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Combat Trauma and the Moral Risks of Memory Manipulating Drugs

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ABSTRACT *To date, 1.7 million US military service personnel have been deployed to Iraq and Afghanistan. Of those, one in five are suffering from diagnosable combat-stress related psychological injuries including Posttraumatic Stress Disorder (PTSD). All indications are that the mental health toll of the current conflicts on US troops and the medical systems that care for them will only increase. Against this backdrop, research suggesting that the common class of drugs known as beta-blockers might prevent the onset of PTSD is drawing much interest. I urge caution against accepting too quickly the use of beta-blockers for dealing with the psychological injuries that combat experiences can wreak. Beta-blockers are thought to work by disrupting the formation of emotionally disturbing memories that typically occur in the wake of traumatic events and that in some people manifest as PTSD. Focusing on a single dimension of soldiers' experience in combat, namely, their perpetration of other-directed violence, I argue that some of the emotional memories blunted by beta-blockers play important roles in the recovery of* moral *aspects of soldiers' selves damaged by experiences of combat violence — specifically, in the achievement of a state of* grace *— and, therefore, that the use of beta-blockers may come with distinct moral costs.*

1. Introduction

Since October 2001, approximately 1.7 million US military service personnel have been deployed to Iraq and Afghanistan under the auspices of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), respectively.[1] Of those, one in five, or more than 300,000, are currently suffering from diagnosable combat-stress related psychological injuries including, most significantly, Posttraumatic Stress Disorder (PTSD).[2]

All indications are that the mental health toll of the current conflicts on US troops will only increase. For one thing, these conflicts are characterized by features thought to contribute to high levels of deployment stress, including: longer and more frequent deployments with shorter periods of rest in between,[3] the fact that the conflicts are being waged largely by a force of activated reservists,[4] the particularly stressful nature of everyday activity in counterinsurgency conflicts, and the fact that, because of improvements in forward medicine, protective gear, and evacuation procedures, unprecedented numbers of soldiers are surviving their wounds.[5] For another thing, evidence from the last four major US military operations shows that PTSD rates continue to rise steadily in the months and years following return from combat, suggesting that the full burden of deployment stress cannot be measured in the short term.[6]

There is no question that the current rate of mental health problems amongst military personnel presents enormous challenges to both the US military's medical system and

the societies into which soldiers must reintegrate upon return from combat: recent figures put the PTSD- and major depression-related costs to society from OEF and OIF at between $4.0 and $6.2 billion over two years.[7] But of course those bearing the brunt of the costs are the soldiers and their families who live first hand with the psychological wounds of battle.[8] PTSD is particularly devastating: many military men and women return from war zones only to find themselves living in a personal hell of unpredictable flashbacks, constant arousal and vigilance, and a debilitating desire to avoid any reminders of traumatic events that might trigger reactions of rage and violence. These symptoms transform everyday activities such as driving a car or sitting in a movie theatre into terrifying moments of life and death struggle back on the battlefield, and for many make maintaining ordinary relationships and holding down jobs nearly impossible. Untreated veterans are at high risk for becoming homeless, perpetrating spousal abuse, and committing crime.[9] Many will develop other debilitating psychological problems as a result of their struggles with posttraumatic stress, including depression, anxiety, and substance abuse; tragically, some will see suicide as the only way to escape their pain.[10]

Against this backdrop, research suggesting that beta-blockers, a common class of drugs traditionally used for the treatment of heart conditions, might be able to *prevent* the onset of PTSD is drawing much interest and excitement. Indeed, the military has already invested in clinical trials of beta-blockers.[11] If we could prevent the devastating psychological wounds of war from developing in those who fight on our behalf, and for a fraction of the cost of current treatment options, is there any reason *not* to do so?

I want to urge caution against accepting too quickly the use of beta-blockers for dealing with the psychological injuries that combat experience can wreak.[12] Beta-blockers raise ethical questions that reach far beyond issues of efficacy, safety, and fair distribution as a potential preventive for the psychic devastation of PTSD.[13] These questions arise because of the particular way in which beta-blockers appear to work, namely, by disrupting the formation of the emotionally disturbing memories that would typically occur in the wake of traumatic events, and that in some people will subsequently manifest themselves in pathological ways as PTSD. To explore the ethical significance of this use of beta-blockers, I focus in this paper on one particular dimension of soldiers' experiences: their *perpetration* of other-directed violence. I argue that some of the emotional memories potentially blunted by beta-blockers play important roles in the recovery of the *moral* aspects of soldiers' selves damaged by experiences of perpetrating combat-related violence, and, therefore, that the use of beta-blockers may have moral costs. More specifically, I argue that perpetrators' emotional memories may not only underwrite successful gestures of reparation toward those harmed by their actions, but may also enable the achievement by perpetrators of what I call a state of *grace*, that is, a state of quiet acceptance of their involvement in bringing about terrible outcomes.

I want to be very clear that I am *not* suggesting that PTSD itself has moral value, or that it is morally better for soldiers to suffer with PTSD after perpetrating violence than not to. Nothing I say implies that we should not provide psychological help to soldier-perpetrators at risk for PTSD, or continue to aggressively pursue new methods of PTSD treatment and, indeed, prevention. My point, rather, is that, as an intervention that works by interfering with the laying down of emotional memories that may contribute to the recovery of moral selves in the aftermath of the perpetration of traumatic violence, beta-blocker use comes with identifiable moral risks. Whether or not these risks ultimately trump considerations that support the use of beta-blockers, recognizing what is

morally at stake in their use is critically important, both for decision makers in policy and clinical settings who will face mounting pressures to make available interventions like beta-blockers and will need conceptual tools to make ethically sound decisions about whether and when to do so, and for individual soldiers who may soon be presented with the opportunity to take beta-blockers and who should know at what cost beta-blockers may buy their psychological well-being.

I proceed as follows. In Section 2, I identify some common emotional responses of soldiers to the acts of perpetration in which they are most frequently implicated, and argue that such responses are often morally valuable. In Section 3, I summarize recent neuroscientific findings about the connections between emotional memories, PTSD, and beta-blockers, and describe the likely consequences of taking beta-blockers for soldier-perpetrators' emotional responses. In the fourth section, I show how such consequences may put at risk soldiers' recovery from the moral dimensions of traumatic injury. In the fifth and final section, I consider some complicating factors for my argument and present three conclusions about the ethical propriety of making beta-blockers available to soldier-perpetrators.

2. The Solider as Perpetrator[14]

There is no doubt that during wartime, soldiers can be traumatized by acts of abusive violence of which they themselves are targets and by atrocities they witness. But one lesson from the literature on combat trauma is that soldiers also are at risk of being traumatized by their *perpetration* of violence against others.[15] In studies of Vietnam veterans, for instance, the risk of developing PTSD and severity of PTSD symptoms was positively correlated with how often soldiers were in high-intensity combat situations involving hostile engagement with the enemy, and was highest of all amongst those who participated in acts of atrocity.[16]

The 'perpetrator' I have in mind, however, is not the perpetrator of atrocities such as indiscriminately killing innocents, torturing prisoners of war, or mutilating corpses, acts that are clear violations not only of the rules of engagement in war, but of the Geneva Conventions, the body of international laws regulating the conduct of armed conflict.[17] For one thing, I am interested ultimately in questions concerning appropriate policies regarding the use of beta-blockers to deal with the psychological costs of active combat service; such policies are not, presumably, going to be aimed at those who perpetrate atrocities (even if such perpetrators might end up benefiting from them). For another thing, although, as events like the Haditha massacre make all too clear, atrocities have occurred in the current conflicts, the majority of combat personnel are likely not involved in the perpetration of abusive violence and violations of rules of war.[18]

But they do kill, wound, and maim. And in the context of counterinsurgency conflicts, where the line between combatant and noncombatant can be blurry, and where soldiers must act under conditions of extreme stress, continual threat, and non-optimal information, they sometimes kill and wound innocents, and even comrades in arms. At military vehicle checkpoints, for instance, soldiers must make split-second decisions about whether or not to open fire at vehicles that do not stop for identity checks, knowing both that combatants often disguise themselves as civilians and that people may for a variety of reasons — from distraction to drunkenness to fear — fail to slow down or

stop.[19] No matter how vigilant they are about trying to discriminate combatant from noncombatant, soldiers know that they will sometimes end up killing innocents. They will also sometimes kill innocents in the process of hitting military targets who may intentionally use civilians as distractions or shields — killing that in military terms is often referred to as 'collateral damage'.[20] And sometimes soldiers will be involved in friendly-fire incidents that result in the killing or wounding of their fellow soldiers. Along with the intentional killing of enemy combatants, these are the sorts of violence with which the ordinary soldier is caught up in the day-to-day of the current conflicts. And they are just the sorts of activities that can have, for the ordinary soldier, grave psychological costs. The anguish with which soldiers return from the combat theatre — the guilt and shame they report feeling, as well the depression and PTSD they present with at military hospitals and psychologists' offices — are evidence that soldiers are haunted by memories not just of what they have seen, but *of what they have done*.[21]

That said, in most of the scenarios of perpetration with which I am concerned, we would be unlikely to condemn or *blame* perpetrators for what they have done.[22] Without wading too deeply into debates about the metaphysical conditions underwriting proper attributions of responsibility, it seems clear that, whatever one's account, the conditions for moral responsibility *in the sense of genuine moral culpability for wrongdoing*, and hence for *moral blameworthiness*, are not met in the combat scenarios I am envisioning.[23] In the case of friendly-fire accidents, soldiers are the victims of dumb bad luck. In the cases of killing innocents as a side effect of hitting military targets, they undertake actions that, because of incomplete information or just the tragic circumstances of war, turn out otherwise than foreseen. Where such outcomes *are* reasonably foreseen, either on a particular occasion or, as with military checkpoints, as a general possibility, these outcomes are nevertheless unintended and often unavoidable. Finally, in the case of intentionally killing enemy combatants, what soldiers do is morally justified in the context of (just) war; it is not, at least arguably, *wrongdoing* at all.[24] In other words, the conditions in which soldiers often act entail that although they *harm* others, they are not culpably responsible for wrongdoing. Third- or second-personal moral condemnation may seem especially out of place considering that soldiers serve on others' behalf.[25] But of course the moral significance of what we do is not given solely by whether or not *blame* for it from others is warranted. Even when our harmful actions are not the result of voluntary wrongdoing, they may nevertheless wreak moral damage that should at the very least be acknowledged, and, where possible, repaired. To that extent, certain first-personal reactions to what we do may be morally appropriate, and third-party responses other than moral *blame* may not be out of place.

