

# Resilience and Other Reactions to Military Deployment: The Complex Task of Identifying Distinct Adjustment Trajectories

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In their study of Danish veterans deployed to Afghanistan, Andersen and colleagues<sup>1</sup> provide compelling evidence of psychological resilience to the effects of military deployment and some insight into the factors underlying it. In addition, they present evidence of a wide array of other adjustment trajectories following military deployment. In relation to resilience, 78% of Danish soldiers experienced minimal posttraumatic stress disorder (PTSD) symptoms before deployment and up to 2.5 years after. These results are consistent with other recent investigations of soldiers' capacity to weather the stress of war. For example, Bonanno and colleagues<sup>2</sup> found that 83% of American military personnel deployed to Iraq and Afghanistan showed low levels of posttraumatic stress symptoms both before and up to 5 years after their deployment. Similarly, Dickstein and colleagues,<sup>3</sup> in a longitudinal study of American peacekeepers in Kosovo, found that over 80% showed minimal PTSD symptoms before their deployment and no increase in distress after it.

Indeed, there can be little doubt that the considerable majority of soldiers are able to return to their normal levels of functioning after deployment to a war zone. The human capacity to endure and even thrive under conditions of acute stress, once considered rare or a reflection of extraordinary coping abilities, is now increasingly recognized as normative,<sup>4</sup> the rule rather than the exception. In response to events as diverse as bereavement, traumatic injury, life-threatening disease, and even terrorist attack,<sup>5</sup> most people are able to sustain their psychological equilibrium.

What predicts this capacity for resilience? Andersen et al<sup>1</sup> found that resilient soldiers, when compared to soldiers who experienced various PTSD trajectories, tended to report lower levels of predeployment depression and greater emotional stability. They also reported fewer earlier life traumas. However, in addition to these dispositional strengths, resilient soldiers also reported that they felt themselves to be in less danger than other soldiers. Were these soldiers resilient because they faced fewer life-threatening circumstances or because they were simply more psychologically hardy? It is not clear. Prior research suggests that resilience is a complex brew, composed of multiple ingredients, all of them contributing (or detracting from) the likelihood of a resilient outcome.<sup>4</sup> Andersen and colleagues'

findings<sup>1</sup> underscore that there is much for us to understand about the potential interaction of the person and the stressful situation in promoting resilience.

In addition to resilience, Andersen et al<sup>1</sup> present evidence that there are 5 other distinct adjustment trajectories, which they describe as "symptom fluctuating." The form of these trajectories varies considerably, from marked elevations in PTSD symptoms at 2.5 years after returning from deployment to marked improvement in PTSD symptoms directly following deployment. In this sense, Andersen and coauthors' findings<sup>1</sup> are broadly consistent with the idea that responses to acute stress are heterogeneous and that it is critical to diagnose and represent this variability through individually varying response patterns or trajectories.<sup>6</sup>

Two of the symptom fluctuation trajectories are of particular interest. The first is a group of soldiers (7.5%) who showed *improvement* in distress after being deployed.<sup>1</sup> This counterintuitive trajectory would initially seem implausible. Why would soldiers improve after deployment? In spite of the surprising nature of this pattern, a number of previous studies have identified it as well, although it has drawn little attention in the literature. For example, Dickstein et al<sup>3</sup> found that 9% of American peacekeepers showed a sharp reduction in PTSD symptoms after being deployed. Similarly, Bonanno et al<sup>2</sup> found that 8% of soldiers showed improvement after deployment. What would explain this trajectory? Although no prior empirical examinations have directly addressed this question, it is possible that the anticipation of deployment was a source of distress in itself and ultimately worse than the actuality of being deployed to a military theater. In fact, people are remarkably poor at forecasting their affective reactions to future events,<sup>7</sup> both positive and negative ones. Interestingly, the estimates for prevalence of this pattern are remarkably similar across studies, and suggest that this is a legitimate response pattern that merits considerably more scrutiny than it has received.

