This paper examines a number of terms related to transhumanism, and their prevalence in military and government publications. Transhumanism and the technologies attendant to the movement have clear implications for militaries and insurgencies. Although strategists in all camps must begin to plan for the possible impacts of such technologies if they wish to stay relevant and ready on a global scale, the impact of transhuman values is all but nonexistent in the military literature. This paper concludes that the lack of transhuman terms in military journals illustrates an ignorance of transhumanism amongst military thinkers and policy makers.

1. Introduction

Transhumanism, the philosophical movement which employs advanced technologies to further rational humanism (Bostrom, 2005, 2), has something to say about many fields of human inquiry and activity, including medicine, information science, sociology, and, even military science. In the United States, spending on military and defense is very large – over $400 billion dollars in 2005 (Office of Management and Budget, 2006). Indeed, research and development funds for defense have been increased by over 50% since 2001 (OMB, 2006). The connection between technology and the military is clear; the relationship between transhuman terms and military science may reveal, more broadly, the military's attitude toward transhuman thought. As we shall show, transhumanism does not strongly impact military or defense literature.

New solutions are needed to military problems, post-9/11, and new tactics and strategies are encouraged in the military (U.S. Department of Defense, 2001). Problems such as

improvised explosive devices, a non-conventional weapon, certainly beg non-conventional solutions (McKenna, 2005). DARPA funds research into advanced technologies for military application, including research into artificial intelligence (U. S. Congress, House, 2005). For some transhumanists, artifical intelligence is a key factor in the approaching techno-social singularity (Kurzweil, 2006, 40). For the military, again, the interest in the technology is absent of any interest in the philosophy. A post-singularity world would be geo-politcally destabilized, to say the least, and the world that emerges from such a singularity, though by definition impossible to predict or perhaps even to understand from our current position, would certainly be a world that both nation-states and insurgents would wish to control.

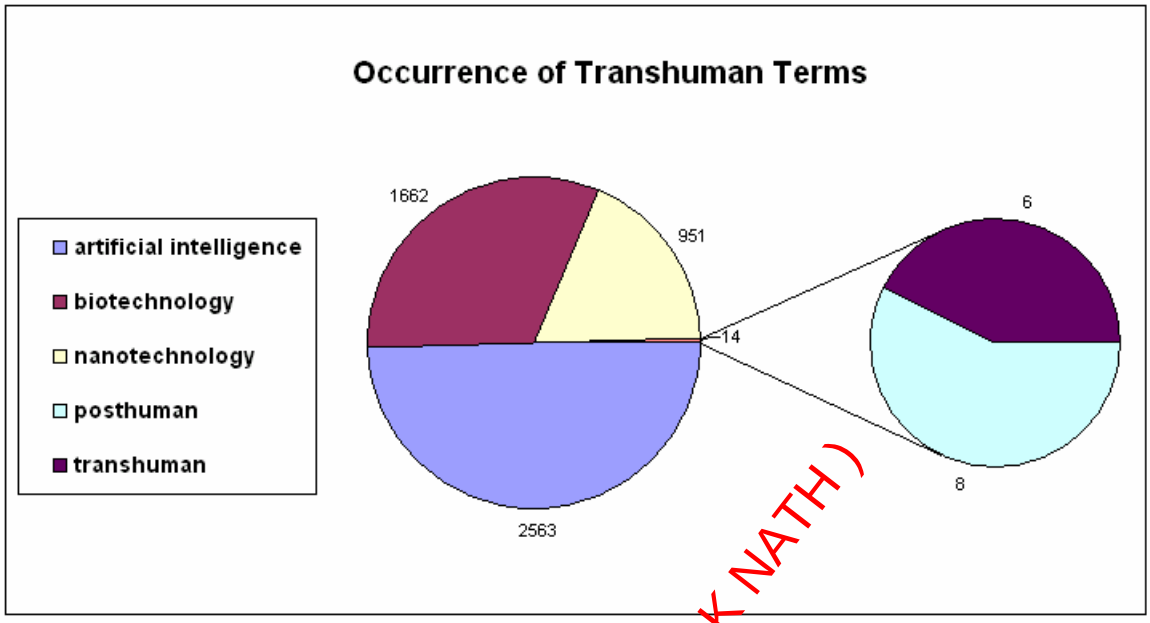
We have seen, in a variety of settings and circumstances, that a small group of people with access to new technologies can coordinate devastating attacks. From the events on September 11, 2001, when 19 men were able to use their knowledge of communications and transportation technology to kill 2,973 people (National, 2004, 311), to the infamous Arkan's guerilla tactics using cell phones to network troops in Yugoslavia (Sterling, 2003, 129-131), to the grave possibility of dirty bombs and weaponized biological agents looming on our horizon, we can hardly doubt that insurgents are incorporating advancing technologies into their strategies (Jervis, 2005). Of course, there is nothing new about bioterrorism, but technological advances make it easier to implement, and much deadlier; there is nothing new about propaganda, whether from empires or guerillas, though advances in communications allow new uses for new media by terrorists to powerful effect (Der Derian, 2005).