What, then, are the responses of soldier-perpetrators to their own acts of perpetration? We should of course approach with caution *general* claims about the first-personal experiences of soldiers during the confusion and chaos of combat — as Dave Grossman highlights in his study of the psychological costs of killing in war, individual emotional responses to killing can be varied and extremely complex. But those, including Grossman, who have listened to the voices of combat veterans find in them some common themes, one of which is that soldiers often respond to their own acts of killing with mixtures of revulsion or horror and guilt or remorse.[26] Here are a few of those voices:

> . . . so I shot him with a .45 and felt remorse and shame. And I can remember whispering foolishly, 'I'm sorry' and then just throwing up . . . I threw up over myself. It was a betrayal of what I'd been taught as a child.[27]

> This was the first time I had shot anybody and when things quieted down I went and looked at the German I knew I had shot. I remember thinking he looked old enough to have a family, and I felt very sorry.[28]

> I sobbed . . . I'm sorry . . . Then I threw up all over myself.[29]

And in her study of the history of killing in 20th century warfare, Joanna Bourke tells of a 23-year-old World War II infantryman who 'took emotional refuge in hysteria after stabbing an enemy soldier with his bayonet: "that bothered me," he stammered, "my father taught me never to kill".'[30] The themes of being disgusted and getting sick, feeling sorry, and crying after a kill are echoed in many soldier's stories.[31] While I make no claim to these being universal emotional experiences, or to there being the only emotions common amongst soldiers who perpetrate violence, these particular emotions appear often enough in soldier's own narratives of killing to merit our focus in what follows.

Soldier's experiences of emotions such as horror, revulsion, and disgust in response to their own acts of violence are not only unsurprising and understandable, they are often morally appropriate. After all, killing or wounding another typically involves *crossing moral boundaries*. This boundary crossing is most obvious in cases where soldiers harm innocents, violating standing norms governing the community of persons of which they are a part. Our moral standards tell us that until we have reason to do otherwise, our default position should be to treat others, all others, with the dignity and respect they deserve simply as persons. In killing innocents, no matter how nonculpably, one runs afoul of those standards. Soldier-perpetrators' feelings of revulsion or horror upon killing or wounding innocents reveal a morally appropriate underlying commitment to the idea that harming or killing another human being is something that one does not do.[32]

But even in the case of killing enemy combatants, soldiers' reactions of horror, disgust, and revulsion reflect an admirable attachment to moral boundaries. Soldiers often speak of their first enemy kill as a kind of initiation into a 'cult of war', a moment of losing innocence from which there is no moral return.[33] While the first kill is often accompanied by intense feelings of shock and horror — Tim O'Brien devotes a chapter of his Vietnam memoir *The Things they Carried* to a haunting depiction of his first enemy kill — after that, killing the enemy often becomes somewhat easier, soldiers report, at least in the moment.[34] On the one hand, this seems both practically necessary and morally appropriate. After all, a debilitating aversion to killing will be counterproductive to the goals of military combat. And as part of a military force mandated to defend national or humanitarian interests against the threats posed by a hostile enemy, killing or wounding the enemy is precisely what one is being called upon to do. Ordinary moral norms do not apply here; the moral boundaries between acceptable and unacceptable ways of treating others are set in a different place on the battlefield than they are back home peacetime. As members of the military moral community, the 'cult of war', soldiers need not feel disturbed by their (just) acts of killing.

But on the other hand, I want to suggest, soldiers' feelings of revulsion, horror, and disgust at killing enemy combatants reveal their attachment to the values of the human community of which they are, after all, still a part, and also at the same time reveal an *ambivalence* about their entry into the cult of war. When they respond with horror to their own acts of killing, soldier-perpetrators show that they continue to see those acts through

the lens of their membership in, and commitment to, a community whose norms erect a moral boundary between killing and not killing. By the same token, then, their emotional responses also signal resistance to, or at least a struggle with, their full initiation or inculcation into the *military* community whose norms hold that some killings are *not* moral transgressions, but are just part of what one does. Feelings of horror and revulsion at committing even justified acts of killing enemy combatants, then, might seem to reaffirm, in morally admirable ways, that soldier-perpetrators are and remain *persons* first and foremost.[35] Indeed, we might be worried about the moral character of the soldier *not* prone to such feelings when he kills. And we are also relieved to learn that preparing soldiers to readily kill in combat has historically proven extraordinarily difficult to do.[36]

What of soldiers-perpetrators' feelings of guilt?[37] In one sense guilt clearly seems morally inappropriate in the circumstances under discussion. If soldiers have done nothing *wrong*, either because their actions turned out otherwise than intended or foreseen, or because their intended acts do not count in their contexts as moral transgressions, then the feelings of self-blame involved in guilt seem wholly out of place. But even if soldier-perpetrators' feelings of guilt overreach their moral culpability, I think we recognize in their proneness to guilt not only a perfectly familiar and understandable first-personal responses to having been unable to avoid doing serious harm to another, but once again something morally admirable.[38]

Consider that, the particular weightiness of feelings of guilt seems due to guilt's involving self-criticism for having done wrong by another and a sense that one now *owes* something to the other in order to make things right — confession, apology, or other attempts at compensation or reparation for what one has done.[39] Some have suggested, in fact, that central to our feelings of guilt is our sense that we have betrayed valued relationships with others.[40] A proneness to feeling guilt, then, seems to reveal an underlying commitment to seeing the other as someone who *can* be wronged or betrayed, which, in turn, presupposes some sense of a prior relationship or connectedness with her.[41] Regardless of whether they overstep genuine moral culpability, feelings of guilt about killing or wounding others in war display an admirable sense of solidarity with those one harms, a commitment to the shared humanity between oneself and one's victim, and a refusal to let go of that commitment even in the context of combat. Identification with the humanity in one's victim may be especially morally admirable when the victim is the enemy, one it might be all too easy to dehumanize.[42] To be sure, we may want to help soldiers ultimately overcome their painful feelings of guilt for actions they had no real choice about performing or which were, in their time and place, morally justified. I will suggest below that overcoming such feelings may be part of full moral recovery form the injuries of combat trauma. But the point remains: to the extent that soldiers who kill and wound in war do struggle with feelings of guilt, such feelings reveal an admirable 'moral posture' on their part toward the world and those who share it.[43]

In sum, the tendency of soldiers to react with strong negative emotions of horror, revulsion, disgust, and guilt to their perpetration of destructive violence against others often expresses a morally admirable sense of connection with those whom, given their circumstances, they may be unable to avoid harming or killing as well as with their own humanity. In the next section I explore what beta-blockers seem to do to perpetrators' emotional responses.

3. Emotional Memories, PTSD, and Beta-blockers

It is widely believed that PTSD is an extreme version of the normal reaction to stress.[44] This hypothesis is supported by the fact that, in the immediate aftermath of trauma, most people will display symptoms characteristic of PTSD, including agitation, dissociation, intrusive memories, nightmares, and exaggerated startle responses.[45] The majority of them will recover spontaneously, their symptoms disappearing over the following weeks and months, but between 15 and 25% will go on to develop chronic PTSD.[46]

We do not yet understand what accounts for these differences amongst people's responses to catastrophic stress, but one key may be differences in the degree of emotional arousal during stressful events. While we all know that we remember emotional events in our lives better than nonemotional ones, it was only recently confirmed that our emotions are a primary modulating influence during memory consolidation, the process whereby a memory goes from short to long term.[47] In the mid-1990s, a series of studies isolated the neurobiological mechanism involved in this process: stress hormones such as adrenaline released during emotional arousal, and via the mediation of neurotransmitters they stimulate, create a deeply engraved and vivid long-term memory for the arousing event.[48]

Traumatic events, by definition, involve extremely high levels of emotional arousal.[49] Indeed, the intensity of negative emotions experienced during traumatic events seems to be a predictor for the development of PTSD.[50] It is thought that the persistence and involuntary recurrence of disturbing traumatic memories and images characteristic of PTSD can be explained in terms of trauma-induced *overconsolidation* of emotional memories: in some people the experience of highly stressful events may result in extreme emotional arousal, a flood of stress hormones, and, consequently, the overstimulation of neurotransmitters that mediate memory formation.[51] The result is a particularly deeply engraved memory for the event that then manifests itself in pathological ways — the vivid, fragmentary recollections and flashbacks that characterize PTSD.[52]

During studies of emotional arousal's effects on memory formation, it was also discovered that propranolol, one of the class of drugs known as beta-blockers commonly used to treat cardiac arrhythmias and hypertension, seems to block the enhancing effects of emotional arousal on memory formation. When two groups of subjects were exposed to a story that included an emotionally disturbing scene, those in the placebo group recalled the disturbing scene with particular vividness and emotional arousal one week later, while those who took propranolol recalled the upsetting part of the story in less vivid detail and with flat emotional responses. By blocking the effects of the released adrenaline on memory-related neurotransmitters, beta-blockers seem to interfere with the typical translation of emotional arousal into enhanced memory for emotional events.[53] With respect to PTSD, the hypothesis is that beta-blockers, given within a short window of time before or after experiencing trauma, may be able to prevent overconsolidation of memories for those events and thereby mitigate the risk of developing PTSD. This hypothesis has borne out in several pilot studies, and is currently being tested in larger clinical trials, including some funded by the US military.[54]

What, then, is the salient effect of beta-blockers on the memories of soldier-perpetrators who take them? Taking beta-blockers either just before, during, or immediately after their acts of perpetration will not affect their emotional responsiveness in the moment of perpetration, such as the experiences of horror and revulsion we've dis-

cussed. Nor will beta-blockers cause *amnesia*: a soldier-perpetrator taking beta-blockers will not forget her upsetting acts of violence against others. Rather, beta-blockers seem to attenuate the emotional intensity of the memories for initially upsetting events, although whether they *erase* the emotional quality of the memories completely or merely *dampen* or *blunt* their emotional vividness remains at this point unclear. I will assume the weaker claim, namely, that beta-blockers dampen the emotional intensity of memories. If I am right in what follows about the moral risks that come with blunting emotional memories, then those risks will be even more serious if it turns out that beta-blockers erase the emotional tone of memories altogether.[55]

Consider that, often the experience of recalling upsetting events from our pasts brings us right back to the moment, emotionally — in remembering an embarrassing social *faux pas* I committed, for instance, I blush all over again; a memory of a difficult job interview starts your heart pounding and your palms sweating, even years later. Beta-blockers seem to interfere with the ways in which our emotional memories are *relived* emotionally. A soldier-perpetrator who takes beta-blockers will remember *that* the recalled events were upsetting. And he may very well feel pain now upon remembering what he did. But after taking beta-blockers, the experience of recollecting events that were extremely upsetting in the moment will likely be *less* emotionally fraught or arousing than it might otherwise have been, because how the original emotional memory has been encoded has been permanently affected.[56] After taking beta-blockers, a soldier-perpetrator who felt horror at his act of killing in the moment will likely be able to recall that act with more emotional equanimity than he otherwise would have.

