may be counter-productive as it may make the practitioner more prone to social bias.

In this article, relying on the notion of habitual action, which involves intelligent and yet quasi automatic responses to situations, we propose that effective educational programmes to address implicit social bias in healthcare provision require the inculcation of new habits in medical students through a process of habituation. The process requires that learning about social bias and opportunities to practice unbiased action are embedded in the curriculum at all stages rather than being addressed in a few dedicated sessions. The process of habituation involves both critical reflection and the regular deployment (until they become second nature) of strategies which have shown to be efficacious in addressing implicit biases. We outline our proposal in the third and final section of this paper. In the first we explain in more detail the nature of implicit biases and some of their effects in healthcare provision, while in the second we offer a critical review of existing educational proposals intended to address implicit bias in medical students.

1. IMPLICIT BIASES

Social biases can be held implicitly or explicitly. Implicit biases are somewhat unconscious and automatic in so far as they execute behaviour without the conscious intention of the agent. They are so-called because they are best measured by means of implicit measures such as Implicit Association Tests (IAT) tests.[1] Explicit biases are more

consciously controlled (Devine, 1989) and can be investigated by measures such as verbal self-reports. Both kinds of biases are attitudes in the sense of this notion which is prevalent in social psychology. It is presently still unresolved whether implicit and explicit attitudes involve the same underlying representations. Their dissociation, however, is well established, so that individuals who explicitly only hold weakly negative attitudes toward a social group may be implicitly highly biased (Banaji and Heiphetz, 2010).

Implicit biases include stereotypes and negative affective evaluations toward a target social group. An implicit stereotype is usually seen as an unconscious schema or pattern of representations that associates members of given social groups with some set of characteristics that may or may not be prevalent among members of that group. Examples are black men and athleticism or women and lack of mathematical ability (Amodio and Devine, 2006). Implicit affective evaluations are positively or negatively valenced emotional states towards members of a given social group (Amodio and Devine, 2006). Recent studies show only a weak correlation between implicit stereotyping and implicit negative affective evaluations. Thus individuals in whom negative affective evaluations are easily triggered when encountering a member of a given social group may not have highly accessible stereotypes about that given group. Thus, whilst such individuals may engage in the sort of avoidance behaviour, such as avoiding eye contact, which is typically caused by unconscious negative affective evaluations, they may not be biased in their judgement if stereotypes about the given group are not activated (Amodio and Devine, 2006).

The above distinction between automatic (implicit) and controlled (explicit) processes is crucial in determining the educational activities which would be effective in reducing bias.

For example, if the problem is due solely to controlled processes, then educational activities which focus on raising levels of awareness in students and improving their ability to recognise equality and diversity issues should be effective in reducing this kind of bias. However, if the problem is primarily due to automatic or unconscious processes, then such measures would be expected to be ineffective at best and likely to worsen performance because cognitively depleted individuals are likely to be more implicitly biased (cf., Ma et al., 2013) and because attempts to redress explicit negative attitudes have been shown in some cases to amplify inadvertently negative implicit attitudes toward the target group by activating stereotypes (Tinkler, Li & Mollborn, 2007).

2. EXISTING INTERVENTIONS

Outside the area of healthcare some of the most prominent recommended strategies to avoid implicit bias involve engaging controlled processes by avoiding tiredness and stress and by slowing down decision making. They also include isolation strategies such as anonymising resumes or introducing 'blind' auditions in hiring decisions (Rooth, 2007, Goldin and Rouse, 2000). However isolation strategies are unhelpful in a medical context where the patient's gender and ethnicity are important considerations in the decision making process. In addition, recommendations to slow down and avoid tiredness and stress may not always be practicable in a clinical context.

