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The Domestic Use of Drones: An Ethical Analysis of Surveillance Issues

Abstract: *Drone surveillance can be regarded either as a justifiable, impartial practice serving the interests of all or as an oppressive technique catering to the interests of some at the expense of others. This analysis is an effort to weigh the ethical prospects and problems in the use of unmanned aerial vehicles by asking whether surveillance of civilians is ethical. To address this question, classical philosophical and modern behavioral approaches to ethics are used. The inquiry begins with the importance of the issue, followed by its evolution and current status. After describing the method of analysis, the article examines arguments for and against domestic monitoring. The unique utility of drones can accomplish much in the public interest while simultaneously creating moral hazards. The conclusion discusses accountability standards, model legislation provisions, and regulatory criteria for aerial vehicle surveillance.*

Practitioner Points

- Model legislation would contain provisions for warrants, weaponization, data collection and retention, and reporting of drone use in the name of the greater good, do no harm, and virtue.
- Robust regulation and oversight are needed to allay concerns that surveillance is based on expediency instead of safety, privacy, and accountability.
- Those who implement drone surveillance should carefully consider the voice of the surveilled, evaluate monitoring for mutual institutional-individual advantage, and balance protecting the public good and safeguarding individual freedom.
- More generally, in thinking about supporting or opposing drone surveillance, consider the expected results ("Which decision produces the greatest good for the greatest number?"), principles and rules ("Would I want everyone else to come to the same conclusion?"), personal character ("Does this decision improve my character and that of my community?"), and bias ("Is my decision flawed by cognitive illusions and behavioral biases?").

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A drone is a remotely controlled or completely automated aircraft. The diffusion of these airborne devices, initially designed to gather military intelligence, into civilian life is largely attributable to low-cost micro-electronics, lightweight construction materials, as well as advances in computing, global positioning, imaging, signal processing, and communication technologies. Business analysts anticipate a robust market for these machines: by 2020, it is estimated that at least 30,000 unmanned aerial vehicles (UAVs) will be in the nation's skies, serving a wide range of public, private, and commercial functions (Leahy 2013).

The 2012 Federal Aviation Administration (FAA) Modernization and Reform Act, in fact, required the integration of drones into the national airspace by late 2015. The FAA missed that deadline because of staff shortages and the complexity of the issues, and it is not expected to fully implement the law until mid-2016. Until then, corporate use is prohibited without approval; military and civilian agency drones require FAA certification. The act nonetheless suggests a promising future for aerial robotic craft, one enthusiastically supported by bipartisan drone caucuses in both houses of Congress. Indeed, recently released draft regulations "are expected to lead to a revolution in commercial aviation" (Whitlock 2015).[1]

The rapid development of this technology suggests the need to shift from what these airborne devices can do to how they should be used. The issue is not whether UAV engineering will expand but rather how it will evolve and what changes may be desirable. The purpose of this analysis is to explore the ethical implications inherent in surveillance—the primary use of uninhabited aircraft. The background section reviews the ubiquity and types of these domestic droids. The core of the inquiry examines arguments for and against aerial robots, using classical philosophical and

modern behavioral approaches to ethics. The conclusion discusses guidelines for the present and future use of this technology.

Background

Unmanned aerial vehicles are not new (e.g., Villasenor 2013, 462–64), but since the terrorist attacks of September 11, 2001, their worldwide use in military and civil applications has increased dramatically.[2] These machines are the signature weapon of modern warfare, as more than 90 nations use them for reconnaissance, intelligence collection, and targeting. The U.S. Department of Defense has well over 7,000 airborne drones compared to just 50 a decade ago (Boussios 2014, 388; Saylor 2015).

With the drawdown of the wars in Afghanistan and Iraq, the business strategy of UAV manufacturers depends on expanding their market to civilian uses. The industry predicts $82 billion in economic benefits and expects to create 70,000 jobs in the first three years of drone diffusion into the nation's skies and more than 100,000 jobs by 2025 (AUVSI 2015). Customers currently include police departments, universities, Google, state transportation departments, and dozens of federal agencies. Many other organizations, including *National Geographic,* insurance companies, real estate firms, detective agencies, the mass media, filmmakers, and agribusiness, are interested in using this robotic technology.

> The ethical ramifications of drone surveillance need to be considered because they are often overlooked or submerged into other decision-making criteria.

The growing presence of these devices is driven by their capacity to do "dull, dirty, dangerous" tasks, such as all-weather, all-terrain search and rescue missions; law enforcement reconnaissance and pursuit; emergency management surveys of fires, volcanic activity, earthquake zones, and nuclear reactor malfunctions; infrastructure inspections of pipelines, towers, and borders; crowd control; oil and gas exploration and mapping; and point-to-point delivery of goods. Before the decade is out, the use of versatile, uninhabited aircraft may become commonplace.

In recent years, engineering advances have combined to produce a remarkable differentiation of drone technologies: there are some 1,500 types of unmanned aircraft in production in a variety of sizes and shapes, from extremely small nanomachines to those as large as a charter jet with the ability to be nearly anywhere and see anything for any purpose (Goldberg, Corcoran, and Picard 2013). Some are cheap and easy to fly so that they can be carried in a backpack, assembled, and launched in minutes. Others, as small as insects, can fly undetected into buildings to track, photograph, and attack targets with weaponry, both lethal and nonlethal.

Airborne robot technology, in short, is characterized by complex multimodal systems that provide unblinking eye-in-the-sky coverage carrying high-resolution video cameras, infrared sensors, license plate readers, facial recognition programs, listening devices, weapons, gyroscopes, accelerometers, wireless transmitters, thermal imagining, GPS navigation, and other high-tech capabilities (Finn and Wright 2012). Just as the Central Intelligence Agency uses these aircraft in foreign countries, key stateside purposes will be for surveillance-like functions such as crime fighting, disaster relief, immigration control, environmental monitoring, and scientific research.