What, then, might be morally at stake in using beta-blockers? Even if strong feelings of guilt, revulsion, and horror in the moment of perpetration reflect morally admirable outlooks on the world, what is the value of *remaining* in touch with such emotions through vivid emotional memories? If such memories are likely to contribute to long-term psychological devastation, including the development of PTSD, aren't we adding insult to injury if we ask soldiers to continue to be plagued by them? Given that the acts in response to which such emotions are often felt are not ones for which they are morally culpable, shouldn't we try to *assuage* soldiers' feelings of guilt and revulsion at what they have done, assuring them that it wasn't their fault, that they are not bad people? Indeed, insisting that they continue to be plagued by such emotions may seem not only to put them at risk for PTSD, but to encourage a morally inappropriate self-flagellation, a punishment that goes far beyond the crime.

Perhaps *our* responses to soldiers' reports of guilt and revulsion upon return from combat *should* involve reassurances that they are not to blame for what they have had to do and attempts to assuage their pain. That said, the challenge raised seems to presuppose that soldiers' long-term emotional anguish could only amount to a kind of moral punishment. Of course, if soldiers are not in fact morally to blame for their acts, then such punishment is undeserved and out of place. But this is to miss entirely another kind of moral role for our emotional memories regarding our harmful acts, to which I now turn.

4. From Moral Injury to Moral Recovery

What the above challenge fails to appreciate is the extent to which the traumatic injuries faced by soldiers *qua* perpetrators of violence involve *moral* injuries to themselves, so that

recovery from trauma will, at least in part, be a matter of moral recovery.[57] In her seminal study of trauma, Judith Herman suggests that, 'Traumatic events call into question basic human relationships.'[58] Trauma theorists agree that part of what makes interpersonal violence so traumatic is the experience of a moral *breach*, a rupture in the predictable and trusted connections between individual and community, connections organized around and sustained by publicly accepted norms of behaviour to which we expect others to conform in their treatment of us, and to which we ourselves are beholden in our treatment of others. To the extent that our moral selves are formed and sustained within stable relationships to others and by our membership in communities governed by such norms of mutual regard, our moral selves are reconfigured by experiences of traumatic violence.[59]

For the *perpetrator* of violence, in particular, the moral self is threatened by the experience of herself as the *agent* or *cause* of moral rupture, by the understanding that it is her own actions that separate her from the moral community to which she is ordinarily connected, and hence from her moral identity. Herman captures this feeling of moral separation and isolation in the combat veteran:

> The veteran is isolated not only by the images of the horror that he has witnessed and perpetrated, but also by his special status into the cult of war. He imagines that no civilian, certainly no woman or child, can comprehend his confrontation with evil and death. He views the civilian with a mixture of idealization and contempt; she is at once innocent and ignorant. He views himself by contrast, as at once superior and defiled. He has violated the taboo of murder.[60]

There seem, then, to be two dimensions of the moral injury to soldiers that results from their perpetrating violence: first, the perceived separation from a moral community organized around norms that, for instance, condemn killing, harming innocents, and approaching others with the default posture of suspicion, and, second, the perception of themselves as morally corrupt, as no longer morally good or decent, precisely because the separation from community has come about through their own evil deeds.[61] Recovery from such injuries will also have two dimensions. It will involve, first, reintegrating into the moral community from which they feel separated by their acts, and, second, coming to once against see themselves as morally decent. In the remainder of this section, I fill in the picture of moral recovery for soldier-perpetrators, explain how emotional memories serve such recovery, and highlight the risks to moral recovery posed by beta-blockers.

4.1. Making Amends and Reparative Gestures

For soldier-perpetrators, reintegrating into moral communities may sometimes involve making amends to those they have harmed. It is a familiar point that, when harm to others comes about through our actions, even when we are not at fault, is may nevertheless be morally appropriate for us to make some attempts at reparation. Given a lack of moral fault, such reparations may not be appropriately *demanded* of us by others, including those harmed. Nevertheless, we think it proper, for example, that the unfortunate truck driver who through no fault of his own hits the child who runs in front of his truck at the very least apologize to the parents of the child, and, depending on other circumstances, perhaps offer other sorts of compensation as well.[62]

Even where concrete reparative gestures are unavailable to the perpetrator, the *feelings* of readiness to make reparations involved in first-personal responses such as regret, remorse, and guilt — feelings, that is, of wanting or needing to make amends — may themselves help to repair damaged relations with others. To the extent such feelings are expressed, they signal to those harmed that one did not mean them harm and that one wholeheartedly wishes both that one could have avoided doing them harm and that there was something one could do to make things better. (Of course, just how reparative of damaged relationships such feelings end up being will depend on how they are perceived and received by those harmed.)

Reparative gestures and attitudes may be particularly relevant for soldier-perpetrators who have harmed innocents, for example, killed a teenager mistaken for an insurgent at a military checkpoint. In such cases, gestures of moral reparation such as offering apologies, paying respects to the families of those who lost their lives, returning to war zones to visit memorials honouring the dead, or even helping to rebuild homes destroyed in fighting, as well as the feeling of readiness to undertake such reparative responses, can help to restore the bonds of common humanity between perpetrator and victim that were damaged during the unfortunate circumstances of war. And to the extent that they do, they may also help soldiers come to once again see themselves as morally decent.

4.2. The State of Grace

But making amends to others is not all there is to recovery from the moral injuries of perpetrating violence. Indeed, in the context of war there will often be no place for making meaningful amends; no 'reconstructive address' is appropriate or even possible, because, for instance, there is no one to receive such gestures, or from others' perspectives, one has done nothing to make amends for. I want to propose that in the sorts of perpetration scenarios I have been discussing, moral recovery from the injuries that perpetrating violence can wreak, whether or not it also involves making concrete reparations to others, is first and foremost a *personal* matter, a matter of the soldier-perpetrator coming to state of graceful self-acceptance concerning what she has done.[63]

To begin to see the state I have in mind, consider two hypothetical individuals, Jane and Seth, each of whom, on their way home from a late night at work, and through no fault of her own, runs over and kills a homeless man who has fallen asleep in the middle of the street. Jane's response to the situation is the following: 'Look, what happened is a shame, but it's not my fault. My involvement was just happenstance. I certainly don't see any reason *I* should feel *especially bad* about what's happened to this man.' And with that, she washes her hands of the whole thing. Seth, on the other hand, blames himself for killing the man. He is wracked with feelings of guilt; he continually fantasizes about how he might have been able to avoid hitting the man and searches obsessively for ways to make amends.

Although both of these responses may be natural and understandable attempts to deal with a terrible situation, neither response is *morally* ideal. Jane's attitude strikes us as morally immature or flippant in its focus on the moral relevance of *fault* alone. Her response is troubling because it suggests that it is of no special concern to her how others are faring, so long as how they are faring is not on her moral tab, as it were. She just does not seem *bothered* enough by what she has done to indicate that she is particularly invested in others' well being. Seth's self-critical and obsessive focus on his control over

the outcome and the possibility of making amends certainly strikes us as more admirable than Jane's denial, to the degree that it indicates that he *does* care about what has come about through him. Nevertheless, his response ultimately seems to be a misguided and possibly naïve attempt to avoid the uncomfortable truth that sometimes there is just nothing we can do to avoid doing bad or to then 'make things right'. To the extent that he continues to berate himself, his response may in fact start to seem like 'exhibitionist contrition', an unseemly attempt to seek reassurance from others that his hands are morally clean.[64] We would hope for Jane and Seth both that they move beyond their respective morally immature responses to their involvement in what's happened.

But move beyond them to what? Consider now Ryan, who is in the same circumstances as Jane and Seth. Ryan neither brushes off, nor blames himself for, what happened. Although he would feel *worse* had it been his fault, the fact that it was *not* his fault does not take away all feelings of pain about his involvement in the horrible outcome; but neither is he crippled by that pain, or by obsessive thoughts about how he might make things right. Indeed, he likely feels what philosophers have identified as 'agent-regret', that special sort of pain we are prone to feel when we have, through no fault of our own, brought about an evil and sincerely wish we could have done otherwise.[65] By refusing to deny, hide from, or minimize the badness of what happened or his involvement in bringing it about, but also not exaggerating his degree of control over the outcome or his ability to make things better, Ryan displays a mature attitude of 'acceptance, non-aggrandized daily "living with" ' what he has done 'unsupported by fantasies of overcoming or restitution'; he is in a state of what Margaret Urban Walker calls *grace*.[66]

To be sure, we might be suspicious of a Ryan who arrives too quickly or cleanly at a state of grace, who doesn't struggle first with feelings of guilt and fantasies about what he could have done differently, who finds it all too easy to just accept and live with what he's done. Indeed, perhaps grace can often be achieved only as a kind of *resolution* to a quite painful process of coming to grips with what has happened through one's actions, a process that is itself of moral value.[67] But we need not take up the issue of precisely *how* one best achieves a state of grace in order to see the moral value of that achievement.

Indeed, I want to suggest that achieving a state of graceful acceptance of their unfortunate but ultimately unavoidable involvement in bad outcomes is the moral therapeutic endpoint we should encourage and foster in soldier-perpetrators who need to recover from the moral injuries that come with nonculpable perpetration of traumatic violence. As a state of living with what they have done involving neither denial nor fantasies of restitution, grace displays and expresses soldier-perpetrators' acknowledgment of both the *seriousness* of the harm they have caused and of *the limits of their control* in bringing about that harm.[68] Achieving a state of grace — and it will indeed be an achievement — thereby serves the twin goals of moral recovery, namely, reconnecting with moral communities and with their own moral decency.

