39 Aristotle at the Googleplex: On the Virtuous Use of eScience

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39.1 Preamble

As a student of philosophy, it has been my privilege to come to know the works of both the classic thinkers and more contemporary intellectuals. This education has brought me into contact with, among other things, the tradition of moral philosophy. This tradition provides us with a rich resource for making sense of the world around us, and for investigating both our own and others' assumptions about right action. Again and again, I find myself returning to the insights of Aristotle, Kant and Bentham in grappling with contemporary problems of living. Therefore, I am immensely excited and grateful to be participating in a conference celebrating and interrogating the intellectual inheritance of the immense body of work associated with Aristotle. In this short speech, I hope to outline some of my own thinking on the application of Aristotle's moral philosophy to issues surrounding the use of eScience, highlighting some places where he is useful to us, and where the value of his contribution is more limited.

However, I should first say a few more words to introduce myself, as I am sure that many of you might be wondering, at least, where my accent is from. I am a South African Master's student, pursuing an MSc in Higher Education Research and Management. I came to this topic via my past experience as a lecturer and tutor at Stellenbosch University. Over the course of my engagement with topics in philosophy, it has been my pleasure to introduce this long history of thought to students at the philosophy department at Stellenbosch. However, the educational and administrative responsibilities accompanying my work ultimately led me away from the exclusive study of philosophy, and towards the curious phenomenon of higher education itself. In the pursuit of developing this interest in higher education, I applied for the Erasmus Mundus Joint Master in Research and Innovation in Higher Education, hosted by a consortium of universities in Austria, Finland, Germany and Beijing. Being accepted on scholarship in 2016, in my first semester of studies I was introduced to Professor Johan Günther, a member of the IAFeS board. It is through this connection that I came to apply to IAFeS as student member, seeking to engage with academics who are working in this pioneering and highly influential field that has so much relevance for the study of higher education. However, I believe that is enough about me for now, as it is time to begin the task of sharing with you my take on the application of virtue theory in relation to the field of eScience.

39.2 Introduction

The title of this speech takes it's leave from Rebecca Goldstein's 2014 book 'Plato at the Googleplex: Why Philosophy Won't Go Away'. Placing my own thinking in relation to Goldstein's affords me the opportunity to, like her, place an ancient philosopher in conversation with the contemporary world. Where Goldstein took Plato all across America, I

am taking Aristotle to the domain of eSience. In doing so, I draw on Aristotle's particular emphasis on the connection between ethics and politics, in order to tease out the implication thereof for our use of eScience.

First, I show how the question of 'how to live well' is answered at this intersection between the ethical and the political. Second, I explore how Aristotle's focus on this question, at this intersection, makes him such a rich resource for thinking through modern problems that occur at the forefront of technological innovation. In this, I outline the two kinds of questions which his ethical-political perspective allows us to ask in evaluating the value and appropriate use of tools and technology available to us today. Third, I focus in on the nature of eScience, and situate it in relation to ethical-political life. Here I take up an Aristotelian perspective a specific instance of the application of eScience with political implications; targeted advertising and big data. The purpose of this specificity is to show at what level Aristotelian ethics may help us to consider eScience applications.

39.3 <u>Aristotle's ethical polis</u>

Aristotle opens the 'Nicomachean Ethics' by framing it as a work of political philosophy (Crisp, 2000, p.3-5). This opening might be easily overlooked for the rich content which follows, but I think that it is fruitful to pause here and take this framing seriously. An implication which might be drawn from this is that in describing the ethical life, one cannot but make statements about political life.

However, while individual ethical actions play out at the intersubjective, political level, we may take this as more than just a practical point about the effects of human actions at the level of society. In fact, this view about the necessary interdependence of ethics and politics derives from Aristotle's conception of human nature; that we are political and social animals. In the Politics, he writes;

> [M]an is by nature a political animal. And who by nature and not by mere accident is without a state, is either a bad man or above humanity (Jowett, 1984, p. 5)

Aristotle believes that it is essential to honour this unique nature of humans in our ethical and political activities.

In distinguishing what it is that constitutes a good life, Aristotle looks explicitly for a definition which captures what it is about humans and human lives that is distinct from other animals. For him, the highest good must be consistent with the maximization of our faculties as human beings. Thus, in framing 'the good' in this way, he excludes from the purpose of a good life the mere pursuit of pleasure. He sees this as an animalistic drive, one which is not peculiar to humans. However, when he turns to the distinctly human activity of the pursuit of honour, he also dismisses this as an inappropriate highest good. This is because honour has much more to do with how one is perceived by others than it has bearing on one's individual character. Lastly, Aristotle considers the accumulation of wealth as a possible good that humans might direct their lives towards, but he dismisses it on the basis that wealth is only a tool or a resource for achieving other ends/goals. It is interesting to note that he does not reject the pursuit of wealth on the basis that it is particularly morally corrupt to accumulate wealth. Rather, the pursuit of wealth cannot be the purpose of human life, because it is only a means to our other goals.

