

Chapter 13

The Role of Affective Computing for Improving Situation Awareness in Unmanned Aerial Vehicle Operations: A US Perspective

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ABSTRACT

Unmanned aerial vehicles (UAVs), commonly known as drones, are a robotic form of military aircraft that are remotely operated by humans. Due to lack of situation awareness, such technology has led to the deaths of civilians through the inaccurate targeting of missile or gun attacks. This chapter presents the case for how a patented invention can be used to reduce civilian casualties through attaching an affect recognition sensor to a UAV that uses a database of strategies, tactics and commands to better instruct fighter pilots on how to respond while in combat so as to avoid misinterpreting civilians as combatants. The chapter discusses how this system, called VoisJet, can reduce many of the difficulties that come about for UAV pilots, including reducing cognitive load and opportunity for missing data. The chapter concludes that using UAVs fitted with VoisJet could allow for the reduction of the size of standing armies so that defence budgets are not overstretched outside of peacetime.

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INTRODUCTION

The use of remote systems like drones, technically known as unmanned aerial vehicles (UAVs), is starting to move out of the first wave of public and media attention, and now needs to shift toward a more cohesive debate with productive and practical ends. Indeed, it has been argued that a problem with the design of existing UAVs driven by policy makers, who are not militarily qualified, has been illustrative of the claim that new technological practices that aim to bridge physical distance provide a more efficient moral distance and make it difficult for people to exercise moral responsibility (Coeckelbergh, 2013). This has been associated with Internet abuse such as trolling, where people will abuse others for their own enjoyment without considering the consequences (Bishop, 2013; Bishop, 2014; Hardaker, 2013; McCosker, 2013), but should be considered a flaw that needs adjusting in current drone systems where the actions of pilots would be dehumanised. The use of UAVs by the US Government provides greater freedom in those military personnel carrying out operations on their behalf, as use of foreign military personnel and the agreement of their government will be less necessary (Byman, 2013). A greater use of UAVs also means that there will be fewer casualties arising out of improvised explosive devices (IEDs) as air-based operations provide greater safety for military personnel in this regard (Reynolds, 2013). The problem however is evident that the way UAVs are currently designed does not allow for the efficiency of operations and the safety of civilians and other non-military targets.

Uses and Limitations of UAVs in Combat Operations

The NATO forces are becoming more dependent on UAVs, and their use has been driven by the US and such policy choices have consequences, regardless of whether their military leaders believe these are right or wrong (Kean et al., 2004, p.376). Any government in the world will want to increase its national security whilst limiting loss of life to those in its military and the civilians in the localities where its military operations are engaged. However, before trying to understand the technology of UAVs and how they can be improved, it is important to understand why there is a growing need for the US military to be allowed to use UAVs in military engagements in order to safeguard the democratic rights of Americans whom they must protect whoever is in power in the White House.

BACKGROUND

There is one thing more certain than death or taxes and that is that humans will always be in conflict with one another, regardless of which difference or transgression created that conflict. One of the longest lasting wars in history is that which is taking place in the Holy Land between those Jews that identify as Israelis and those Arabs that identify as Palestinians. During the first millennium BCE this part of the world, one might wish to call the Holy Land, was known as Israel in the Hebrew language and as Palestine in Roman Latin (i.e. they were the same place). It was only in the mid-21st century CE that there was a separation of the territories caused by meddling politicians who formed part of the United Nations. The people in the Holy Land around 900 BCE were known as the Israelites, and there were 12 Semitic tribes in total, forming part of a united kingdom. These tribes split around 820 BCE with the enthronement of the son of King Solomon, Rehoboam, who threatened “God’s wrath” on the 10 tribes in the North, who have now become the Jewish Semitics (i.e. Jews) and the two tribes in the South whom supported

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