Returning to our hypothetical scenario, consider that, while Jane seems inadequately disturbed by what has come about through her actions, Ryan is genuinely *pained* by the knowledge of what he has done; his response therefore displays that he cares about what has happened to the homeless man because of him. To the extent that being in a state of grace with respect to their acts of violence involves their living with the painful knowledge that those acts have done irreparable harm to others, soldier-perpetrators' achieving such a state displays a commitment to the value of those others' well being that could not be expressed in the soldier-perpetrators' actions. Achieving a state of grace may

thereby help to reaffirm to soldier-perpetrators themselves that they are fundamentally morally good or decent: it indicates that they are still genuinely committed to the norms of mutual regard around which moral communities are organized, and thereby fosters soldier-perpetrators' capacities to see themselves as reintegrated into moral communities. After all, when we feel separated from moral communities by acts that we experience as transgressing its shared norms and values, reintegrating into those communities will often be a matter of our *expressively* recommitting to, or reasserting of our commitment to, those norms and values.

But while the achievement of grace involves a refusal to hide from one's involvement in horrible outcomes, it also requires a clear grasp of the limits of one's agency, of what was and was not within one's control. In contrast to Seth's self-blame, Ryan's attitude about what happened indicates a clear understanding that it is just not in his power to make amends for what was ultimately not in his control, but a tragic accident. If, as I have suggested, moral recovery involves coming to once again see oneself as morally decent when such decency has, in one's own eyes at least, been called into question by what one has done, then for soldiers caught up in killing and harming others in morally nonculpable ways, coming to once again see themselves as morally decent will likely require their coming to understand that they could not realistically have done otherwise than they did in their circumstances. The state of grace is partly constituted by just such an understanding.

4.3. Emotional Memories and Moral Recovery

To begin to see how *emotional memories* contribute to the various dimensions of moral recovery I have canvassed, we need first to understand how they contribute to our moral understanding of our past actions. Consider that, our emotional responses are ways of being *affected*, or *moved*, by people and situations that we encounter. As such, our emotions are intimately tied to our first-personal experiences of such situations, or of what it is like to interact with such people. Our emotional responses to the world are one central way we experience ourselves as implicated in what happens, or *inhabit* our position in the world at any given moment.[69] The emotional reactions such as horror soldiers experience while committing acts of violence will then contribute to their full grasp of their *role* in what was done. Their emotional memories, in turn, will be important for recalling their acts *as their own.*

As ways of being affected by situations and people we encounter, emotions also register and signal the *importance* those occasions have for us. When I feel outrage in response to a news report about the actions of a brutal dictator against his citizens, for instance, I am not merely seeing the injustice in the situation; rather, what I am seeing is resonating with me in a way that indicates that I see it as significant or important. It signals that I appreciate that something of *value* is at stake.[70] If our emotions register evaluative significance in this way, then having memories of what it felt like to perpetrate acts of violence — one's feelings of disgust or revulsion as one pulled the trigger, for instance — will be important for understanding the full significance of what we have done. Together, these two points suggest that our emotional memories are one central way in which we continue to appreciate the *full significance* of our acts *as* our acts.

We can now see how emotional memories serve both the aspects of moral recovery, namely, making amends to others where appropriate, and the personal achievement of

grace. First, emotional memories help to underwrite successful gestures and attitudes of moral reparation aimed at others. To see why, consider how important an apologizer's feelings of pain at what she has done seem to be to making a successful apology. Without such feelings, the apology fails to be even potentially reparative, precisely because it is in doubt whether the apologizer is appreciating with the right degree of salience the wrong or harm she has done to another. I want to suggest that, to the extent that soldier-perpetrators emotionally-laden memories of their acts of perpetrating violence against others embody a full appreciation of their *role* in those acts and those acts' *significance*, those memories might be important for ensuring that the reparative gestures they now undertake — apologies, compensatory actions, expressions of remorse — make *full contact* with the acts for which they are supposed to be making amends, and therefore are fully reparative.

Second, soldier-perpetrators' emotional memories serve the reparative endpoint of grace. If, as I have suggested, responses of guilt, horror, and revulsion during acts of violence that soldiers were not in a position to make choices about committing signal that they nevertheless see themselves in the act *as* transgressing norms and values that they hold; and if recalling those emotions means retaining a lived understanding of the significance of those acts; remaining connected through memory to such emotions will itself be a way of expressively reaffirming their commitment to the norms and values that seemed to be threatened by their actions.[71] Indeed, remaining in touch with one's emotional responses through memory signals that one has *all along* been firmly attached to those norms and values, and therefore that one has never really been separated from the community.[72] To the extent that perpetrators' emotional memories express a continuous commitment to the norms with respect to which moral community membership is defined, they symbolically return soldiers to the fold of those communities from which their *acts* may have seemed, at least for a time, to separate them.

Similarly, emotional memories of the harm one has done can reaffirm the capacity to see oneself as fundamentally good. If part of the traumatic injury that comes with perpetration is the feeling that one has become detached from one's own humanity by what one has done — captured in thoughts like 'I'm now a killer', 'I've harmed children' — then the memories of the painful emotions felt during perpetration will be a vivid reminder for perpetrators that they did *not* in fact shed their moral identities in the moment in which they killed or wounded another. This sort of affirmation of their membership in the moral community of persons may be particularly important for soldiers who have experienced their own acts as signs that they have become part of that *other* moral community I have referred to as the 'cult of war.'[73] Indeed, as Joanna Bourke writes, even as superior officers try to minimize soldiers' feelings of guilt in order to keep up troop morale, soldiers report wanting to retain their feelings of guilt as an 'endorsement of their essential goodness', what makes them 'human'.[74] Somewhat paradoxically, living with painful memories of acts they have committed seems to help heal their damaged selves. What these two points suggest is that having emotional memories of perpetrating violence may itself be a constitutive element of the therapeutic endpoint of grace.

We can now see what the moral risks of taking beta-blockers might be. To the extent that beta-blockers blunt the emotional impact of soldier-perpetrators' memories of their past acts of violence against others, their use puts at risk soldier-perpetrators' capacity to appreciate the moral significance of their past acts of violence in ways that serve the end

of successful moral recovery. Dampening soldiers' emotional memories of perpetration with beta-blockers amounts to a kind of *distancing* of soldier-perpetrators from their own acts; the more blunted their emotional memories of committing an act of violence are, the more their appreciation of what they did becomes like the recognition of what someone else did. The threat to recovery is raised not just because were perpetrators to take beta-blockers, they might no longer have the same *impetus* to undertake gestures of repair or work to the endpoint of grace. That may very well be case — after all, one of the hallmarks of emotions is their motivational force. But the threat is deeper, for, as I have suggested, the kind of understanding of our past acts that our emotional memories underwrite play a more constitutive role in recovery from moral injury than merely providing the motivation to undertake appropriate steps of repair: first, they underwrite successful gestures of repair for such acts, such as apologies and expressions of remorse; and second, they directly serve the moral therapeutic endpoint of grace by expressing soldiers' consistent commitments to norms and values that could not be upheld in their actions, and providing evidence of soldiers' decency in the face of acts which seem to threaten it.

I am suggesting, then, that for soldiers struggling to find their ways back into moral communities and families, and back to themselves, after participation in the horrors of war, their emotional memories of what they have done seem to provide particularly powerful, and possibly irreplaceable, means of reforging connections and healing moral wounds. Dampening soldiers' emotional memories by giving them beta-blockers potentially inhibits emotional memories' abilities to do such moral work, and therefore puts soldiers' moral recovery at risk. To the extent that soldiers experience painful emotional responses to their acts of perpetration, then, such responses might very well be worth holding on to in memory.

It might be objected here that what I have said about the therapeutic endpoint of grace actually implies that some of the emotional responses common in soldier-perpetrators — most notably guilt — are precisely *not* worth holding onto. Regardless of whether guilt feelings display morally admirable tendencies, the objection goes, if our interest is in soldiers' moral *recovery*, then the value of feeling guilt is far outweighed by the value of having an accurate understanding of what they are genuinely culpable for.[75] Indeed, we have seen that such an understanding is precisely part of grace. Wouldn't it be better for moral health if we could from the get-go dampen at least soldiers' agonizing feelings of guilt?[76]

While successful moral recovery for soldier-perpetrators will involve coming to a clearer and more accurate understanding of the ways in which their agency was constrained by their circumstances, and will, therefore, involve *coming to* a point of no longer feeling guilty about that which they would not have had to do had a moment of decision not been forced upon them by their circumstances,[77] the claim that we therefore should immediately embrace an intervention that dampens guilt from the get-go is misguided. As a response to soldier-perpetrators' feelings of guilt at their nonculpable acts of harming others, the use of beta-blockers threatens to substitute in the soldier-perpetrator an attitude like Jane's. When a soldier-perpetrator's memories of his guilty feelings about what he did are blunted, he may, like Jane, no longer feel particularly pained by his part in harming another. And feeling too little pain puts the solder at risk of *underestimating* the seriousness of what happened through him, of minimizing or even denying his involvement in the terrible outcomes that he has

helped to bring about. The moral risk is that it may be more *difficult* to arrive at a morally healthy state of grace from such a starting point than from a staring point of overwrought and misplaced guilt like Seth's. Transforming a person's pain about what she's done from self-blaming guilt into less self-critical forms such as agent-regret, while not necessarily a simple endeavour, is nevertheless a familiar one, part of what we try to accomplish in therapeutic but also everyday contexts when we reassure those who have been caught up in doing terrible things that they are not to blame, that they are still good people, and the like. Bringing someone to a morally appropriate and mature appreciation of the significance of what she has done from a place where she feels little or no pain about her involvement, indeed seems quite unperturbed by it, may involve much more, and much more difficult, moral psychological work. So this is not to say that the soldier-perpetrator who took beta-blockers *could not* achieve grace, much as we do not deny that Jane *could* come to have an attitude like Ryan's. But beta-blockers may pose serious obstacles to such an achievement.