Instead, Aristotle locates the purpose of human life in the pursuit of happiness. This is because there is no further purpose for which we seek to be happy than happiness itself. It is something which we seek for its own sake. This kind of thinking, which locates the ethical by

means of finding a kind of original and irreducible "cause" for human activity, has its foundations Aristotle's thinking in the area of epistemology and causation. For our purposes, it is sufficient to note this point and move on, as what is of concern here is not whether Aristotle's reasoning on this matter is correct, but rather what the implications of this reasoning might be.

Returning to 'happiness', the highest good for human beings. It is crucial to emphasize that happiness should not be seen as related to our previously rejected notion of 'pleasure'. This is because, as you no doubt know, the classical Greek word for happiness - eudaimonia - is far richer than its English counterpart, and contains connotations of blessedness and flourishing. Thus, for Aristotle, "happiness consists in living a life that is blessed" (Adamson, 2014, p. 247). This condition of eudaimonia is not something which comes about easily, rather it takes practice. With practice, one might achieve arête, or excellence, which would support you in the fulfillment of your uniquely human potential to flourish or be 'eudaimonious'.

Excellence is tied, again, to what it is about humans that is unique, namely the ability to reason. Living a good, eudaimonious life involves practice in spending time in intellectual contemplation and learning, considering both abstract principles and involving oneself in intellectual and/or scientific experimentation. This theoretical and practical reasoning would develop in us the intellectual virtues, helping us to become wise. However, being wise does not just consist in being learned or clever, it also consists in having a good character. While the intellectual virtues are developed through learning, character virtues are developed through life experience.

Furthermore, this ability to achieve eudaimonia through reasoning and experience or habituation is not a purely individual or subjective responsibility. For Aristotle, humans are rather poor judges of what will make them happy, as well as poor judges of their own character and of what is good for them (Adamson, 2014, p. 247). For this reason, we must define and carve out our lives in relation to an external measure. This measure is what Aristotle provides in his 'Ethics', namely the doctrine of virtue and the golden mean, which outlines at least 12 core virtues, of which a few are courage, temperance, liberality, wit, modesty, truthfulness, being properly proud and friendliness. Ethical or virtuous action consists in expertly judging, in a case by case manner, which behaviour in a particular situation is consistent with these virtues. This involves choosing the mean or middle-point between either weak or excessive behaviour.

Now let us place this ethical doctrine in relation to Aristotle's political philosophy, emphasizing the point made at the outset of this speech about the intimate connection between these two spheres of human concern. According to Aristotle, the two main categories of virtues (i.e. the intellectual and character virtues, of which the specific virtues form a part) are developed through inculcation (education) and practice, so that acting virtuously becomes a habit. The activities of education and practice, however, require social and political circumstances which support them. Thus, a certain level of political organization is necessary so that citizens are encouraged and guided in the development of virtue, towards the achievement of eudaimonia.

For Aristotle, the ideal political organization for the maximization of human flourishing is the city or 'polis'. The size of what we would today define as a small city is, according to him, an ideal setting which can be engineered to support human development. Crucially, participation in this public life is something unique to humans, as we are 'political animals'. Thus, "the proper goal of the city is closely related to the proper goal of the individual" (Adamson, 2014, p. 265). Where the Ethics outlined how eudaimonia might be achieved through living a life of learning and practice, the Politics is concerned with how to organize

collective life to facilitate this. In other words, "the point of political affairs is to promote the good life of all its citizens" (Adamson, 2014, p. 265).

39.4 Applying Aristotelian thinking to issues in modern life

While the world today is markedly different from the context in which Aristotle's thinking was shaped, we may synthesize what an Aristotelian perspective might allow us to grasp about contemporary issues, as other intellectual figures such as the economist Amartya Sen, the philosopher Martha Nussbaum, and the biologist Conrad Waddington have done.

From the summary above, an outline of Aristotle's notion of virtue for individuals and the role of political organization in developing virtuous individuals has emerged. If we take these ideas seriously, we may use them to interrogate phenomena in our modern environment. Two strategies for this interrogation emerge clearly from Aristotle's ethical-political philosophy.

On the one hand, we may use his insights to ask how a phenomenon hinders and/or supports individuals in becoming more virtuous. On the other hand, we may use his insights to tease out how a phenomenon impacts on the political sphere and collective life. In this second case, we would ask whether it helps or hinders the general promotion of conditions which support citizens in trying to live virtuous lives. This question has relevance at the level of the state and local government, but also has a more general relevance for phenomena with a social impact.