Following the long-standing link between military technology and its subsequent adoption by law enforcement, local and state police departments are expected to be among the largest users of unmanned aerial vehicles (McDougal 2012), as these agencies have deployed droids for more than 10 years (Salter 2014, 169). In fact, "it's not uncommon," according to the American Civil Liberties Union, "for the police to use a new technology in secret for as long as they can, and then allow the courts to sort out legality once the issue finally comes to them" (Crump 2013).

It is prudent, therefore, to consider whether drones are as efficacious as their manufacturers suggest.[3] In seeking a balance of conflicting claims, the ethical ramifications of drone surveillance need to be considered because they are often overlooked or submerged into other decision-making criteria. As Talia observes, UAV "capability is exponentially greater than other investigatory tools" (2014, 737) because of its protean nature. In fact, scholars point out that little ethics research exists on robotic aircraft use in civilian, as opposed to military, contexts (Adams and Barrie 2013; Clarke 2014; Franke 2014). At this writing, there is just one contribution on a field-specific topic (Culver 2014), using a single philosophical perspective.

Automated flight technology, in sum, holds possibilities that were science fiction a generation ago; in an age of aerial drones and big data, what was once invisible and meaningless is now made visible and meaningful. As surveillance has become capital rather than labor intensive, aerial monitoring will be increasingly easy to do. The line between public and private spheres will be further blurred, and this may profoundly change the character of civic culture. With the "gold rush" mentality surrounding the commercialization of drones—thousands of jobs and billions in revenue are potentially in play—it is critical that stakeholders confront difficult questions, avoid hurried judgments, and employ reliable policy-making processes.

Methodology

A variety of decision-making strategies could illuminate whether drone deployment is ethical, but two are particularly helpful because their comprehensive scope reduces the chances of an incomplete assessment: the ethics triad and behavioral ethics (see table 1).

The ethics triad or triangle (Svara 2015; also see Svara 2014) recognizes the complementarity and interdependence of the imperatives in three schools of thought based on the results of an action (consequentialism or teleology), pertinent rules (duty ethics or deontology), and personal integrity or character (virtue ethics).

When considering results, the question is, "Which policy produces the greatest good for the greatest number?" (e.g., "Would I want my decision to be in the newspapers tomorrow?"). In contemplating rules, the issue is, "Would I want everyone else to make the same decision that I did?" (e.g., do no harm). From the virtue ethics vantage point, one might ask, "What would a person of integrity do?" (e.g., seek the "golden mean" between the extremes of excess and deficiency; courage, for instance, is the mean between foolhardiness and cowardice). This inclusive yet succinct tool can

Table 1 Philosophical and Behavioral Methodologies: Complementary Approaches

(A) The *philosophical approach* includes three schools of thought based on:

	Consequentialism or Teleology	Principle Ethics or Deontology	Virtue Ethics
Consideration of results, rules, and virtues, this "ethics triad" can enable a balanced, defensible decision (Svara 2015)	Expected results of an action	Application of moral rules	Personal character
Employing "Ockham's Razor"* to cut to the essence of an argument, three queries can be posed:	Which decision produces the greatest good for the greatest number?	Would I want everyone else to come to the same conclusion that I did?	Does this decision improve my character and that of my community?
An overemphasis on one school of thought, at the expense of the others, risks:	Expediency	Rigid rule application	Self-justification

* Use the simplest possible explanation of a problem and only make it more complex when absolutely necessary. Adding qualifications, explanations may make a position less elegant, less convincing—and less correct.

(B) *Behavioral ethicists* believe that to improve policy making, psychological tendencies leading to unethical decisions should be taken into account. To explain human actions, insights such as the following are germane:

(1) Bounded rationality	(2) Decision framing	(3) Confirmation bias
Human rationality is constrained by the situation and cognitive limitations	The manner in which a situation is defined can affect the outcome	Gathering information that conforms to preexisting beliefs without objectively evaluating all evidence
(4) Herd behavior	**(5) Action bias**	**(6) Unconscious incompetence**
In cases of uncertainty, people tend to follow the crowd and/or experts because they seem to know more	The felt pressure to do something	Lack of awareness about one's own ignorance
(7) Overconfidence	**(8) Ethical fading**	**(9) Naive idealism**
Overestimating the ability to make sound decisions	Visceral responses become dominant and exclude ethical implications	The belief that one's own view reflects reality and is shared by others

provide a defensible evaluation by teasing out the underlying logic by which decisions are justified (for further discussion, see Bowman and West 2015). However, the overreaching application of a single perspective, at the expense of the others, holds considerable dangers: expediency (results-based ethics), rigid rule application (rule-based ethics), and self-justification (virtue-based ethics). In light of the shortcomings of the individual perspectives, it is evident that this eclectic, amalgamated technique can be helpful.

Nonetheless, the philosophical method has been criticized for its failure to link moral theorizing and ethical action (Gazzaniga 2008). This suggests that other factors—unconscious biases, moral emotions, unintentional blindness—are likely to affect conduct (Shao, Aquino, and Freedman 2008), as shown in table 1 (panel B). Behavioral ethicists believe that to improve policy making, psychological tendencies leading to unethical decisions should be taken into account. Thus, for example, bounded rationality and decision framing—as well as action bias, herd behavior, and ethical fading—can lead to unintentional minimization of genuine moral concerns. Similarly, naive idealism (such as confirmation and overconfidence biases) could mean a failure to involve important stakeholders in policy making and implementation decisions. Behavioral ethics ideas are not necessarily new; what is new is the growing evidence that behavior is less under conscious control than previously believed. Subliminal cognitive tendencies, feelings, intuition, and perceptions are at least as important in affecting conduct as logic, reason, and calculation.

