In what ways are drones changing the character of warfare?

At first glance, the drone, or "unmanned aerial vehicle" (UAV) can be seen as a game changing technological disruption to warfare. After all, the drone's definition as "unmanned" highlights its non-humanity which sets it apart from all previous weapons as something revolutionary (Singer, 2009: 430). Yet, technology in war is evolutionary and therefore drones as military technology has a degree of history. Ever since World War II, it has been the strategic choice of the United States to maintain technical superiority in military affairs to preserve its global primacy and security (NSC, 1950). With its relative low cost, low risk and unprecedented surgical targeting ability, the drone is assumed to be the morally necessary, revolutionary, counterterrorism weapon of response to a twenty-first century global terrorist scourge that has blurred the definitions of battlefield, border, enemy, and threat. The significant manner in which the drone has contributed change in warfare is through its ultimate redrawing of the conditions in which the US government conducts violence in the stated name of security.

This paper will therefore first confront how the innovative technology of drones re-characterized warfare capabilities to generate new geopolitical capacities for governments and for the combatants who execute their militarized foreign policies. Second, it will demonstrate that these new geopolitical capacities have caused shifts in the political, legal and moral character of warfare through analysis of how society permits and automates the use of these drone-inspired geopolitical capacities. Ultimately, it will show that while drones do not constitute a break from the past, they exert unprecedented pressure upon our conceptions of warfare and what it means to go to war.

In response to the agile, irregular tactics of global terrorism, drones have provided the US government with a strategic military presence in the kind of hostile territory it otherwise would have been unable to infiltrate. Reconnaissance drones had been used in Vietnam, but their flight paths had to be pre-programmed and recovered by helicopter, or they were flown remotely by accompanying manned aircraft (Gregory, 2011b). By contrast, the revolutionary innovation of the Predator drone is that it can fly non-stop for as long as twenty-four hours at heights of up to 26,000 feet. It is unmanned, controllable via satellite communications from practically anywhere in the world and cost-effective enough to be expendable on more low-flying, dangerous

missions (Singer, 2009: 33). This means it is readily deployable in war zones or unstable countries such as Pakistan, Yemen and Somalia, giving the US a comparatively less violent option in dangerous, remote regions where conventional air strikes or putting boots on the ground is too risky, infeasible or diplomatically impractical. These capabilities surpass what any careful manned aircraft can endure and has proven transformative for US government policy and for combatants at war.

For the US government, arguably the most prominent change drone technology has authored is the individualization of warfare. Historical aerial reconnaissance video and photography technology for intelligence gathering or potential bombing campaigns was limited and in could only target geographic locations or physical objects of strategic interest such as enemy training camps, industrialized buildings or weapons caches (Gregory, 2011b). Such is the innovation of the Predator drone, that it can hover undetected for hours, allow its operators to read a car license plate from two miles up, day or night, through cloud, dust or smoke, lock onto targets through laser designation and radar, and deploy laser-guided missiles (Singer, 2009: 33). It is this re-characterization of precision through which drones have successfully individualized warfare, and the primary reason that the US promoted the drone program to become its counterterrorism weapon of choice. Not only is its discriminating use of force unprecedented, but it represents a comparatively low-risk way of eliminating high value targets (HVTs) who are hard to replace, with minimal collateral damage. Such was the drone's effectiveness in Afghanistan post-9/11, that Tommy Franks, commander of all US forces in the region at the time heralded the Predator as the "most capable sensor in hunting and killing Al Qaeda and Taliban leadership" (Franks in Singer, 2009: 34). US appetite for individualized warfare therefore continues unabated. The US Air Force trained 350 drone pilots in 2011 compared with only 250 conventional fighter pilots the same year to meet government policy demand for multiple daily drone missions. As of October 2015, there were approximately 61 drones patrolling worldwide skies on a daily basis (Cronin, 2013: 53; Lubold, 2015).

For combatants, drone technology has compressed the "kill chain" process — namely, the finding, fixing, tracking, targeting, engaging, and assessing of aerial targets (US Air Force; 2006: 49). Whereas each stage of the kill chain apparatus traditionally required a patchwork of specialized teams, two drone personnel alone — a pilot and a sensor operator — can execute the surveillance, reconnaissance, engagement and assessment of their assigned mission (Boyle, 2012; Hastings, 1993: 252; Gregory, 2011b). But perhaps the