Before concluding this section, I want to make clear that I am not claiming that remaining in touch with emotional experiences of one's perpetration of violence is *all there is* to moral recovery: reintegration into moral communities and reconnection to the moral selves sustained by them will of course involve the *community's* responses to the perpetrator as well. Indeed, the trauma literature emphasizes the central importance to healing of the 'communalization' of trauma, that is, of community *uptake* of the trauma victim's efforts at truth-telling, reparation-making, and reconciliation.[78] This requires communities to listen non-judgmentally to victims' trauma narratives, and not to condemn them for, or deny, their traumatic experiences, even when those experiences are hard to accept. Proper communalization might also demand that the community itself undergo processes of moral growth and healing, such as coming to a more enlightened conception of its moral standards and expectations given the realities of the wars it asks its young men and women to fight.[79] In fact, without such community uptake, not only will recovery of both perpetrator and community not take place, but also there is grave risk of retraumatizing the perpetrator.[80] My focus on the importance to moral healing of the emotional memories of those traumatized is in no way meant to deny the social dimensions of trauma recovery.

Taking beta-blockers may not foreclose possibilities of moral repair in the soldier-perpetrator. But by dampening the emotional memories that underwrite full appreciation of their own acts of violence, they may very well hinder those memories' capacities for restoring moral selves. To the extent that soldier-perpetrators' moral selves are indeed damaged by involvement in traumatic violence, then, the use of beta-blockers comes with moral risks. In the final section, I crystallize my conclusions about the ethical propriety of the use of beta-blockers by military perpetrators at risk for developing PTSD.

5. An Objection and Three Conclusions

In response to what I have argued, it might be suggested that for the soldier who took beta-blockers to prevent the onset of PTSD, there would be no injury from which to recover in the first place; and surely an intervention that prevents injury altogether is better than one that merely treats existing injury. It should be clear that I think this objection reflects a misunderstanding. Beta-blockers might very well stave off the *psy-*

chological injury of perpetration-induced trauma — that is just what they are hypothesized to do. But the *moral* injury of traumatic violence remains regardless: one has in perpetrating violence caused harm to another; moral damage may have been done. To be sure, the degree of moral damage perpetrators do will vary. Some may be lucky enough not to have been implicated in killing innocents, for instance, and therefore may not have anything to make amends for. But even if they kill only enemy combatants, I have argued, soldier-perpetrators often struggle to resist damage to their moral identities that can result from committing acts perceived as initiating them into the cult of war. The fact that it is the experience of some kind of *moral* line-crossing — and the perceived isolation from others that follows — that leads to psychic injury in the first place does not mean that when the psychic injury is removed or prevented, so, thereby, is the moral injury. Preventing the development of PTSD down the line from traumatic events does not change those events or their moral significance. This brings into relief my core concern about beta-blockers, namely, that, as a method that seeks to simply erase the injury of PTSD, they threaten to bypass or leave altogether unaddressed the specifically moral injuries traumatic violence can wreak.

What is not at issue is whether taking beta-blockers to dampen painful emotional experiences from one's past will make one's life go qualitatively better. They likely *will* do that; whether or not one develops PTSD, negative emotional memories can, after all, be extremely painful to live with. The threat of living with such pain and of developing PTSD may provide people with extraordinarily good reasons to use beta-blockers, assuming they were found safe and effective for this use. My concern is that beta-blockers may make a life go qualitatively better *at the cost of other valuable ends we may have*. Morally mature persons are sometimes interested in pursuing ends, or having experiences, for reasons other than that they will make their lives more pleasant — we value, for instance, opportunities to display virtues such as grace and perseverance, to bear witness to the ugly realities of violence, and to make amends to those we have, even by our justified actions, hurt, or, when that is not possible, to atone and come to new places of self-acceptance and self-understanding. My first conclusion, then, is that to the extent that an individual might value ends other than making her life as qualitatively pleasant as it can be, her decision *not* to take available beta-blockers might be perfectly reasonable, even at the risk of developing PTSD.

My second conclusion quickly follows: even if the relevant considerations on balance favour making beta-blockers widely available as PTSD prophylaxis, the fact that individuals might have good reasons for not wanting to take beta-blockers speaks in favour of a societal commitment to *respecting* such reasons, and therefore, a commitment to continuing to explore and fund methods for dealing with combat-related PTSD that do not come with the sorts of moral risk we have discussed, methods that are more conducive to dealing directly with trauma's moral dimensions and, therefore, to fostering moral repair.

Consider in this vein the family of approaches known as Cognitive Behavioural Therapies (CBT), the current standard treatment for PTSD. The main idea behind CBT approaches is to activate and confront trauma memories in the safe setting of therapy with the goal of gradually transforming the dysfunctional aspects of those memories and reincorporating them in less threatening forms that no longer have the intrusive, timeless qualities of traumatic memories.[81] The therapeutic process often involves the patient constructing a painstakingly detailed narrative of the trauma experience, a process that

includes *re-experiencing* the emotions that accompanied the event. Re-experiencing trauma feelings allows exploration of the ways the traumatic event disrupted value and meaning systems one held, for instance, that one is good, or in control of one's own actions, or connected to others.[82] Once one has been able to articulate the trauma as a narrative, it becomes something that can be examined, parts of it challenged and given new meaning, or its meanings put into a new context. Over time, through the process of retelling the story of the trauma, the memory is transformed so that the remembered traumatic event no longer debilitates one's current life. One reaches the therapeutic endpoint when the appraisals embodied in traumatic emotions have been transformed from inaccurate evaluations of oneself and one's world in the present (e.g. *I'm not to be trusted; I'm tainted; I'm unworthy*) to *accurate* evaluations of the past as past (e.g. *I'm not to blame for what happened; I did the best that anyone could in the circumstances; I'm not a bad person*).

The point of this brief sketch of CBT is that while the goal of *all* methods of dealing with traumatic stress, CBT and beta-blockers included, is the end of psychic suffering from traumatic stress, some methods — those that attempt to confront, work through, and ultimately transform intense emotional memories, rather than blunt or erase them — may be more conducive to allowing emotional memories to do the *moral* work of repairing traumatic injuries, such as reaching a state of grace, than others. This is not to deny that CBT and other 'talk therapy' approaches have their own costs — indeed, they require a great deal of time and highly trained therapists; they can be extraordinarily painful and frustrating for both therapist and patient; and, in the military context especially, their success is often hampered by the enormous stigma still attached to psychotherapy.[83] It remains an open question whether, and when, these costs outweigh the moral costs of beta-blockers.

But once we acknowledge the importance of soldier-perpetrators' achieving moral health, and not just psychological health, after their participation in traumatic violence, and once we know what the endpoint of moral health looks like, we can also acknowledge that achieving that endpoint will likely be a complicated matter at times requiring different tools. To be sure, to this point I have focused exclusively on how perpetrator's emotional responses to, and emotional memories of, their acts of perpetration *positively* contribute to their reentering moral communities and reconstituting their moral selves. But the tragic reality is that PTSD often results in psychological lives so damaged as to effectively isolate those who suffer from it from moral communities and relationships, and from the norms by which they are sustained.[84] When the smell of his steak cooking triggers in the combat veteran vivid flashbacks of a firefight, throwing him into an abusive rage that sends his wife and children to the hospital with broken bones, talk of the *moral value* to him of his vivid emotional memories of that firefight, and of using those memories to achieve a state of grace, seems wildly out of place. In fact, *taking* beta-blockers to prevent such psychic devastation might in such a case be the only way to *protect* the soldier-perpetrator's moral capacities, enabling him to undertake the processes of moral recovery and repair — the work of reconnecting to relationships, communities, and his own moral decency — he would without them be unable to do. The soldier-perpetrator might need the sort of basic psychic stability and sense of safety that flashbacks and hyperarousal undermine before he can begin to deal with memories of horror and guilt for what he has done in ways that serve moral ends, and beta-blockers may turn out to be the most

effective way to achieve such stability. That is to say, sometimes there might be reasons not only of psychological health to take beta-blockers, but *moral* reasons as well.[85]

My point about the moral risks of using beta-blockers is relevant even here. In order for the soldier-perpetrator who takes beta-blockers to successfully morally recover, he will at the very least need to be aware of what has potentially been lost by his having taken beta-blockers, so that he can guard against the moral risks posed by such losses, most significantly, the risk of becoming detached from the moral significance of what he's done or whom he's done it to. Given that his emotional memories of his traumatic act are now likely blunted, he may not only need to be particularly vigilant about what might be missing for him; he might also need to make compensatory efforts, in a therapeutic setting perhaps, to reengage and reclaim his emotional responses to his acts, so that he can successfully deal with and recover from the moral injury those acts have wrought. My third conclusion, then, is that even if moral considerations sometimes speak in favour of the use of beta-blockers by soldier-perpetrators at risk for PTSD, knowing the moral risks that come with beta-blockers will be crucial for understanding what compensatory work might be required to achieve moral recovery.[86]

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NOTES

1 Terri Tanielian, 'Assessing combat exposure and post-traumatic stress disorder in troops and estimating the costs to society: Implications from the RAND Invisible Wounds of War Study'. Testimony before the Committee on Veteran's Affairs Subcommittee on Disability Assistance and Memorial Affairs, US House of Representatives, March 24, 2009. (www.rand.org/pubs/testimonies/2009/RAND_CT321.pdf; accessed 30 November, 2009).

2 Terri Tanielian & Lisa H. Jaycox, *Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery* (Santa Monica, CA: Rand Corporation, 2008), p. xxi. The US Army's own survey of combat soldiers several months after return from deployment found that 17% of active-duty troops and 25% of reservists had screened positive for symptoms of PTSD. See Lizette Alavarez, 'Nearly a fifth of war veterans report mental disorders, a private study finds', *New York Times* 18 April (2008) (http://www.nytimes.com/2008/04/18/us/18vets.html; accessed 15 June, 2008). And the Post-Deployment Health Assessment (PDHA) study by the Department of Defense (DoD), an ongoing effort to collect data from soldiers returning from deployment in Iraq, shows that 35% of soldiers returning from Iraq are reporting some sort of mental health concern three to six months post-deployment. See Charles W. Hoge, Jennifer L. Auchterlonie & Charles S. Milliken, 'Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan', *Journal of the American Medical Association* 295, 9 (2006): 1023–1032.