The heroic assumptions of the philosophical approach—that individuals are ostensibly and universally logical, possess full information, and have the willpower to use it—often do not hold in real life. For Bazerman and Tenbrunsel (2011), the goal is to be prepared for the unconscious psychological forces that routinely affect decisions. In short, while the philosophical approach focuses on what constitutes a balanced, ethical decision, behavioral ethics helps predict and explain why a decision may be deficient. It

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does not replace traditional methods but supplements them to better describe how moral choices are made.

Although the philosophical and behavioral ethics analyses may not produce definitive answers, they do provide direction by assessing the reasoning used to explain conduct. Individual ethical theories may lead to different evaluations of drone monitoring, but these differences must be assessed, not passed over. Neither the presence nor absence of robotic aircraft is obviously good or bad, as both can be problematic.

Given the adolescence of the drone era, the lack of agreed-upon metrics makes it difficult—and crucial—to scrutinize the promise and problems of UAV operations. To take into account contending interests, domestic aerial surveillance will be investigated using the classical philosophical perspective, followed by a behavioral ethics examination. The study, which is intended to provide equal space to competing claims, reflects the nature of the literature. Because work on perceived drawbacks of drones is more extensive than benefits, critics receive more attention than supporters.

Findings

Technology is often seen as neutral, but each technology has embedded values, and the decision to deploy it is to adopt those values (cf. Alder 1998; Martin and Freeman 2003). Drone surveillance can be regarded either as a justifiable, impartial practice serving the interests of all or as an oppressive technique catering to the interests of some at the expense of others. The discussion here weighs the ethical problems and prospects in the use of these vehicles.

The analysis focuses on general arguments and principles that can be applied to particular circumstances to test their relevance. It refrains from examining highly technical aspects of drones or their precise policy provisions. Case-specific details—the host organization and its members, the environmental context within which it

operates, as well as the characteristics of the surveillance system and how it is implemented—are important, but fundamental principles are at least as compelling. As will be seen, the inquiry is necessarily speculative, and although affirmative and negative contentions raise significant concerns, few are conclusive.[4]

Results-Based Analysis

In consequentialism, the best policy results in "the greatest good for the greatest number." What is right is that which creates the largest amount of human happiness with the least harm. This utilitarian approach is helpful in seeking the common good. Accordingly, the advantages and disadvantages of drone surveillance are examined on the grounds of cost-effectiveness.

In Support of Surveillance

Advocates contend that monitoring facilitates maximization of resources and minimization of loss, thereby enhancing cost-effectiveness. The unprecedented characteristics of UAVs act as a force multiplier to transcend practical restraints in traditional surveillance. For example, public safety departments, long constrained by the limits of manned aerial monitoring, see sky robots as cheaper and more efficient than helicopters and other aircraft. The cost of a small device is well under $50,000, and its operating expenses range from $25 to $75 per hour, compared with $200 to $400 per hour for a helicopter (Johnson 2014). Potentially revolutionizing police work, pilotless planes could become a critical crime-fighting and public safety tool in the years ahead. Thus, if monitoring is for a legitimate purpose and is properly authorized, then it may be an economical way to satisfy the interests of the majority of citizens. Properly designed and implemented, drone surveillance promises sound policies and objective administration of the social contract, thereby fostering procedural and distributive justice. So long as there are checks and balances, social cohesion and equity can be maintained. Many people grant the need for effective governance and see monitoring as a means to securing collective obligations, fairness, and a sense of community.

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In Opposition to Surveillance

The very technical features that attract officials to drones concern skeptics, as the positive uses of drones can distract attention from the dangers they pose. It should be evident, opponents argue, that this technology is more than merely one more innovation. Because these vehicles are readily available and can operate surreptitiously, they can overcome the cost, duration, and range limitations that have restricted law enforcement practices in the past. It is not unreasonable, in light of the 2013 National Security Agency (NSA) exposé, to suggest that operators might take undue advantage of these new tools (Nevins 2011).

Critics also point out that, while unmanned, these machines still require ground pilot and maintenance support. A Customs and Border Protection Inspector General investigation (U.S. Department of Homeland Security 2005) found that while procurement outlays may be less than those for manned aircraft, operational expenses are more than double. Selected police departments have not used their aerial robots because of that expense (Salter 2014,

171). A Congressional Research Service analysis concludes that "the life cycle costs of UAVs could actually be greater than of manned aircraft" (Haddal and Gertler 2010, 5). In short, "the drones most law enforcement agencies can afford are currently less capable than their manned counterparts" (McNeal 2014, 2).

Further, most drones not only lack the anti-collision transponders common in piloted planes but also are vulnerable to electronic attack (Goldberg, Corcoran, and Picard 2013). Based on military experience, these machines also have a greater tendency than conventional aircraft to malfunction, as their accident rate is 100 times that of traditional airplanes (Bone and Bolkcom 2003; also see Boyle 2012; Salter 2014). In fact, the Congressional Research Service indicates that existing studies have concluded that manned aircraft are more reliable than flying robots. The president of the Border Patrol Union states that "[u]nmanned aircraft…are not economic or efficient in civilian law enforcement applications" (Haddal and Gertler 2010, 6). Depending on the type of drone, then, technological *cost-effectiveness* may be contestable.