In the following section, we will be asking these two kinds of questions in relation to an application of the work of eScience. This involves firstly giving a brief take on the nature of eScience and how it is applied, and then connecting this to targeted advertising and big data. Thereafter, we look at how Aristotelian thinking may be used to evaluate this phenomenon.

39.5 An Aristotelian perspective on eSience

As a philosopher, my passion for definitions dictates that we kick off this section with clear language, which will do much to simplify our discussion of increasingly complex phenomena. Below I put forth a succinct definition of eScience, before looking at the particular application thereof in advertising and its ethical implications.

Various platforms have put forth a definition of eScience – what I present here is a synthesis of three different sources' framing of eScience, namely that of; (1) Plan-E, the Platform of National eScience Centers in Europe, (2) the IEEE International Conference on eScience, and (3) Prof. Martin Hilbert of the University of California and the Information Society Program of the United Nations Secretariat for Latin America and the Caribbean.

According to these sources, eScience is the response of science to the digitization of data. The main activities of eScience lie in developing methods to support scientific research in its engagement with the vast amounts of data that is now available through digitization – also called Big Data. This support takes the form of the creation of computational tools and infrastructures that can process immense amounts of information. However, it also takes the form of specific technical support as characterized by either individual or large teams of eScientists who aid other scientists, from other fields, that are trying to engage with this data. eScientists' work ranges from data technicians who develop and maintain massive e-infrastructures, to the work of helping scientists to visualize and analyze their data. In short, eScience applies computer technology to modern scientific inquiry.

While this work of eScience might appear rather innocuous at first glance, the power which eScience bestows on those with access to it may be cause for concern. This becomes apparent when we turn to the area of government, or to the domain of multinational corporations (MNCs) and targeted advertising.

39.5.1 Aristotelian virtue, targeted advertising and big data

The phenomenon of targeted advertising would be impossible without both the massive digitization of consumer data and the application of eScience to this data, so as to sort, filter and use it to target individual consumers. This targeting is sophisticated in that it is almost invisible – it manifests as 'naturally occurring' items in the landscape of one's online experience (Lynch, 2016).
Much has been written about the (im)morality of advertising. In the past, before massive digitization, "advertising has been charged with a number of ethical breaches, most of which focus on its apparent lack of societal responsibility" (Treise, et. al., 1994, p. 59). Recently, those working within the advertising industry have become concerned about the ethics around 'new' media and targeted advertising (Drumwright & Murphy, 2009). What would Aristotle have to add to this discussion?

Firstly, we should turn to the core issue of virtues, and their opposing vices. Here there is an obvious and worrying connection to advertising, as advertising appeals to the worst and most insecure parts of ourselves in the attempt to convince us to consume in certain ways. Thus, advertising actively thwarts our efforts at virtuosity in the interest of profit. But what might the added, modern feature of targeting advertisements to consumers through collecting massive amounts of data about their preferences mean in an Aristotelian perspective?

Here, an Aristotelian view has some limitations, as the discourse of autonomy and privacy which is implicated in the phenomenon of targeted advertising is not available to us. Thus, at the level of individual virtue, the problem of targeted advertising is simply the same as the older problem with 'traditional' advertising – it encourages people to give in to their vices. However, if we take this problem to scale – that is, if we zoom out to the level of social and political impact – we may look at the problems with manipulating citizen's free choice and the problems with decreased individual privacy as political issues. From this perspective, Aristotle allows us to claim that the use of eScience in the pursuit of targeted advertising creates structural conditions which make it progressively more difficult for citizens to practice virtue. In essence, the culture of consumerism becomes so all-pervasive that it traps citizens in a situation which thwarts their ethical education and growth. The implication of this is that states and local governments have an obligation to curtail the use of eScience in the service of advertising generally and targeted advertising specifically.

39.6 Conclusion

What this analysis has shown is that Aristotle's ideas about ethical-political life help us to evaluate modern scientific and technological applications of data. It does this by offering us two useful questions to pose when encountering a phenomenon which touches the lives of citizens, namely 'how does this impact on an individual's ability to practice a virtuous life?', and 'what are the implications of this phenomenon if scaled to the level of social, cultural and

political life?' Having looked at the specific phenomenon of targeted advertising, we may note here that there are a whole host of eScience applications which touch the lives of citizens, such as, for example, state surveillance technology, or open access sources. For these phenomena, Aristotle offers us a lens which centers the individual's well-being. This a very useful heuristic tool to employ when considering the development and application of technology in the service of human activity. For Aristotle, any technology which can thwart the development of virtue, or distort the socio-political conditions which enable citizens to develop virtue, is suspect.

39.7 <u>References</u>

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