3 Tanielian & Jaycox op. cit., Ch. 2. The standard length of tours was increased from 12 to 15 months in 2007. In the face of personnel shortages and trouble meeting recruitment goals, some personnel are now returning for their third and fourth tours. See Lawrence Korb & Stephen Xenakis, 'Troop morale a casualty in Iraq', *New York Newsday* 2 February (2007): A43. The 2006 MHAT (Mental Health Advisory Team) Report on OIF personnel found that while combat exposure was the main determinant of a soldier's mental health status, multiple deployments and deployment length were both correlated with more acute stress and greater mental health problems amongst soldiers. See Office of the Surgeon Multinational Force-Iraq and Office the Surgeon General United States Army Medical Command, MHAT IV Report, 17 November, 2006, http://www.armymedicine.army.mil/reports/mhat/mhat_iv/mhat-iv.cfm; accessed 4 December, 2009. For a discussion of the Army's finding that PTSD risk, specifically, goes up with each tour, see Ann Scott Tyson, 'Repeat Iraq tours raise risk of PTSD, army Finds', *The Washington Post* 20 December (2006): A19.

4 Tanielian & Jaycox op. cit., p. 19. Data suggest that National Guard and Reserve personnel develop more post-deployment mental health problems than do regular active-duty troops. As civilians not embedded within a full-time military culture, Guardists and Reservists have fewer social supports in place before, during, and after combat duty. Furthermore, because they lead civilian lives, being called up for protracted duty in a dangerous war zone tends to be more disruptive of those lives; such deployment stress likely exacerbates traumatic stress. See Matthew J. Friedman, 'Veterans' mental health in the wake of war', *The New England Journal of Medicine* 352, 13 (2005): 1287–90.

5 For evidence that the wounded are at especially high risk for developing PTSD, see William E. Schlenger, Richard A. Kulka, John A. Fairbank, Richard L. Hough, B. Kathleen Jordan, Charles R. Marmar & Daniel S. Weiss, 'The prevalence of post-traumatic stress disorder in the Vietnam generation: A multimethod, multisource assessment of psychiatric disorder', *Journal of Traumatic Stress* 5,3 (1992): 333–63. The rate of soldiers surviving their wounds is 90% in Iraq, compared to 74% in Vietnam, and 70% in World War II. See Atul Gawande, 'Casualties of war — military care for the wounded from Iraq and Afghanistan', *New England Journal of Medicine* 351, 24 (2004): 2471–75. The death-to-injured ratio for the current conflict is the highest in US history, approximately 9-to-1, as compared to 3-to-1 in Vietnam and 2-to-1 in both World Wars. See Tanielian & Jaycox op cit.

6 A recent study comparing data from two DoD heath assessment screenings of OEF and OIF personnel, one immediately after deployment and the other three to six months later, found that rates of PTSD were much higher at the later date. See Charles S. Milliken, Jennifer L. Auchterlonie & Charles W. Hoge, 'Longitudinal assessment of mental health problems among active and reserve component soldiers returning from Iraq war', *Journal of the American Medical Association* 298, 18 (2007): 2141–2148. For evidence from Gulf War veterans suggesting that PTSD rates continued to rise steadily over the two years following return from combat duty, see Jessica D. Wolfe, Darin J. Erickson, Erica J. Sharkansky, Daniel W. King & Lynda A. King, 'Course and predictors of posttraumatic stress disorder among Gulf War veterans: A prospective analysis', *Journal of Consulting and Clinical Psychology* 67,4 (1999): 520–28. In addition, the largest and most comprehensive epidemiological study of Vietnam-era veterans, the 1988 National Vietnam Veterans Readjustment Study (NVVRS), found that over 15% of Vietnam veterans (472,000) met the diagnostic criteria for full-blown PTSD a full 15 years after the last soldier returned from Vietnam. See Robert Rosenheck & Alan Fontana, 'Changing patterns of care for war-related post-traumatic stress disorder at the department of veterans affairs medical centers: The use of performance data to guide program development', *Military Medicine* 164, 11 (1999): 795–802. For the suggestion that these estimates are too conservative, and indeed that the numbers may be as high as 54%, see Jonathan Shay, *Achilles in Vietnam* (New York: Scribner, 1994), p. 168 and Dave Grossman, *On Killing* (New York: Back Bay Books/Little Brown and Company, 1995), pp. 282–291.

7 Tanielian & Jaycox op. cit., Ch. 6. It has also become evident, perhaps most starkly with the exposure of the crisis at Walter Reed Army Medical Center in 2007, that the military medical system is being strained beyond its capacity to deal with these burdens.

8 For ease of reference, I will use 'soldiers' as the generic term for all military service personnel for ease of reference, although I recognize that technically only Army personnel are soldiers.

9 Linda Bilmes, 'Soldiers returning from Iraq and Afghanistan: The long term costs of providing veterans medical care and disability benefits', *Faculty Research Working Paper Series* (Cambridge, MA: Harvard University Kennedy School of Government, 2007).

10 For more on the rising rates of suicide amongst US military personnel, see Tyson op. cit.

11 US National Institutes of Health, Effect of propranolol on preventing post-traumatic stress disorder, http://clinicaltrials.gov/show/NCT00158262; accessed 25 June, 2009; Jim Giles, 'Beta-blockers tackle memories of horror', *Nature* 436,28 (2005): 448–49; Jonathan Moreno, *Mind Wars: Brain Research and National Defense* (Washington, DC: Dana Press, 2006), p. 130.

12 It should be clear, then, that my focus is on 'therapeutic' uses of beta-blockers in military populations, as opposed to potential 'enhancement' uses. I focus on the ethical implications of therapeutic uses alone for two reasons. The first is the fact that these uses have so far not garnered the same sort of philosophical attention as enhancement uses (for two recent and thoughtful discussions of the ethical implications of the use of performance enhancers, including beta-blockers, in the military, see Jessica Wolfendale, 'Performance-enhancing technologies and moral responsibility in the military', *American Journal of Bioethics* (*AJOB-Neuroscience*) 8, 2 (2008): 28–38, and Moreno op. cit.); I therefore take this paper to fill a lacuna in the literature. The second is because, though the line between therapeutic and enhancement uses of an intervention may sometimes be difficult to draw in practice, the questions raised by enhancement uses of

beta-blockers — for instance, whether the military or the government should use or permit such means to create 'better', because less hesitant or potentially remorseful, soldiers — are sufficiently different from those raised by its therapeutic use — for instance, whether providing means to ward off post-trauma psychological injury to those who have faced difficult combat situations comes with moral costs we should be wary of paying — to justify treating them separately. My thanks to an anonymous reviewer for this journal for urging me to clarify my reasons for focusing on the one context exclusively.

13 These are not the only ethical issues discussed with respect to the therapeutic uses of beta-blockers. For the concern that beta-blockers have the potential to over-medicalize trauma and therefore be exploited by the pharmaceutical industry for profit, for examples, see Michael Henry, Jennifer R. Fishman & Stuart J. Youngner, 'Propranolol and the prevention of post-traumatic stress disorder: Is it wrong to erase the 'sting' of bad memories?' *American Journal of Bioethics (AJOB-Neuroscience)* 7,9 (2007): 12–20.

14 While I have chosen in this paper to focus my discussion on members of the military who perpetrate violence, many of the concerns I raise here will likely apply as well to law enforcement officers, such as police, who have had to use lethal violence, but acted within the bounds of the law. Police and other law enforcement personnel also show higher rates of PTSD than the general public. See Charles R. Marmar, Shannon E. McCaslin, Thomas J. Metzler, Suzanne Best, Daniel S. Weiss, Jeffrey Fagan, Akiva Liberman, Nnamdi Pole, Christian Otte, Rachel Yehuda, David Mohr & Thomas Neylan, 'Predictors of posttraumatic stress in police and other first responders', *Annals of the New York Academy of Sciences* 1071 (2006): 1–18. I thank an anonymous reviewer from this journal for bringing this point to my attention.

15 Grossman op. cit.; Judith Herman, *Trauma and Recovery* (New York: Basic Books, 1992), Ch. 3; Rachel M. MacNair, *Perpetration-Induced Traumatic Stress: the Psychological Consequences of Killing* (London: Praeger, 2002).

16 Grossman op. cit., p. 283. For more on the correlation between PTSD rates and participation in combat and atrocities, see Herman, op. cit.; Naomi Breslau & Glenn C. Davis, 'Posttraumatic stress disorder: The etiologic specificity of wartime stressors', *American Journal of Psychiatry* 144,5 (1987): 578–83; Jean C. Beckham, Michelle E. Feldman & Angela C. Kirby, 'Atrocities exposure in Vietnam combat veterans with chronic posttraumatic stress disorder: Relationship to combat exposure, symptom severity, guilt, and interpersonal violence', *Journal of Traumatic Stress* 11,4 (1998): 777–85; and Rachel Yehuda, Steven M. Southwick & Earl L. Giller, 'Exposure to atrocities and severity of chronic posttraumatic stress disorder in Vietnam combat veterans', *The American Journal of Psychiatry* 149,3 (1992): 333–36.

17 I thank an anonymous reviewer for this journal for reminding me of this point.

18 On 19 November, 2005, US Marines murdered 24 Iraqi civilians in retaliation for the killing of one of their own in a roadside bombing, in the Iraqi town of Haditha. While such dramatic cases have been infrequent, the MHAT IV Report findings on 'Battlefield Ethics' suggest that the attitudes supporting such treatment of noncombatants is prevalent. The report found that less than one-half of soldiers and Marines believed that noncombatants should be treated with dignity and respect, and over a third believed that torture should be allowed to save the life of a comrade. Approximately 10% of soldiers and Marines reported mistreating an Iraqi noncombatant unnecessarily. Less than half said they would report a fellow unit member for unethical behavior. Soldiers and Marines who screened positive for a mental health problem (anxiety, depression, or acute stress) were, perhaps not surprisingly, twice as likely to engage in the mistreatment of Iraqi noncombatants, suggesting, perhaps, that the relationship between combat stress and the commission of atrocities is one of mutual reinforcement (See MHAT IV Report, 'Battlefield Ethics' section).

19 I owe my understanding of the complexity of military checkpoints to an early draft of Nancy Sherman, *The Untold War: Inside the Hearts, Minds, and Souls of Our Soldiers* (New York: W.W. Norton Press, 2010).