Most existing educational proposals in a healthcare context have therefore focused on encouraging students to take the IAT test for themselves and subsequently to engage in small group discussions on the nature of implicit biases (Teal et al., 2010; Hernandez et al.,

2012; Gonzalez et al., 2014). The authors of these programmes recognise the modest efficacy of these educational interventions. They also acknowledge the risks of meeting resistance, as clinicians are likely to react negatively to being labelled 'biased'. In addition, as noted above, the very nature of implicit bias means that increased awareness in itself would not be expected directly to mitigate bias and that change can only be effected through repeated conscious practice. However, despite recent studies that suggest that biases are more malleable, and responsive to self-regulatory change, than was previously thought (Monteith et al., 2009), it is unlikely that students would maintain the required motivation continually to self- monitor their behaviour for dissonance between consciously endorsed egalitarian values and non-conscious prejudiced stereotypes after one information session and discussion group. In addition, even those students who may become motivated as a result of this session are likely to see such motivation wither away under the stress of real life clinical practice. Finally, if the attempt to regulate prejudicial behaviour is carried out consciously, it may increase the cognitive load of the clinician and will, as a result, interfere with their ability to make accurate assessment of the situation. For all of these reasons, interventions that focus on self-regulation strategies linked to changes to automatic, non-conscious processes that control stereotype activation are to be preferred.

More promising is the growing psychological literature on how to use non-conscious processes to inhibit stereotype activation or to mitigate its effects. One for example, is the strategy of developing associations between members of stereotyped groups and egalitarian goals promoting equality and fairness. Thus students are encouraged to approach every encounter with patients who are members of underprivileged or stereotyped social groups as

an opportunity to re-enforce and act out their avowed commitment to these values. This strategy holds promise because there is significant evidence that if egalitarian goals or the goal to be creative become chronically highly accessible they become automatically activated in situations of interaction with members of stereotyped social groups. Their activation, which happens without the conscious intention of the agent, inhibits or at least dampens that activation of the stereotype (Moskowitz and Li, 2011). In these cases as the self-regulation happens through the deployment of automatic processes, it is not likely to increase further the cognitive load under which the health care professional is working.

3 HABITUATION

There is empirical evidence that such non-conscious goal pursuit is possible as a form of habitual action (Aarts, 2007). Goals can become chronically accessible so that they are automatically triggered by given situations. Further, when behaviour directed at the pursuit of these goals has become habitual, the unconscious activation of the goal automatically triggers processes responsible for the execution of behaviour instrumental to achieving these goals (Aarts et al., 1998; Snow, 2010). The formation of these habits requires a long training period when subjects consciously decide to pursue the relevant goal and select the most effective action in the circumstances to achieve it. With practice the goals come to be activated non-consciously and their activation brings in its trail the execution of the relevant action.

It might be worth repeating that the process of making egalitarian goals chronically accessible requires conscious effort over a period of time. It is only after this process of

habituation that egalitarian goals can be become automated and be triggered by the mere presence of a target group. Thus, whilst the desired outcome is to use non-conscious processes to mitigate implicit biases, habituation requires the deployment of controlled processes during the learning period.

At the core of our proposal lies the idea that actions and attitudes directed at the pursuit of egalitarian goals can become habitual in this way. The development of these habits involves strengthening one's commitment to egalitarian goals until these goals become chronically highly accessible in many different situations. In this manner these goals are activated when situations, which would have previously led instead to activation of stereotypes, are encountered. In a word, the aim is to substitute biased unconscious processes with processes that would be equally unconscious and automatic, but directed toward egalitarian goals. Old biased habits would thus be replaced by new egalitarian ones (Webber, forthcoming).

A key concept here is not to see clinician/patient interaction as a simple exchange of information but rather as equivalent to the complex and fast moving interactions of a high level sport or dance. This viewpoint emphasises that it is not enough to understand a dance or sport, without expertise developed through years of practice, performance will inevitably be poor (Ericsson, 2014). This leads to a clear distinction between education as the acquisition of specific knowledge, skills and attitudes through a series of targeted educational interventions and education as personal transformation through purposeful experience and practice and personal commitment to change.