In addition, monitoring includes a psychological dimension of cost-effectiveness, as it can impact the government-citizen relationship, giving more power to institutions. Few individuals operating behind the Rawlsian "veil of ignorance" would, a priori, approve of indiscriminate surveillance (Rawls 2005). Not only is there a concern for creating panoptic effects (e.g., not knowing when one is watched, resulting in acting as if one is always being watched), but who monitors the monitors? Government (and business), critics believe, seem to regard monitoring of people to be their prerogative (Michael 2014).

Such observation can increase suspicion, fear, distrust, resentment, and hostility among the observed as the right to privacy is diminished (Lim 2002; Sarpong and Rees 2014; Schulman 2001). Detrimental effects occur when surveillance is used to intimidate and punish; it can also take the form of voyeurism, identifying whistle-blowers, and creating pretenses to investigate citizens (Ciocchetti 2011). Done surreptitiously—the Federal Bureau of Investigation (FBI) operated a secret drone program for years prior to 2013 (Weismann 2015)—a program's negative effects can be amplified once it is discovered. When monitoring backfires, it can result in resistance, noncompliance, and retaliation.

From a results-oriented perspective, in sum, what is ethically correct is the consequence of an action. The implications of the dependency asymmetry between institutions and individuals suggest that surveillance could be cost-effective. Drones, however, can be expensive because of operational costs and questionable reliability. The organization–individual relationship, furthermore, can have ill effects on those affected by it. The dignity of, and the respect for, the citizen is at stake. Constant observation can be an assault on the ethical rights of the populace, compromising personal autonomy (Michael 2014).

Yet an overemphasis on any single part of the ethics triad may produce a problematic decision. Advocates might think that the

greatest benefit is found, but perhaps the decision is simply expedient. Opponents, in seeking the most good, may be vulnerable to opportunistic, self-serving behavior. In the discussion of the effects of deployment, both sides rely on prediction, the accuracy of which is a well-known weakness in human behavior. In light of these concerns, attention now shifts to the second school of thought.

Principle-Based Analysis

In principle-based decision making, certain actions are inherently right (e.g., promise keeping) or wrong (e.g., inflicting harm), irrespective of their predicted consequences. This approach is useful because officials are expected to follow the principles found in the U.S. Constitution, court cases, laws and regulations, and organizational codes and policies. In deciding what rule to apply, the person asks, "Would I want everyone else to do what I did?" (stated differently, "what is good for one is good for all"). In examining competing positions on surveillance, the emphasis here is on two elements: fairness and privacy.

In Support of Surveillance

The more informed a government is, the better decisions it can make. Advocates hope to foster *fair* treatment of individuals and avoid capricious actions; public institutions have a responsibility to use technology appropriately by gathering accurate, consistent, and impartial information. In point of fact, the many diverse reasons for surveillance discussed earlier are aimed at maximizing productivity while minimizing waste and improper behaviors. Adherence to best-practice policies—democratically approved surveillance system design, including knowledge of implementation procedures (Alder 1998)—can mitigate objections.

Second, surveillance also raises *privacy* concerns, as it makes people more visible and traceable. During the last decade, ground video monitoring has become the "new normal," as monitoring is now expected in daily life.[5] Airborne drones, it follows, can be seen as just another manifestation of the use of technology for the social well-being. It is contended that they do little more than helicopters already do. Federal agencies are required by the 2002 E-Government Act to prepare privacy impact assessments before authorizing programs that collect data; these statements must stipulate the purpose for, use of, and access to the information gathered. To the extent that robotic aerial platforms provide increased security at the expense of privacy, many may find the trade-off acceptable. An Ipsos/Reuters poll, for example, reported that 68 percent of respondents favored the use of drones in crime fighting, and 62 percent believed that their use operates as a deterrent (Ipsos 2015). Observation, moreover, can have a deterrent effect—if someone has nothing to hide, then there is nothing to fear. While there have been unfortunate incidents such as the 2013 Edward Snowden disclosures of the NSA's data collection programs, the resulting problems apparently were not serious enough to cause major policy changes.

Finally, the Fourth Amendment includes a reasonable expectation of privacy, and police would be required to obtain a search warrant prior to drone use (Dunlap 2009; McBride 2008). It does not allow law enforcement to use cameras to surveil individuals without probable cause and due process (McDougal 2012, 99).

> Citizens doubt that the benefits of drones outweigh the risks to privacy; the deterrent effect on illegal behavior claimed by advocates may be less likely than the chilling effect on lawful activity.

Villasenor concludes that the "Amendment has served us well since its ratification in 1791, and there is no reason to suspect it will be unable to do so in a world [of] unmanned aircraft" (2013, 461).

The upshot is that privacy can be safeguarded by law-abiding behavior and by the Constitution. President Barack Obama's recent executive order further bolsters privacy protections by requiring federal agencies to disclose where they fly UAVs and what they do with the data (Whitlock 2015). Likewise, the 2015 reauthorization of the Patriot Act (the USA Freedom Act) ended the unauthorized bulk collection of telephone records by the NSA; these data, however, are still available by court order from telephone companies, and the government retains the authority to surveil by other means.

In Opposition to Surveillance

Surveillance often overreaches and is neither *fair* nor necessary. As Ball and Margulis point out, consent to surveillance is "rarely, if ever, freely given [as it] serves to perpetuate existing inequities and creates new ones" (2011, 115). Monitoring violates both the categorical imperative ("what is good for one is good for all") and the "golden rule" ("do unto others as you would have them do unto you"). Officials would be reluctant, for example, to accept citizen monitoring of their behaviors. Detrimental to people, aerial scrutiny promotes a climate of distrust. Surveillance, then, can violate human rights by harming the quality of life, demeaning the individual, and treating humanity like property.

