



BRIEFING NOTES

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CANADIAN DESIGN CONCEPTS IN AUTONOMOUS SYSTEMS

Authors: Shahram Shahkar¹ and Kash Khorasani²

¹ Graduate student, Department of Electrical and Computer
Engineering, Concordia University, Montreal, Canada

² Professor, Department of Electrical and Computer
Engineering, Concordia University, Montreal, Canada

SUMMARY

- ✚ Autonomous systems have to be designed in a manner to recognize and respect the fundamental values and ethics at the Canadian heritage. These values include:
 - Respect for democracy
 - Respect for people
 - Integrity
 - Sound resource management and excellence

CONTEXT

- ✚ Autonomous Systems have to be considered as Public Servants [2]. However, according to the ethics code for public services [1] “public servants recognize that elected officials are accountable to Parliament, and ultimately to the Canadian people, and that a non-partisan public sector is essential to our democratic system”. Respecting similar the principles Autonomous Systems have to be designed to make decisions in a non-partisan manner. For example, this requires decisions to be demographically unprejudiced.
- ✚ Respect for People: “Treating all people with respect, dignity and fairness is fundamental to our relationship with the Canadian public and contributes to a safe and healthy work environment that promotes engagement, openness and transparency. The diversity of our people and the ideas they generate are the source of our innovation” [1],[2]. This particularly requires Autonomous Systems to place the individuals prior to any other system priority in every decision and every act.
- ✚ Integrity: “public servants have to conserve and enhance public confidence in the honesty, fairness and impartiality of the public sector” [1]. This expected requirement in the public service is the cornerstone of some important design aspects including transparency in the decision making process. Machines have to be designed in such a way that whenever required, the logical process and reasoning behind autonomous decisions be retrieved for analysis and verification. In other words, complicated decisions should not be such that they cannot be retrieved by human beings in an understandable fashion.
- ✚ Excellence and Stewardship: Public services shall be entrusted to use public resources carefully and responsibly. Excellence in design and delivery of the services are important factors in implementing Autonomous Systems.
- ✚ Finally, one also needs to take into account and incorporate the following considerations on norms, values, and ethics. Values comprise of ideas which are preferred. In other words, what is good, right, wise or beneficial. According to [5] “Values are implanted early in a person’s life and once they are fixed, serve as a guide in choosing behaviour and in forming attitudes. They become part of superego. Values change through day-to-day behaviour, and regulated by norms. Values are developed and reinforced and do not

develop spontaneously. Values are re-learned, e.g., in group work sessions members re-learn the desirable values, viz., riches of others should be treated as mud, other's wife should be seen as mother, and the like. Social work has its own values that are embedded in democratic values.

- ✚ Social values form an important part of the culture of the society. Values account for the stability of social order. They provide the general guidelines for social conduct. Values such as fundamental rights, patriotism, respect for human dignity, rationality, sacrifice, individuality, equality, democracy etc. guide our behaviour in many ways. Values are the criteria people use in assessing their daily lives; arrange their priorities and choose between alternative course of action."
- ✚ G.R. Leslie, R.F. Larson, H.L. Gorman say, "Values are group conceptions of the relative desirability of things". According to H.M. Johnson, "Values are general standards and may be regarded as higher order norms".
- ✚ Young and Mack write, "Values are assumption, largely unconscious, of what is right and important". Michael Haralambos says "A value is a belief that something is good and worthwhile. It defines what is worth having and worth striving".
- ✚ According to Peter Worsley, "Values are general conceptions of "the good", ideas about the kind of ends that people should pursue throughout their lives and throughout the many different activities in which they engage".
- ✚ Therefore, it can be said that "values are standards of social behaviour derived from social interaction and accepted as constituent facts of social structure. They are objects that social conditions desire. These are culturally defined goals and involve "sentiments and significance." These consist of "aspirational reference". Values are expected to be followed for judging and evaluating social interaction, goals, means, ideas, feelings and the expected conduct. Without such evaluating standard, it would be difficult to judge individual behaviour or social action. Values aim to integrate expected individual behaviour and social action. It tends to forestall tension and as such have tension management role" [8].

PARTICULAR CASE STUDIES

- ✚ The author in [3] discusses the autonomy in weaponry systems and argues that public policy debate around regulating emerging autonomous weapons is vital especially within democracies leading to the development of such systems, about the relationship of autonomous systems to the nature and purpose of military and underpinning democratic values and principles.
- ✚ Accordingly, "current analysis focuses around efforts to define autonomy and to incorporate autonomous systems within established regulatory systems, particularly international law and arms control treaties and conventions. This emphasises two key decision moments as the focus of regulation: the initiation of hostilities and target

engagement, reflecting the just war tradition that provides the intellectual backdrop for much of this debate”.

- ✚ The author in [3] further suggests that “this underestimates the significance of the potential consequences of such weapons systems, arguing that this consensus disguises the extent to which autonomy can only be meaningfully engaged within the specific context of the circumstances when such systems may be deployed, and that the speed of decision making by such systems will outstrip regulatory endeavours focused on the two decision moments”.
- ✚ Certain ethical concerns pertaining respect for people can question the development of autonomous lethal weapons. The author in [4] quotes that “respect for persons entails that, even in war, one must acknowledge the personhood of those with whom one interacts, including the enemy”. Acknowledging that personhood requires whatever one does to another, it is done intentionally with the knowledge that, whatever the act is, it is affecting another person [7].
- ✚ The author in [4] continues that “this relationship does not require communication or even the awareness by one actor that he or she may be acted upon by another. It just requires the reasons actors give for any act that affects another human being take into account the respect owed that particular human being. To make life-and-death decisions absent that relationship subjects human beings to an impersonal and pre-determined process, and subjecting human beings to such a process is disrespectful of their status as human beings”.

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