In practical terms, during a routine consultation, a clinician asks questions, evaluates answers, records a summary and responds appropriately to any expressed emotions, whilst being regularly interrupted. If, when dealing with a patient from a minority group, the clinician attempts to consciously monitor their own verbal content for stereotypical language, it is likely that the additional workload will cause them to reduce eye contact, fail to ask relevant questions or to miss crucial information. In some cases, the extra workload might be enough to allow the patient to realise that the clinician is behaving abnormally. Therefore, the very act of trying to remain unbiased becomes the source of biased behaviour. Our suggestion is instead that clinicians should develop their clinical routines to the point where they are so automated that when faced with an individual from a minority that they don't need to consciously adapt their interactions, and therefore treat all patients fairly.

There are several reasons to see the creation of new habits as a more effective approach to addressing the issues raised by the influence of stereotypes and attitudes on judgement and behaviour than the more traditional awareness raising approach. Firstly, the deployment of some conscious strategies to inhibit stereotype activation has been shown to be less effective in situations of high cognitive load (Galinsky and Moskowitz, 2007). In contrast, habits are much more likely to be accessible in the clinical environment with its associated high levels of workload (Byrne, 2011; Byrne et al., 2013). Secondly, the conscious deployment of strategies to undermine bias may be prone to errors of overcompensation and might even impair clinical judgement (Stone and Moskowitz, 2011). Thirdly, there is some evidence that conscious strategies to inhibit stereotype activation unwittingly hinder

thinking of these situations as opportunities to confirm one's commitment to equality and fairness (Monteith et al., 2009) as they focus on avoiding undesirable behaviour.

The educational intervention we advocate is a programme of habit formation. It would involve multiple small interventions taking place at regular frequent intervals at every stage of the curriculum, rather than 'one shot' information and training sessions. That is, we do not advocate significant additions to existing curricula, but rather a shift in the focus of existing clinical encounters at all stages of the curriculum. Initially the programme would seek to re-enforce and deepen the commitment to the egalitarian values widespread among healthcare professionals at the start of their education. At this stage the focus would be to help students to avoid seeing the values they hold as truisms (Maio and Olson, 1998) and to assist them in the process of articulating reasons in support of these values. Students would be asked to reflect on their motivations for embarking on a career in the healthcare professions, and explain the values underpinning their decisions. The process of developing cognitive support in favour of one's values is intended to make these values more stable over time and across different situations.

Subsequently, the programme would involve numerous opportunities to develop novel associations between encounters with members of stereotyped groups and egalitarian goals until such encounters no longer activate negative stereotypes and affective evaluations. For example, these associations could be built into the clinical vignettes used to test trainee's medical knowledge. Such vignettes could portray counter-stereotypical members of minority groups, or the narrative accompanying the vignette could help the healthcare professional to

see things from the prospective of a member of a minority group. In addition, the programme may involve the introduction of decision making aids, such as triggered prompts or treatment algorithms, which could also play a role in the modification of behaviour, although we recognise that this approach has yet to be properly investigated.

As part of the programme students would also be educated about implicit biases such as stereotypes and negative affective evaluations, be encouraged to sit an IAT test, and educated about some of those strategies that have been found to be effective to mitigate bias. However, we would advocate a focus especially on those strategies that make egalitarian goals more accessible, such as associating minority groups with egalitarian goals and taking the perspective of individuals belonging to these groups (Stone and Moskowitz, 2011). An example could be the creation of opportunities to get to know specific drug users so that one may have a better understanding of their experiences as seen from their perspective. This strategy may also induce counter-stereotypical thinking so that the word 'drug user', for example, triggers the concept of 'Paul at the homeless shelter' instead of 'dangerous criminal'. What is crucial is that students are not merely informed of the existence of these strategies but offered opportunities on a regular basis to practice and get feedback on their behaviour during a variety of authentic patient interactions. In other words, what is required is the creation within the curriculum of opportunities for students to develop and practice habitual egalitarian attitudes and behaviour. Creating such opportunities would involve increasing exposure of students to members of minority groups so that they are encountered on a regular basis. It would also be helpful to present students

with examples of members of minority groups that do not fit the stereotypes (Devine et al., 2012).