In addition, monitoring holds the potential to usurp individual *privacy.* The privacy issues mentioned earlier—drone technical capacity, privacy impact assessments, the "nothing to hide" argument, and Fourth Amendment protections—are revisited here. First, although uninhabited aircraft in some respects represent just another step in technological progress, they are unprecedented in the surreptitious ability to watch from above for long periods of time, magnifying the risk to privacy. Second, while privacy assessments are intended for public consumption, the FBI (unlike the Department of Homeland Security) long refused to release its drone impact statements (Musgrave 2015).

Third, the nothing to hide concern is misplaced; the issue is not what people want to conceal but the power of institutions. Even if an individual has done nothing wrong, organizations can cause harm. The unequal relationship between government agencies and citizens, for instance, is exacerbated when critical components of privacy—the command that people have over their confidential information and their control over the access that others have to it—are subsumed by the state (Knapp and Soylu 2013). The problem, then, is not simply about secrecy but also "accumulation" (compiling and interpreting small bits of data) and "exclusion" (being barred from learning how information is used) (Solove 2011). Stated differently, are the right things being surveilled for the right reasons—and how is that known? Although some polls suggest that respondents support drone deployment, they are less enthusiastic about UAV use in routine law enforcement (Lowy and Agiesta 2014; Murray 2012). Citizens doubt that the benefits of drones outweigh the risks to privacy; the deterrent effect

on illegal behavior claimed by advocates may be less likely than the chilling effect on lawful activity.

Personal privacy, further, does more than protect information: it "is so integral to our identity and autonomy that it [is]a social good fundamental to our society" (Martin and Freeman 2003, 357). Privacy is not just an individual right but also a social good: the presumption of freedom from being constantly watched and the ability to create one's persona in an authentic manner. Critics believe that omnipresent technologies are a weapon to control and spy on citizens (Lee 2007). A 2014 Associated Press poll found that privacy and safety concerns override the potential benefits of the incipient drone revolution (Lowy and Agiesta 2014). The NSA's routine and indiscriminate collection of information on millions of people demonstrates the risks involved.

Finally, sources of individual privacy—the Fourth Amendment, common law, statutory law—are limited (Knapp and Soylu 2013), as there is no comprehensive federal privacy law. A Congressional Research Service examination of Fourth Amendment jurisprudence—which regulates how, when, and where government may conduct searches and seizures—reveals that it may provide very little protection against drones (Thompson 2013). The U.S. Supreme Court has not yet ruled on unmanned aerial surveillance and privacy; the relevant case law precedents, however, demonstrate that it will be difficult to find a reasonable expectation of privacy in an era of UAV monitoring (Farber 2014, 22, 24).

Indeed, law enforcement authorities "have begun deploying drones for routine domestic surveillance operations, unrestrained by constitutional scrutiny" (Talia 2014, 729). Voss concludes that under the Fourth Amendment, "there seems to be no legal impediment to the use of drones for surveillance in most instances…even without a court warrant" (2013, 178). It should be noted that pervasive monitoring also impacts First Amendment freedoms, as it could chill both free speech and free assembly. As for state legislation, lawmakers have been active in attempting to regulate surveillance; 26 states have enacted laws defining drones and how they can be used. Selected legislation has focused on the need for warrants, the protection of privacy, and the prohibition of weaponizing drones.[6] Smith (2014) nonetheless finds that many laws contain few meaningful restrictions on UAV utilization.

To summarize, advocates see an ethical duty to ensure that societal resources are well managed. If UAV policy is a product of democratic decisions, such concerns may be satisfied. To the extent that it is improperly done, however, monitoring must be considered unethical. Kantians presume the duty to treat individuals as ends, not means to some supposed good. Adam Smith would also object to monitoring because of its lack of sympathy, natural harmony, and generosity, generally failing to promote societal well-being (Hodson, Englander, and Englander 1999).

Applied to surveillance, the obligation is to ensure fairness, protect privacy, and contribute to a healthy community; broad, deep monitoring policies can create unnecessary harm. Yet relying exclusively on principle-based analysis could provide inadequate guidance and induce rigidity.

Virtue-Based Analysis

In virtue ethics, answers to the question "what to do?" have little to do with results or rules and everything to do with the kind of person one is. Character, then, offers a third perspective when assessing the advisability of drone surveillance. It asks, "What would a person of integrity decide?" and "Does a proposed policy improve individual and community character?" This philosophy is compelling because it is a personal approach to ethics—that is, decisions are not so much informed by consequences and duties but by the quality of one's moral fiber.

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While no definitive list of virtues exists (the theory avoids formulaic thinking and emphasizes moral identity instead), a virtue is an excellence or trait. It is found between the extremes of excess and deficiency, Aristotle's "golden mean"; to illustrate, friendliness is the mean between grouchiness and promiscuity. In every situation, a person will determine the mean—neither excessive nor deficient—based on reason and experience appropriate to the circumstance. A preeminent virtue—*integrity* (a product or synthesis of virtues such as honesty, moderation, justice, and the prudence to recognize ethical challenges and respond)—is integral to moral nobility.

In Support of Surveillance

What constitutes good domestic surveillance practice includes concern for personal *integrity*. Iedema and Rhodes (2010), for instance, suggest that monitoring makes for better people, as they may become more disciplined and task oriented. To the extent that monitoring is a precise and discriminating tool, it will be used more in a morally discriminating way (Megret 2013). Respect for the moral agency of a person can also serve to mitigate the asymmetry in government–citizen relations. In fact, when coupled with transparency and "government in the sunshine," citizens are regarded more as partners in governance than as subjects; if so, surveillance can promote honesty, moderation, and prudence. Routine clandestine and/or intrusive drone programs, however, are difficult to justify.