20 I do not mean to suggest that the distinction between combatants and noncombatants is always or even usually clear, or that the boundary between killing innocents as 'collateral damage' and killing innocents that amounts to the commission of a war crime is neat and tidy — the difficulties in maintaining and applying these distinctions should not be underestimated. Dave Grossman makes the point that, in the context of a counterinsurgency conflict where the line between combatant and noncombatant is blurry, so, too, may be the line between atrocity and more normal combat operations (Grossman op. cit., p. 194). The doctrine of double effect, which many have taken to provide a principled way to make the distinction between combatant and noncombatant in particular cases, can itself be invoked to try to draw the boundary in disingenuous ways to serve one's own interests. For more on these issues, see Michael Gross, *Bioethics and Armed Conflict* (Cambridge, MA: MIT Press, 2006), Ch. 1; Alison McIntyre, 'Doing away with double effect', *Ethics* 111, 2 (2001): 219–55; and Thomas Nagel, 'War and massacre', *Philosophy and Public Affairs* 1, 2 (1972): 123–44.

My thanks to an anonymous reviewer for this journal for pressing me on this point, and reminding me of these sources.

21 Grossman op. cit.; Shay op. cit.; Yehuda *et al*. op. cit. Of course, as Jonathan Shay makes vivid, in reality there is often no way to cleanly separate individual soldiers into victims and perpetrators of violence. Sometimes this is because the victimized have little choice but to victimize others. See Shay op. cit. Herman op. cit.; Grossman op. cit.; and Joanna Bourke, *An Intimate History of Killing: Face-to-face Killing in Twentieth Century Warfare* (London: Granta Books, 1999). Nevertheless, even when one and the same person is both perpetrator and victim, she is a victim of some particular wrong, and a perpetrator of another distinct one. We can therefore make a conceptual distinction between victimization and perpetration: one is a victim to the extent one suffers violence at the hands of another, and a perpetrator to the extent that one commits, participates in, or is complicit in, acts of violence against another. See Margaret Urban Walker, *Moral Repair: Reconstructing Moral Relations after Wrongdoing* (Cambridge: Cambridge University Press, 2006), p. 7. Whether or not they are also victims, being perpetrators of violence is a salient dimension of most soldiers' experiences in war. While we must remain sensitive to the complexities of the experience of those who are both perpetrators and victims in our responses them, we will want to know what responses are appropriately demanded or expected of a soldier to the extent that she perpetrates violence, and therefore what might be the moral costs of blunting such responses.

22 I say 'most', because, once again, I recognize that the distinction between blameworthy and non-blameworthy killings is not going to be so neat and tidy. Even if we think it will be relatively obvious what counts as an 'atrocity', morally blameworthy killings in war may go beyond atrocities. Indeed, the just war tradition has a long history of wrestling with questions about whether, and if so under what conditions, individual soldiers are morally blameworthy for their acts of war when the war in which they are serving is itself unjust, specifically because the *just cause* criteria has not been met. (For a recent comprehensive overview of the arguments, see Andrew Sola, 'The enlightened grunt? Invincible ignorance in the just war tradition', *Journal of Military Ethics* 8, 1 (2009): 48–65.) Some will argue, for instance, that if a soldier is sent to a war that is thought just, but it *later* becomes clear that the decision by the political leadership to go to war in the first place was morally wrong, the soldier becomes morally culpable for any subsequent acts of war he commits in obedience to the political or military authority. Another issue here is whether recruits in morally suspect militaries or military units (for instance, a white South African recruit serving during the apartheid era) are culpable for the injustices upheld or perpetrated by their units because they chose not to evade military service or desert. These are difficult and important questions that are beyond the scope of this paper. While the examples I use below are meant to be relatively uncontroversial cases of *non-blameworthy* harmings and killings, I recognize that there may be other harmings and killings that fall at some point between these cases and atrocities on the moral blameworthiness scale. Just where that point is determined (by substantive argument) to be may, of course, affect just who falls within the scope of the particular claims I'm making about the use of beta-blockers to blunt perpetrator's feelings of guilt and horror. I thank an anonymous reviewer for this journal for pressing me on this point.

23 This language is from Herbert Morris, 'Nonmoral guilt' in F. Schoeman (ed.) *Responsibility, Character, and the Emotions* (Cambridge: Cambridge University Press, 1987), pp. 220–40.

24 Of course, the distinction between those who are (morally) innocent and those who have committed a moral wrong I'm appealing to here will be more complicated when we are dealing with a war that is *not* so clearly just (see n. 21). While the question of which wars are just, and specifically whether the current conflicts in Iraq or Afghanistan are just, are beyond the scope of this paper, questions about which wars are fought with unquestionably just causes, and which are fought for causes less clearly so, may very well be relevant to thinking about the appropriate emotional responses on the part of soldier to their own combat actions.

25 Though this is of course just what happened in Vietnam. For a moving discussion of this dimension of Vietnam veterans' experience, see Shay op. cit.

26 I consider guilt and remorse to be synonymous, although there is some disagreement in the literature about whether they are. See Gabrielle Taylor, *Pride, Shame, and Guilt: Emotions of Self-Assessment* (Oxford: Clarendon Press, 1985), Ch. 4 and Marcia Baron, 'Remorse and agent-regret' in P. A. French, T. E. Uehling, Jr. & H. K. Wettstein (eds) *Midwest Studies in Philosophy*, *Vol. 13: Ethical Theory: Character and Virtue* (Notre Dame, IN: University of Notre Dame Press, 1988), pp. 259–81.

27 Grossman op. cit., p. 116.

28 Ibid., p. 88.

29 Bourke op. cit., p. 247.

30 Ibid.

31 Grossman op. cit. and Bourke op. cit., Ch. 7. Grossman suggests that often, these emotions follow, usually quite closely, an 'exhilaration' phase of killing.
32 For an excellent discussion of the ways in which our spontaneous emotional responses reflect underlying evaluative commitments and outlooks, see Angela M. Smith, 'Responsibility for attitudes: Activity and passivity in mental life', *Ethics* 115, 2 (2005): 236–271.
33 For the idea of combat as initiation into the 'cult of war', see Herman op. cit., p. 66. For more on the lost innocence associated with in killing war, see Bourke op. cit.; Shay op. cit.; and Grossman op. cit.
34 Tim O'Brien, *The Things They Carried* (New York: Broadway Books, 1990), pp. 124–30.
35 For an insightful discussion of the moral psychology of moving from civilian to solider and back again, see Sherman op. cit.
36 Indeed, it appears that often the only way soldiers can in the end kill is precisely by dehumanizing the enemy. See Grossman op. cit. and Bourke op. cit.
37 I am interested here specifically in guilt in its moral sense (as opposed to its legal sense), though I precisely want to complicate the standard understanding of when feelings of what we might think of as moral guilt are in fact appropriate. Now, some will say that if soldiers in the scenarios we are discussing claim to feel such *guilt*, they are just misdescribing their feelings, for guilt is a response of *self-blame*, and so, by definition, cannot be felt for acts which are not one's fault. But I tend to think we should take first-personal reports of emotions at face value. For a nuanced discussion of soldiers' feelings of guilt, see Sherman op. cit.
38 For the suggestion that guilt may serve as an understandable way of trying to resist the unacceptable conclusion that for all of one's best efforts to do so, one cannot ultimately control how one's actions turn out, see Carolyn McLeod & Julie Ponesse, 'Infertility and moral luck: The politics of women blaming themselves for infertility', *International Journal of Feminist Approaches to Bioethics*, 1, 1 (2008): 126–44.
39 Morris op. cit.
40 Jeffrie C. Murphy, 'Shame creeps through guilt and feels like retribution', *Law and Philosophy* 18, 4 (1999): 327–44. This explains how we can make sense of initially puzzling, yet all too common, phenomena such as survivor guilt, or feelings of guilt about harbouring certain thoughts and desires, as well. For more on survivor guilt, see Morris op. cit., pp. 232–37.
41 Murphy op. cit.
42 Sherman op. cit.
43 Morris op. cit.
44 Peter Rabins, in conversation.
45 Charles A. Morgan III, John H. Krystal & Steven. M. Southwick, 'Toward early pharmacological posttraumatic stress intervention', *Biological Psychiatry* 53 (2003): 834–43; Anke Ehlers, Ann Hackman & Tanja Michael, 'Intrusive re-experiencing in post-traumatic stress disorder: Phenomenology, theory, and therapy', *Memory* 12,4 (2004): 403–15; Edna B. Foa & Barbara O. Rothbaum, *Treating the Trauma of Rape: Cognitive-Behavioral Therapy for PTSD* (New York: The Guilford Press, 1998), Ch. 1.
46 Barbara O. Rothbaum, Edna B. Foa, David S. Riggs, Tamera Murdock & William Walsh, 'A prospective examination of post-traumatic stress disorder in rape victims', *Journal of Traumatic Stress* 5,3 (1992): 455–75; Allison G. Harvey, Richard A. Bryant & Nicholas Tarrier, 'Cognitive behaviour therapy for posttraumatic stress disorder', *Clinical Psychology Review* 23 (2003): 501–22; Fletcher Taylor & Larry Cahill, 'Propranolol for reemergent posttraumatic stress disorder following an event of retraumatization: A case study', *Journal of Traumatic Stress* 15,5 (2002): 433–37; Edna B. Foa, Gail Steketee & Barbara O. Rothbaum, 'Behavioral/cognitive conceptualizations of post-traumatic stress disorder', *Behavior Therapy* 20 (1989): 155–76; Richard A. Bryant, 'Early predictors of posttraumatic stress disorder', *Biological Psychiatry* 53 (2003): 789–95; David S. Riggs, Barbara O. Rothbaum & Edna B. Foa, 'A prospective examination of symptoms of posttraumatic stress disorder in victims of nonsexual assault', *Journal of Interpersonal Violence* 10,2 (1995): 201–13.
47 For more on how memories are laid down over time, see James McGaugh, 'Time-dependent processes in memory storage', *Science* 153, 3742 (1966): 1351–1358; James McGaugh, 'Memory — a century of consolidation', *Science* 287, 5451 (2000): 248–51; Yadin Dudai, 'The neurobiology of consolidations, or: How stable is the Engram?' *Annual Review of Psychology* 55 (2004): 51–86; Jack Debiec & Joseph LeDoux, 'Noradrenergic signaling in the amygdala contributes to the reconsolidation of fear memory: Treatment implications for PTSD', *Annals of the New York Academy of Sciences* 1071 (2006): 521–24; Larry R. Squire, *Memory and Brain* (New York: Oxford University Press, 1987); and Daniel L. Schacter, *Searching for Memory: The Brain, the Mind, and the Past* (New York: Basic Books, 1996).
48 Larry B. Cahill, Bruce Prins, Michael Weber & James L. McGaugh, 'β-adrenergic activation and memory for emotional event', *Nature* 371,6499 (1994): 702–4; Larry Cahill & James L. McGaugh, 'Mechanisms of

emotional arousal and lasting declarative memory', *Trends in Neuroscience* 21,7 (1998): 294–99; Steven M. Southwick, J. Douglas Bremner, Ann Rasmussona, Charles A. Morgan III, Amy Arnsten & Dennis S. Charney, 'Role of Norepinephrine in the pathophysiology and treatment of post-traumatic stress disorder', *Biological Psychiatry* 46 (1999): 1192–1204; Guillaume Vaiva, François Ducrocq, Karine Jezequel, Benoit Averland, Philippe Lestavel, Alain Brunet & Charles R. Marmar, 'Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma', *Biological Psychiatry* 54 (2003): 947–49; James L. McGaugh, 'The amygdala modulates the consolidation of memories of emotionally arousing experiences', *Annual Review of Neuroscience* 27 (2004): 1–28.