The goal is that by the end of the curriculum, egalitarian goals have become chronically accessible so as to facilitate the inhibition of implicit bias in a bottom-up and automatic fashion. In addition, the programme will inculcate a conception of medical education as a commitment to a lifelong process of personal transformation through purposeful practice and critical self-evaluation rather than as the acquisition of specific knowledge and skills.

In conclusion, what we advocate is the integration of situations that require the re-affirmation of egalitarian goals and the performance of actions instrumental to achieving unbiased healthcare throughout clinical curricula. In combination with education in anti-bias strategies, targeted feedback and the opportunity to reflect, the aim would be to develop clinicians who deliver unbiased healthcare through practiced habit. [2]

References

AARTS, H. (2007) On the emergence of human goal pursuit: The nonconscious regulation and motivation of goals. *Social and Personality Psychology Compass,* 1, 183-201.

AARTS, H., VERPLANKEN, B. & KNIPPENBERG, A. (1998) Predicting behavior from actions in the past: Repeated decision making or a matter of habit? *Journal of Applied Social Psychology,* 28, 1355-1374.

AMODIO, D. M. & DEVINE, P. G. (2006) Stereotyping and evaluation in implicit race bias: evidence for independent constructs and unique effects on behavior. *Journal of personality and social psychology,* 91, 652-661.

BYRNE, A. (2011) Measurement of Mental Workload in Clinical Medicine: A Review Study. *Anesthesiology and Pain Medicine,* 1, 90-94.

BYRNE, A. J., MURPHY, A., MCINTYRE, O. & TWEED, N. (2013) The relationship between experience and mental workload in anaesthetic practice: an observational study. *Anaesthesia,* 68, 1266-1272.

CHAPMAN, E. N., KAATZ, A. & CARNES, M. (2013) Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities. *Journal of general internal medicine,* 28, 1504-1510.

CLARK, A. (2009) Ageism and age discrimination in primary and community health care in the United Kingdom. Centre for Policy on Ageing.

DALL'ALBA, G. (1998) Medical practice as characterised by beginning medical students. *Advances in Health Sciences Education,* 3, 101-118.

DEVINE, P. G. (1989) Stereotypes and Prejudice - Their automatic and controlled components. *Journal of Personality and Social Psychology,* 56, 5-18.

DEVINE, P. G., FORSCHER, P. S., AUSTIN, A. J. & COX, W. T. (2012) Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of experimental social psychology,* 48, 1267-1278.

DEVINE, P. G., PLANT, E. A., AMODIO, D. M., HARMON-JONES, E. & VANCE, S. L. (2002) The Regulation of Explicit and Implicit Race Bias: The Role of Motivations to Respond Without Prejudice. *Journal of Personality & Social Psychology,* 82, 835-848.

DRAPER, C. & LOUW, G. (2007) What is medicine and what is a doctor? Medical students' perceptions and expectations of their academic and professional career. *Medical teacher,* 29, e100-e107.

ERICSSON, K. A. (Ed.) (2014) *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games*, Psychology Press.

GALINSKY, A. D. & MOSKOWITZ, G. B. (2007) Further ironies of suppression: Stereotype and counterstereotype accessibility. *Journal of Experimental Social Psychology,* 43, 833-841.

GOLDIN, C. & ROUSE, C. (2000) Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. *American Economic Review,* 90, 715-741.

GONZALEZ, C. M., KIM, M. Y. & MARANTZ, P. R. (2014) Implicit Bias and Its Relation to Health Disparities: A Teaching Program and Survey of Medical Students. *Teaching and learning in medicine,* 26, 64-71.