In Opposition to Surveillance

Absolute power can corrupt absolutely: it heightens the probability that corruption will occur and that the individual and the public interest will be compromised (Bowman and West 2007). Ethics requires a sound surveillance policy, but even when accomplished, Rosenberg (2005) argues, action contrary to policy prevails because many officials are reluctant to empower people and, instead, monitor them. The NSA's sweeping collection of citizen communications is a clear example. Likewise, if drones are deployed covertly, this indicates that leaders believe that the public lacks *integrity* to perform its civic duties, an approach not likely to contribute to human flourishing.

Furthermore, when subjected to observation and control, Palm (2009, 235) believes, individuals fail to act in concert with their true selves and at the expense of personal integrity. Rather than behave in

accordance with their values and convictions, they engage in adaptive behaviors such as a "manufactured" self, anticipatory conformity, and self-subordination, unworthy of ethical treatment (Brown 2000; Rosenberg 2005, 142, 148). Individual behavior becomes rationalized and people are objectified, manipulated, and devalued, denying them not only voice but also the necessity to regard them as moral agents.

Not only does surveillance increase the chances of negative effects on those observed, but also it does so with respect to UAV operators. Their asymmetrical advantage from centralized power offers manifold temptations. The physical distancing from the surveilled, known as the "morality of altitude," is a form of ethical disengagement contributing to the dehumanization of the observed. The seeming superhuman capacity of drone technology gives law enforcement a potent, disembodied tool that tempts officers to do things that otherwise they could not or would not do; hence, drones are prone to improper use of discretion at the expense of personal integrity (Newman 2012).

From a virtue ethics perspective, in brief, integrity focuses on supporting individual and collective character. Responsible policy makers will ensure that monitoring programs have measures to avoid and correct abusive practices. Yet virtue theory's strength—subjective judgments inferred from personal character—is also its shortcoming: if advocates and opponents of UAV surveillance perceive they are right, they can be convinced that what they do is good.

Behavioral Ethics Effects on Decision Making

While rational decision-making models such as the ethics triad are valuable, behavioral ethics identifies significant shortcomings. This emerging field aims to make traditional rational models more practical by adding insights from psychology, sociology, and neuroscience. Based on the actual behaviors, decision makers are not expected to have perfect information and to act rationally; they are expected to be influenced by cognitive limitations and noneconomic, emotional factors, both conscious and unconscious. Accordingly, decisions are characterized by cognitive illusions as they are frequently error prone and biased.

In light of the unrealistic assumptions about rationality found in philosophical decision models, they cannot adequately describe, explain, or predict how humans behave. People prefer to believe that they are like judges, conscientiously deliberating over the issues and arriving at reasoned conclusions after examining all the evidence; instead, they are more like lawyers, looking for anything that might help make their case. Rationality is very much bounded by the situation and human cognition. Individuals do not have complete information; even if they did, they have less than perfect capacity for information processing to reach an optimal solution. Bounded ethicality, stated differently, may result in an otherwise ethical policy maker making questionable decisions, whether in support of or opposition to monitoring.

Given the nature of surveillance systems, it is not surprising that decisions to adopt the technology may be flawed by behavioral

biases (see Bowman and West 2015 and table 1). Thus, the definition of the situation (decision framing) may be affected by the following:

- What other organizations are doing (herd behavior)
- The desire to take action (action bias)
- Confirmation bias (unacknowledged bias in collection of evidence to coincide with preexisting views)
- Unjustified conviction in one's talent for good decisions (overconfidence and unconscious incompetence)
- Emotional responses to issues (ethical fading)
- Beliefs that others share one's views (naive idealism)

In a world of bounded rationality, choices are embedded in psyches and social norms, and such constraints matter.

> Behavioral ethics introduces considerations such as those noted earlier that can provide insight into decision making and offer an alternative view of the individual as a moral agent.

As Elder Shafir observes, "People do not respond to objective experience; rather, stimuli are mentally construed, interpreted, and understood or misunderstood," and "[t]hings that ought not to matter…often do, and things that ought to matter often fail to have an impact" (cited in Bowman and West 2015, 123, 129). Behavioral ethics introduces considerations such as those noted earlier that can provide insight into decision making and offer an alternative view of the individual as a moral agent.

Drone supporters' bounded rationality, action bias to profit from UAV commercialization, and focus on technical advances tend to downplay drawbacks. Bennett (2011), for instance, argues that any time a tool exists that makes surveillance easier, police will do more of it. Decision framing, as well as ethical fading, can cause unintentional minimization of moral objections. It may be that an initial introduction of UAVs raises few objections, but as use spreads, more legal and ethical concerns will emerge. Naive idealism and overconfidence biases can mean the failure to involve citizens in designing the policy, to keep them informed, and to develop guidelines on use of drones.

Farber quotes Justice Sonia Sotomayor, who observed that "because GPS monitoring is cheap in comparison to conventional monitoring techniques and, by design, proceeds surreptitiously, it evades the ordinary checks that constrain abusive law enforcement practices" (2014, 5). Farber finds that "though aerial surveillance can intrude upon the private lives of citizens in numerous ways, the biggest threat it poses is the nearly limitless expansion of police power" (7). Although the rational approach embodied in the ethics triad suggests a link between sound ethical reasoning and morally upright conduct, behavioral ethics provides a caution to decision makers, maintaining that interpersonal relations and emotion are crucial in understanding moral judgments.