49 According to the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV), PTSD can always be traced to a distinct traumatic event, or series of events, as the occasion for the onset of the disorder. A *traumatic* event, by definition, is one in which the person both a) experiences or witnesses actual or perceived death, serious injury, or threat to the personal physical integrity of themselves or others, *and* b) responds with intense emotions that include (but are not limited to) fear, helplessness, or horror. So, not all catastrophic events will count as traumatic events; whether or not they do depends on how they are *experienced*. American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, 4th edn. (Washington, DC: American Psychiatric Association, 2004). See also Matthew J. Friedman, *Post-Traumatic and Acute Stress Disorders: the Latest Assessment and Treatment Strategies*, 4th edn. (Kansas City, MO: Compact Clinicals, 2006).

50 Individuals who report having had intensely negative emotional responses such as fear, helplessness, horror, guilt or shame, during or immediately after traumatic events reported higher rates of current PTSD or levels of PTSD symptoms than those who do not. See Foa & Rothbaum op. cit., Ch. 5; Emily J. Ozer, Suzanne R. Best, Tami L. Lipsey & Daniel S. Weiss, 'Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis', *Psychological Bulletin* 129,1 (2003): 52–73; Terence M. Keane, Amy D. Marshall & Casey T. Taft, 'Posttraumatic stress disorder: Etiology, epidemiology, and treatment outcome', *Annual Review of Clinical Psychology* 2 (2006): 174–75; and Chris R. Brewin, Bernice Andrews & Suzanna Rose, 'Fear, helplessness, and horror in posttraumatic stress disorder: investigating DSM-IV Criterion A2 in victims of violent crime', *Journal of Traumatic Stress* 13,3 (2000): 499–509.

51 Roger K. Pitman, 'Post-traumatic stress disorder, hormones, and memory', *Biological Psychiatry* 26 (1989): 221–23; Turhan Canli, Zuo Zhao, James Brewer, John D. E. Gabrieli & Larry Cahill, 'Event-related activation in the human amygdala associates with later memory for individual emotional experience', *The Journal of Neuroscience* 20 (200): 1–5.

52 Roger K. Pitman, Kathy M. Sanders, Randall M. Zusman, Anna R. Healy, Farah Cheema, Natasha B. Lasko, Larry Cahill & Scott P. Orr, 'Pilot study of secondary prevention of posttraumatic stress disorder with propranolol', *Biological Psychiatry* 51 (2002): 189–92; Bernet M. Elzinga & J. Douglas Bremner, 'Are the neural substrates of memory the final common pathway in posttraumatic stress disorder (PTSD)?' *Journal of Affective Disorders* 70 (2002): 1–17; Ozer *et al*. op. cit.; and Southwick *et al*. op. cit.

53 Cahill and McGaugh op. cit.; Cahill *et al*. op. cit.; Southwick *et al*. op. cit.; Anda H. van Stegeren, W. Everaerd, Larry Cahill, James L. McGaugh & Louis J. G. Gooren, 'Memory for emotional events: Differential effects of centrally versus peripherally acting β-blocking agents', *Psychopharmacology* 138,3–4, (1998): 305–310; Christopher Reist, John Gregory Duffy, Ken Fujimoto &Larry Cahill, 'Adrenergic blockade and emotional memory in PTSD', *International Journal of Neuropsychopharmacology* 4 (2001): 377–383; and Walter Glannon, *Bioethics and the Brain* (New York: Oxford University Press, 2007).

54 Pitman *et al*. op. cit.; Vaiva *et al*. op. cit; Giles op. cit; Taylor & Cahill op. cit.; and Rober K. Pitman & Douglas L. Delahanty, 'Conceptually driven pharmacologic approaches to acute trauma', *CNS Spectrums* 10,2 (2005): 99–106.

55 My thanks to Coleen Macnamara for helping me to get clear on this point.

56 Giles op. cit. and Kathinka Evers, 'Perspectives on memory manipulation: Using beta-blockers to cure post-traumatic stress hormones', *Cambridge Quarterly of Healthcare Ethics* 16 (2007): 138–46.

57 Indeed, those who deal with military men and women's experiences of combat trauma often insist that the 'essential' injuries in combat PTSD are moral and social. See Shay op. cit., p. 187.

58 Herman op. cit., p. 51.

59 For a nuanced discussion of the ways in which trauma reconfigures the self, see Susan J. Brison, *Aftermath: Violence and the Remaking of the Self* (Princeton, NJ: Princeton University Press, 2002).

60 Herman op. cit., p. 66.

61 Ibid., Ch. 3 and Shay op. cit.

62 Bernard O. Williams, 'Moral luck' in B. Williams (ed.) *Moral Luck: Philosophical Papers 1973–80.* (Cambridge: Cambridge University Press, 1981), pp. 44–45.
63 The following discussion owes a great deal to Margaret Urban Walker, 'Moral luck and the virtues of impure agency', *Metaphilosophy* 22,1–2 (1991): 14–27.
64 Ibid., p. 21.
65 For some classic discussions of agent-regret, see Williams op. cit.; Baron op. cit.; and Amélie A. Rorty, 'Agent regret' in A. O. Rorty (ed.) *Explaining Emotions* (Berkeley, CA: University of California Press, 1980), pp. 489–506.
66 Walker op. cit., p. 21.
67 I thank Michael Doan for helping me to see this extremely important point, and for suggesting that there might be some moral value specifically in going through a 'Seth stage', for instance, if doing so results in a forward-looking resolution to be more cautious about the types of endeavours one undertakes in the future, now that one knows how things can turn out.
68 It hope it is clear by now that when I speak of the 'limits of their control', I am not suggesting that soldiers do, or advocating that they should, deny that the acts of killing or harming in question were indeed products of their own decisions. As an anonymous reviewer for this journal suggested, most soldiers recognize that they *could* have chosen, for instance, not to shoot.
69 I am indebted to Maggie Little for this notion of 'inhabiting'.
70 For more on the relationships between emotions and what we value, see Smith op. cit. and Elisa A. Hurley, 'Working passions: Emotions and creative engagement with value', *The Southern Journal of Philosophy* 45,1 (2007): 79–104.
71 For an insightful discussion of the way remembering emotions can link our experiences of past events to what we care about in the present, see Avishai Margalit, *The Ethics of Memory* (Cambridge, MA: Harvard University Press, 2002), Ch. 4.
72 For more on how soldiers' emotions help reintegrate them into civilian society, see Bourke op cit., Ch. 7.
73 An anonymous reviewer for this journal suggested that, while the picture of two moral communities presented here — a civilian morality and a wartime morality — seems an accurate description of how things *are*, things *need not* be this way. As a military ethicist, the reviewer sees his or her role as demonstrating and explaining how the principles of justified killing are in fact the same in civilian life and in war.
74 Bourke op. cit., p. 238.
75 My thanks to Carolyn McLeod for convincing me to spend some time dealing with this point.
76 Assuming, for the sake of the argument, that beta-blockers could target single emotions.
77 I thank an anonymous reviewer for this journal for suggesting this language to me.
78 For the central importance to healing of the communalization of trauma and social support, see Herman op. cit.; Shay op. cit. Brison op. cit.; Grossman op. cit.; Martha Minow, *Between Vengeance and Forgiveness: Facing History after Genocide and Mass Violence* (Boston, MA: Beacon Press, 1998); and Anthony Charuvastra & Marylene Cloitre, 'Social bonds and posttraumatic stress disorder', *Annual Review of Psychology* 59 (2008): 301–28.
79 My gratitude to Carolyn McLeod for helping me to see this very important point.
80 For a discussion of how the refusal to acknowledge can retraumatize, see Margaret Urban Walker, 'The politics of transparency and the moral work of truth' (Delivered at the Eastern Division American Philosophical Association Meeting, December 2006).
81 Foa & Rothbaum op. cit., Ch. 5; Herman op. cit.; Minow op. cit.; Shay op. cit.; Brison op. cit.; and Matthew J. Friedman, 'Posttraumatic stress disorder among military returnees from Afghanistan and Iraq', *The American Journal of Psychiatry* 163,4 (2006): 586–93.
82 Indeed, Herman says that, 'the recitation of the facts without the accompanying emotions is a sterile exercise, without therapeutic effect' (Herman op. cit., p. 177).
83 For more on such stigma and its effects on rates of use and success of therapy, see Charles W. Hoge, Carl A. Castro, Stephen C. Messer, Dennis McGurk, Dave I. Cotting & Robert L. Koffman, 'Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care', *The New England Journal of Medicine* 351,1 (2004): 13–22; Matthew J. Friedman, 'Acknowledging the psychiatric cost of war', *The New England Journal of Medicine* 351, 1 (2004): 75–77; Friedman op. cit. and Friedman, *Post-Traumatic and Acute Stress Disorders.*
84 My thanks to Coleen Macnamara for helping me to frame the importance of this point.
85 In addition, I believe the argument I've presented leaves open the possibility that, if we were somehow able to identify the 15–25% of individuals who will go on to develop PTSD after traumatic experiences (Taylor & Cahill op. cit.) and hence target the delivery of beta-blockers just to those individuals whose lives would

otherwise be devastated by PTSD, we might determine that we morally *ought* to provide beta-blockers to such individuals. My gratitude to an anonymous reviewer for this journal for suggesting I address this possibility.

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