GREEN, A. R., CARNEY, D. R., PALLIN, D. J., NGO, L. H., RAYMOND, K. L., IEZZONI, L. I. & BANAJI, M. R. (2007) Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *Journal of General Internal Medicine,* 22, 1231-1238.

GREENWALD, A. G., & NOSEK, B. A. (2008) Attitudinal dissociation: What does it mean? In R. E. Petty, R. H. Fazio, & P. Brinol (Eds.), Attitudes: Insights from the new implicit measures, 65-82. Lawrence Erlbaum.

HERNANDEZ, R. A., HAIDET, P., GILL, A. C. & TEAL, C. R. (2012) Fostering students' reflection about bias in healthcare: Cognitive dissonance and the role of personal and normative standards. *Medical teacher,* 35, e1082-e1089.

MA, D. S., CORRELL, J., WITTENBRINK, B., BAR-ANAN, Y., SRIRAM, N. & NOSEK, B. A. (2013) When Fatigue Turns Deadly: The Association Between Fatigue and Racial Bias in the Decision to Shoot. *Basic and Applied Social Psychology,* 35, 515-524.

MAIO, G. R. & OLSON, J. M. (1998) Values as truisms: evidence and implications. *Journal of Personality and Social Psychology,* 74, 294.

MONTEITH, M. J., LYBARGER, J. E. & WOODCOCK, A. (2009) Schooling the cognitive monster: The role of motivation in the regulation and control of prejudice. *Social and Personality Psychology Compass,* 3, 211-226.

MOSKOWITZ, G. B. (2010) On the Control Over Stereotype Activation and Stereotype Inhibition. *Social and Personality Psychology Compass,* 4, 140-158.

MOSKOWITZ, G. B. & LI, P. (2011) Egalitarian goals trigger stereotype inhibition: A proactive form of stereotype control. *Journal of Experimental Social Psychology,* 47, 103-116.

ROOTH, D. (2007) Implicit Discrimination in Hiring: Real World Evidence. Discussion Paper No. 2764. Institute for the Study of Labor

PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY. (2007) Ethnicity and Health, POST Report 276, January 2007.

SABIN, J. A. & GREENWALD, A. G. (2012) The influence of implicit bias on treatment recommendations for 4 common pediatric conditions: pain, urinary tract infection, attention deficit hyperactivity disorder, and asthma. *American journal of public health,* 102, 988-995.

SNOW, N. E. (2010) *Virtue as social intelligence: An empirically grounded theory*, Routledge.

STONE, J. & MOSKOWITZ, G. B. (2011) Non-conscious bias in medical decision making: what can be done to reduce it? *Medical Education,* 45, 768-776.

TEAL, C. R., SHADA, R. E., GILL, A. C., THOMPSON, B. M., FRUGÉ, E., VILLARREAL, G. B. & HAIDET, P. (2010) When best intentions aren't enough: helping medical students develop strategies for managing bias about patients. *Journal of general internal medicine,* 25, 115-118.

TINKLER, J., LI, Y. & MOLLBORN, S. (2007) Can Legal Interventions Change Beliefs? The Effect of Exposure to Sexual Harassment Policy on Men's Gender Beliefs. *Social Psychology Quarterly* 70, 480-94.

VERDONK, P., BENSCHOP, Y. M., DE HAES, H. J. M. & LAGRO-JANSSEN, T. M. (2009) From gender bias to gender awareness in medical education. *Advances in Health Sciences Education,* 14**,** 135-152.

WEBBER, J. (forthcoming) Instilling Virtue. In WEBBER, J & MASALA, A. (EDS) *From Personality to Virtue: Essays in the Psychology and Ethics of Character,* Oxford University Press.

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[1] We encourage readers to try taking one such test by visiting the Project Implicit at https://implicit.harvard.edu/implicit/

[2] We would like to thank two anonymous referees, the editor and associate editor of this journal whose constructive comments have greatly helped to sharpen several of the claims made in this paper.