Discussion

Responsible decision makers, by definition, are obligated to develop virtues, respect rules, examine results, and heed behavioral insights. Doing so, nevertheless, cannot produce a final, perfect decision. Instead, an attempt to reconcile conflicting values highlights a key function of policy making: generating alternative viewpoints,

Table 2 Arguments For and Against Drone Surveillance Using the Ethics Triad

	In Support of Drone Surveillance	In Opposition to Drone Surveillance
Question: Which policy produces the greatest good for the greatest number?		
Results	Cost-effectiveness: Maximizes resources and minimizes loss, thereby enhancing cost-effectiveness; sky robots are cheaper and more efficient than helicopters; offers a way to satisfy the interests of the majority of citizens; provides a critical crime-fighting and public safety tool; drones can direct officers to where they are most needed.	Cost-effectiveness: Procurement costs may be lower, but operational costs are higher; drones lack anti-collision transponders and have tendency to malfunction. Some studies have documented the link between monitoring and increased suspicion, fear, distrust, resentment and hostility among the observed (Lim 2002; Sarpong and Rees 2014; Schulman 2001).
Question: Would I want everyone to make the same decision that I did?		
Principles	Fairness: The more informed the government and business is, the better decisions it can make; properly designed and implemented, surveillance promises sound policies and objective administration of the social contract, ensuring procedural and distributive justice.	Fairness: As Ball and Margulis observe, consent to surveillance is "rarely, if ever, freely given in the workplace" (2011, 115); surveillance violates both the "golden rule" ("do unto others as you would have them do unto you") and the categorical imperative ("what is good for one is good for all"). Few officials would accept monitoring of their behavior.
	Privacy: Uses technology for the greatest good; ubiquitous surveillance has become the "new normal"; provides an acceptable trade-off between security and privacy; deters crime; if someone has nothing to hide, then there is nothing to fear; privacy protections already exist.	Privacy: The unequal relationship between organizations and citizens is exacerbated when critical components of privacy—control individuals have over their confidential information and their control over the access others have to it—are subsumed by the state and/or employers (Knapp and Soylu 2013); could chill free speech and free assembly.
Question: Does this improve my character and that of the community?		
Virtue	Integrity: What constitutes good practice in surveillance includes regard for personal integrity. Iedema and Rhodes (2010) suggest that monitoring makes for better people as they may become more disciplined and task oriented. Respect for the moral agency of a person can serve to mitigate the asymmetry in government–citizen relations. In fact, when coupled with transparency and "government in the sunshine," citizens are regarded more as partners in governance, than as subjects; if so, surveillance can promote honesty, moderation, and prudence.	Integrity: When subjected to observation Palm (2009) believes that individuals fail to act in concert with their true selves and at the expense of personal integrity. Rather than behave in accordance with their values, they engage in adaptive behaviors such as "manufactured" self, anticipatory conformity, and self-subordination (Brown 2000; Rosenberg 2005).

systematically evaluating them, and crafting a considered judgment that accounts for behavioral constraints.

The approach used here enables the management of ethical ambiguity and provides help in making the inevitable compromises. An integrated strategy that includes both philosophical rationalism and behavioral realism can facilitate achievement of that goal. The prescriptions found in the former and the descriptions of conduct in the latter contain contending arguments for and against surveillance. Taken separately, a single position may appear ethical at some points and unethical at others. The approach, accordingly, offers choices, not a formula; it informs but does not eliminate the need for judgment.

Neither drone surveillance nor its absence is problem free (see table 2). Looking at each part of the triad in sequence, what, then, is the greatest good for the greatest number? As indicated, it may be realized when cost-effectiveness is enhanced to serve both institutions and individuals. This implies that monitoring, initiated for legitimate reasons, produces the promised results and is not arbitrary or offensive. While courts tend to defer to management, neither the organization nor the individual has absolute rights. The right to govern and manage can be a seductive rationale for finding the greatest good, exceeding what is reasonable and necessary at the expense of important rights; if so, monitoring can be counterproductive.

The second component of the triad, principle-based ethics, focuses on what is good for one being good for all. Properly designed, surveillance promises fair and objective administration of the social contract, thus mitigating objections to being policed. Opponents, however, believe that surveillance often overreaches; consent is seldom given, thereby violating the golden rule and the categorical

imperative, creating unnecessary harm and placing privacy at risk. Because few officials would agree to be monitored, the burden of proof falls on those who would watch others.

Finally, virtue ethics seeks individual excellence and collective well-being. Surveillance proponents argue that monitoring can reinforce the autonomy of individuals by emphasizing integrity and the imperative to better one's self (Iedema and Rhodes 2010). Alternatively, the technology can erode these same characteristics according to critics. In the end, virtue ethics demands a thoughtful decision—neither excessive nor deficient—based on the situation and experience; the choice to use aerial surveillance must enrich the quality of the individual and the community. Yet virtue theory's strength—subjective judgments derived from personal character—is also its limitation: if supporters and opponents of policing behavior believe they are laudable, they are likely to regard what they do as praiseworthy.

The drawbacks of each component of the ethics triad (results: prediction mistakes; principles: rule rigidity; virtue: self-righteousness) highlight the significant biases and errors revealed by behavioral ethics. In an example of ethical fading, Mazzetti describes how killing by drone is done without discernment or remorse:

> Covert strikes came to be morally vacuous matters of routine. As bureaucratic habit overwhelmed ethical sensitivity…even American spies were not certain whom they were killing. Reliant on notoriously inexact intelligence, these…strikes often resulted in…non-combatant causalities. [citing Blee] "In the early days, for our consciences we wanted to know who we were killing before anyone pulled the trigger, now

we're lighting those people up all over the place." Immersed in the bureaucracy, people exercised the State's power without qualm, and without a mind to democratic ideals. (2013, 319)

It is not difficult to identify civilian parallels, including police monitoring of protest marches and the use of nonlethal weaponry.