The second is a group of soldiers (2%) who were distressed *before* being deployed, reporting high levels of PTSD symptoms before deployment and a continuation of those symptoms after.<sup>1</sup> A key point here is that in the absence of knowledge about their predeployment functioning, these soldiers would have been assumed to be suffering from PTSD in response to their war experience, when in fact their distress predated their deployment. There is ample precedent for such a response pattern, which has been described as continuous distress by Bonanno et al<sup>5</sup> and identified in response to bereavement<sup>8,9</sup> and other acute stressors.

It is important to note that both of these patterns were observable because the study employed a prospective design.

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In other words, soldiers were assessed both *before* and *after* their deployment. From a methodological standpoint, this is the strongest longitudinal research design, because it allows the researchers to ascribe, with relative confidence, any change in distress to the event that precipitated it, in this case their deployment experience. Conversely, it can establish whether their deployment resulted in change at all. In the absence of a prospective design, it would not have been possible to identify either the improvement or the continuous distress trajectories.

In addition to resilience, continuous distress, and improvement trajectories, Andersen et al<sup>1</sup> identify 3 others. However, these response patterns are more difficult to align with preexisting theory or empirical research. As a result, the question is raised as to whether the authors have identified too much heterogeneity in their analyses. Indeed, it is important to sound a cautionary note here. Generally, when conducting latent growth mixture models, a trajectory solution should be supported “using substantively based theory and evidence.”<sup>10(p352)</sup> In short, each of the trajectories should make sense and be readily interpreted. A key issue with the sheer array of trajectories in Andersen et al<sup>1</sup> is that some are difficult to interpret or lack supporting evidence, key criteria in determining whether the trajectories are valid.<sup>10</sup> The distressed-improving trajectory, for example, reveals a small group of soldiers (2.7%) who reported elevated PTSD symptoms before, during, and just after deployment but then showed marked improvement at the 3-month time point. This pattern of adjustment has no basis in prior theory or, to this author’s knowledge, empirical work.

On the other hand, the late-onset trajectory, which characterized 5.7% of the sample, is consistent with a growing research and theoretical base on delayed PTSD.<sup>11</sup> It would be important to identify a group of soldiers with an onset of PTSD 2.5 years after their deployment. Unfortunately, strong conclusions about the legitimacy of this trajectory are difficult for at least 2 reasons. First, although this group indicated that deployment was their index trauma, they also reported more postdeployment accidents, life-threatening diseases, robbery involving a weapon, threat of death or serious bodily harm, intimate partner abuse, and other life-threatening or physically damaging events than resilient persons. It is plausible that their elevated PTSD symptoms are, in fact, attributable to these other acute stressors. Consistent with this possibility, one of the factors that distinguished the late-onset group in post hoc multivariate analyses was postdeployment stressors. Second, persons in the late-onset trajectory reported almost no symptoms upon return and at the 3-month time point. The absence of symptoms directly following their deployment runs contrary to prior empirical and theoretical work, which proposes that delayed-onset PTSD represents an exacerbation of existing symptoms rather than the late onset of a full-blown PTSD syndrome.<sup>11</sup>

Andrews and colleagues have argued that the onset of any PTSD symptom beyond at least 6 months appears to be “extremely rare outside of military samples. Even in these samples there is disagreement about whether it exists.”<sup>11(p1324)</sup> In the context of these questions, and especially given the wide interval between the last 2 assessments (almost 2 years), it is difficult to conclude with certainty that the substantial and delayed elevation in PTSD symptoms is attributable to their deployment.

There has been a surge in trajectory research on reactions to trauma. Andersen et al<sup>1</sup> highlight the considerable strengths, as well as the complexities, of this work. Unlike more traditional analytic techniques, which rely purely on statistical significance, latent trajectory research depends, to a considerable degree, on theoretical criteria as a basis for accepting or rejecting a given statistical model. This complicates and also enriches the research enterprise. Whether all of the trajectories are valid descriptions of distinct reaction patterns, their findings clearly demonstrate the robust nature of resilience and the heterogeneity of responses to acute stress, as well as open up some intriguing possibilities for future research.

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