Nations and terrorists are groping to understand what power is available to what factions, and which technologies will best enable and empower their own sides. The technology, even as we may move toward singularity, leaves us wondering what to do next, what is possible, and what it all means for our security. Whether or not the philosophy of transhumanism can act as a liberating and democratizing force in the world is a question beyond the scope of this essay. However, the fact that "transhuman technology", like weaponized biotechnology, may be deployed in asymmetrical warfare against democratic interests is reason enough to hope that strategic thinkers are paying attention to the technologies, ideas (WTA, Declaration, 2006), and aspirations attached to transhumanism, if, indeed, the tendency of transhumanists is to work toward peace.

2. Statistical Observations

This essay tightly limits its scope; nevertheless, within the parameters of this research, we find that the transhumanist terms described below appear 5190 times in the journals and periodicals examined. The terms are: artificial intelligence; biotechnology; nanotechnology; posthuman; transhuman.

Occurrence of Transhuman Terms Chart:



The terms were taken from the World Transhumanist Association's website (WTA, FAQ, 2006), and all appear on the Frequently Asked Questions pages. These terms are arguably among the most fundamentally important to the concerns of transhumanism as a whole; their appearance on the WTA's FAQ confirms their importance to the field. There are, of course, many other terms under the transhumanism umbrella besides the 5 used here, and a more thorough study, including a greater number of terms and a more diverse set of terms, should be conducted in the future. Also note that I searched artificial intelligence as an exact phrase ("artificial intelligence"), and that I did not truncate any of the terms (that is, I searched for the term transhuman, not for transhuman* or transhumanist).

I searched all publications available in the *Military & Government Collection* (MGC), an EBSCOhost database. This database "provides cover-to-cover full text for nearly 300 journals and periodicals and indexing and abstracts for nearly 400 titles," according to EBSCOhost's description. The MCG is mainly an academic source, although it provides titles for news and general reading related to military matters, as well.

As seen in the chart above, the "hard science" terms (*artificial intelligence*, *biotechnology*, and *nanotechnology*) together garnered 5176 of the 5190 hits. *Artificial intelligence* brought back 2563, *biotechnology* brought back 1662, and *nanotechnology* brought back 951. *Posthuman* and *transhuman* brought back a combined 14 hits (8 for *posthuman*, 6 for *transhuman*). Many of the results for *artificial intelligence* were in publications such as the Institute of Electrical and Electronics Engineers' IEEE Transactions on Knowledge & Data Engineering. Of the results for *posthuman* and *transhuman* 10 were book reviews. 6 out of 8 hits for *posthuman* were reviews for the book *Our Posthuman Future* by Fukuyama. 4 out of 6 hits for *transhuman* were reviews for *Great Mambo Chicken and the Transhuman Condition* by Regis.

In summary of the findings, this brief bibliometric experiment reveals a great many technical articles dealing with the science and technology of artificial intelligence,

biotechnology, and nanotechnology, but very little of substance dealing with transhumanism itself, as a movement or as a set of ideas.

3. So What?

Simply put: transhumanism, as a philosophy, does not yet impact military science in any significant way.

One may wonder: why should transhumanism impact the military? Again, this question is beyond the scope of the current essay; however, if the civilian leadership of United States Military in particular were to adopt a political/philosophical position that employed not only the technology important to transhumanism, but also its humanistic stance, the policies of spreading democracy and capitalism globally might be strengthened with consistency and legitimacy.

As we have seen, the hard science and technology – such a vital foundation to transhumanism – is widely present in the titles indexed in MCG. It stands to reason, then, that though the idea of transhumanism itself has yet to take hold on those working in military strategy, military science, and policymaking, the technological foundations of transhumanism are already affecting the literature. Ideas such as *nanotechnology* and *artificial intelligence* may begin to inspire political actors as they have transhumanists; and as these technologies continue to impact our world, the idea of transhumanism may too begin to affect military and strategic thought. But this will not happen as an affect of using the technology itself, if technology continues to be understood, as it has so long been seen, as an apolitical force (Barr, 1998, 24). There must be greater dialogue between civilian policy makers, military strategists, and transhumanist thinkers if humanism (or transhumanism) is to flourish in such a technologically advanced world; indeed, without such dialogue, transhumanism may be easily labeled an insurgent or terrorist movement itself, as Nick Bostrom suggests in his recent essay on the history of transhumanist thought (19-20). We can only hope that if transhumanism spreads with this technology, the positive humanism it is built from might improve the effects of advanced technologies on the geopolitical world-stage.

Things could, however, take a darker turn. For "there is no silver lining without its cloud," to quote Bruce Sterling on the social impact of the Internet, and with stakes so high we cannot afford to forget that we are "empowering people we're afraid of, and we cannot handle the consequences of the social change, some of which are always dark" (Godwin, 2004). If transhumanism can become an important node in the semantic web of military terms, it might shine light into the shadows cast by the grim uses of the technologies associated with it.

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