By anticipating such forces and deliberately considering their influence, officials may ensure that they do not override personal integrity, the categorical imperative, and the greatest good. The prescriptions of the philosophical decision-making model and the descriptions of conduct in the behavioral model, when seen as complementary approaches, furnish a more complete understanding of social dynamics. Both ask decision makers to think about thinking: the first emphasizes intentional judgments, and the second focuses on cognitive illusions and unconscious biases in a decision context.[7]

Policies that incorporate a synthesis of these two models should enhance the quality of decision making.

Conclusion

Drones can benefit both institutions and individuals in the name of the greatest good, duty, and character, especially when tempered by behavioral ethics insights. Because the analysis implies limitations on surveillance, what are some guidelines for effective use? It is challenging to make recommendations without knowing what types of vehicles will fly and the kinds of restrictions that will survive legal review. Notably, however, the lack of a policy and the absence of ethics audits are problematic. Relying solely on the goodwill of officials is not sufficient.

Generally, drone policy should avoid adding to unequal institutional–individual power relations. An imbalance exists because citizens have few rights, as "U.S. law currently provides feeble protections" and offers "a meager right to privacy" (Abril, Levin, and Del Riego 2012, 95, 121). The decision to implement surveillance, for example, often does not consider the voice of those surveilled (Vorvoreanu and Botan 2001). Airborne drone monitoring, it follows, should be evaluated for mutual institutional–individual advantage.

Democratic government is about protecting the public good as well as safeguarding individual freedom. The unique utility of UAVs can accomplish much in the public interest while simultaneously creating moral hazards. The technology can empower people by enlarging their capacities, but without meaningful accountability, it can menace democratic ideals. Accordingly, among the proposals are the following:

- Drone policy transparency and accountability legislation
- Warrants before conducting surveillance
- Restrictions on the kinds of technologies on aerial vehicle platforms
- An independent body to assess the effect of aerial robots on privacy
- A public interest advocate (Farber 2014; McNeal 2014)
- Ethical impact statements for proposed policies (Finn and Wright 2012)
- Limitations on what data are collected and why, how data are

processed, and how long data are stored (Desai and Von der Embse 2008)
- Further development of an "ethical governor" enabling drones to do the right thing (Arkin 2009)
- A digital bill of rights (Hundt 2014)

Model legislation, then, would contain provisions for warrants, weaponization, data collection and retention, and reporting of drone use (Nichols 2014) in the name of the greater good, do no harm, and virtue. For now, the FAA has begun to permit developers greater latitude in experimenting with UAVs' potential, which could assist the agency in finalizing regulations.

Clarke and Moses (2014, 268) argue that many of the criteria for an effective regulatory regime—clarity of purpose, transparency, stakeholder participation, parsimony and enforceability—are currently absent. They conclude that the industry does "not intend to develop operational standards… but rather is waiting for governments to initiate such processes" (279). Thus, the AUVSI Voluntary Code of Conduct is a brief, aspirational public relations effort written to assist in passage of the 2012 Reform Act (Singer and Lin 2012). Likewise, the International Association of Chiefs of Police published recommended guidelines for drone operation, all of which are "preliminary, unenforceable, infinitely malleable, and appear not to have benefited from any consultation with stakeholders" (Clarke and Moses 2014, 279; IACP 2012). What is needed is robust regulation and oversight to allay concerns that surveillance is based on expediency instead of safety, privacy, and accountability. Several steps in that direction are the 2015 presidential directive mandating that the U.S. Department of Commerce work with the UAV industry to develop a voluntary code of conduct and, as noted earlier, ordering federal domestic agencies to reveal where they fly and what is done with the monitoring data.

Monitoring is becoming ubiquitous, and the trend is for "more loss of privacy, …more control…, and necessarily less concern with ethical treatment" (Rosenberg 2005, 150). Ball (2010, 91) argues that there also will be increased use of personal data, biometrics, and covert monitoring. As high-tech invasions of privacy generate litigation, courts and legislatures will be challenged to create sustainable policies. The ethics triad/behavioral ethics discussion here examined important contentions and arguments surrounding the benefits and drawbacks of robotic aerial surveillance. This analysis may be helpful when decision makers apply them to specific circumstances to make informed judgments about the use of domestic drones.

Notes

1. The FAA controls the nation's airspace—500 feet over ground level (except in urban areas, where it is 1,000 feet over the highest obstacle). Although the agency has studied drones since the 1990s, case-by-case approval of drone use is required (Culver 2014, 54ff.); more than 1,000 FAA certificates of authorization have been issued. In 2015, the FAA streamlined the process for drone operators to receive permission to fly for commercial purposes.

2. Indeed, the 2004 Central Intelligence Agency investigation into its abuse of detainees was an important reason to start killing terrorist suspects with drones instead of capturing them (Gilsinan 2014).

3. Domestically, the U.S. Department of Homeland Security Inspector General (2014) found that UAV deployment along the Mexican border is ineffective and five times more expensive than expected. Abroad, despite dramatic drone strikes,

their extensive use in the Middle East has had an uncertain impact on terrorist activities.

4. Indeed, some contending arguments (depending on how they are crafted) could fall into more than one category.

5. For example, the integration of public and privately owned cameras makes "it is virtually impossible to avoid being identified and tracked" in downtown Chicago (Farber 2014, 37).

6. See National Conference on State Legislatures (2015). Also consult the World of Drones site (http://drones.newamerica.org), which operates new, regularly updated, databases on drone regulations and civil drone use.

7. The authors are grateful to one of the reviewers of this manuscript who made this point.

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Authors' Note

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