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# Autobots, Decepticons, and Panopticons: The Transformative Nature of GPS Technology and the Fourth Amendment

BY: VIVEK KOTHARI

## I. INTRODUCTION

A getaway car squeals around a street corner on three wheels, followed closely by at least two police cruisers. Instead of giving hot pursuit, the police slow down slightly and shoot a dart from the radiator of their cruiser that embeds itself into the getaway car. The police then retreat. Unbeknownst to the alleged criminals, their car has been transformed into a homing device, allowing law enforcement to track their movements remotely and without the fuss of a high profile, potentially dangerous high-speed car chase. Law enforcement can simply arrive at the vehicle's destination and apprehend any complicit individuals.

One would only be half wrong to assume that this sequence of events is the product of Tinseltown. The Los Angeles Police Department recently outfitted some of their cruisers with Global Positioning System ("GPS") darts in order to eliminate high-speed chases and the casualties and property damage they entail.<sup>1</sup> The echoes of George Orwell's *Big Brother* are unmistakable. This is the most creative and experimental, application of a GPS device in law enforcement.<sup>2</sup>

In a more common application of GPS technology, law enforcement attaches a GPS device to a vehicle when it is parked in a public space.<sup>3</sup> Officers do so without the owner's knowledge and, more importantly, without a warrant from a "neutral and detached magistrate."<sup>4</sup> These devices enable perfect tracking twenty-four hours a day, for weeks, months, or years at a time at only a nominal cost. Surreptitiously, your participation in a political rally is noted; your trip to the abortion clinic, recorded; your weekly visits to the psychiatrist, revealed.

Indeed, by using multiple devices against one target, the police can easily compile a comprehensive dossier regarding one's individual choices.<sup>5</sup> Consequently, they can learn not only

where you are and where you will be, but also what you have taken with you. The devices cost very little both to purchase and to monitor, enabling law enforcement to track the movements of large groups of people. Law enforcement can then mine that data to create a vivid, detailed digest of your life and record of acquaintances. Currently, only a lack of imagination restrains law enforcement's application of this technology. As presently interpreted by the Supreme Court, the Constitution does not limit the Government's ability to place a GPS device on your person, vehicle, running shoes, backpack, or purse.

The Fourth Amendment provides the most direct constitutional protection for individual privacy in the face of unprecedented government intrusion into previously personal and sacrosanct zones.<sup>6</sup> The Fourth Amendment protects privacy, property, and liberty by prohibiting "unreasonable searches and seizures" of "persons, houses, papers, and effects,"<sup>7</sup> but federal courts have been reluctant to extend its protections to prohibit the use of GPS devices. It is no surprise then that the protections afforded by the Fourth Amendment lag behind advancements in technology.

The Fourth Amendment has always played the proverbial tortoise to technology's hare. Both began at the starting line as "bricks and mortar" concepts, grounded in the real world.

Technology quickly bounded ahead to an early lead, first with the invention of the telegraph and telephone and then with internet and satellite technology, creating not only virtual worlds, but also permitting virtual access to the real world. Meanwhile, the Supreme Court's interpretation of the Fourth Amendment plods along, slowly assessing the changes that are wrought by technology and, just as surely, creating doctrine to address the intersection of evolving technology and the law.<sup>8</sup>

The Fourth Amendment protects privacy, yet its relevance with respect to emerging technologies is debated, doubted, and circumscribed. On one hand, some assert that the Fourth Amendment has lost all relevance in the modern world.<sup>9</sup> Conse-



quently, critics argue that only legislative remedies can protect privacy against increasingly efficient methods of government surveillance.<sup>10</sup> On the other hand, there are those who argue that the current doctrine takes a simplistic, binary, and ultimately untenable view of privacy effectively rendering the Fourth Amendment ineffective as a guarantor of privacy.<sup>11</sup> There is no reason to suggest, however, that the concept of “privacy is dead,”<sup>12</sup> or that technology has somehow rendered Fourth Amendment privacy protections obsolete.<sup>13</sup> New technologies allow for, but certainly do not require, enhanced and pervasive government surveillance. Indeed, there are a host of legitimate, productive, and even frivolous uses of GPS technology.<sup>14</sup> Yet in applying the protections of the Fourth Amendment to cases of government surveillance, commentators and the Court engage in discussion of only half of the Amendment – the search prong.<sup>15</sup>

Ostensibly, the Fourth Amendment protects against unreasonable searches and seizures equally, but the vast majority of court decisions and scholarly writing concerning the Fourth Amendment revolves around those issues pertaining to searches. Because most seizures follow a search, the seizure prong of the Amendment has received little scholarly or judicial recognition.<sup>16</sup> This is particularly true of the law and scholarship surrounding the Fourth Amendment’s treatment of emerging technologies.<sup>17</sup>

The use of GPS devices confounds this disparity. Law enforcement is increasingly turning to GPS surveillance as a fundamental part of their investigations, taking advantage of this technology’s accuracy and minimal cost. Despite its hesitation to rely on this precedent, the Supreme Court’s interpretation of the Fourth Amendment is robust enough to curtail the use of GPS devices.

This Article will make two arguments; first, it will demonstrate why search doctrine alone cannot address the issues raised by the use of GPS devices, and second, it will illustrate how the seizure prong of the Fourth Amendment requires law enforcement to obtain a warrant before attaching a GPS device to a vehicle. It may initially be counterintuitive to classify the use of GPS devices as a Fourth Amendment seizure. But in a legal realm where even “a search is not a search,”<sup>18</sup> cognitive dissonance is inevitable.

In advancing the argument above, this Article will take a significant step towards formulating a conception of the Fourth Amendment and emerging technologies from a search and a seizure perspective. At the same time, it will extend the analytical framework of this issue, thereby enabling the Fourth Amendment to remain the ultimate arbiter at the nexus of privacy, security, technology, and government surveillance. After Part II of the Article outlines a brief history of the Fourth Amendment, Part III will explore the evolution of both search and seizure doctrines. This Article will then, in Part IV, examine why, under

existing Fourth Amendment jurisprudence, it will be difficult to categorize the use of GPS devices as a search. In Part V, the Article will examine GPS technology in light of seizure laws, concluding that it provides a better response to the applications of GPS technology than does the search doctrine. Ultimately, this Article establishes that the Constitution requires law enforcement to obtain a warrant before using GPS technology.

## II. A BRIEF HISTORY OF THE FOURTH AMENDMENT

Like so many of the protections enshrined in the Bill of Rights, the Fourth Amendment is a product of the excesses of British hegemony preceding the American Revolution.<sup>19</sup> The paradigmatic case of *Wilkes v. Wood*<sup>20</sup> illustrates how British authorities regularly ignored their own maxim that “every man’s house is his castle.”<sup>21</sup> John Wilkes was a Member of Parliament who, in 1763, wrote and published the *North Briton Number 45*, a pamphlet criticizing one of King George III’s speeches.<sup>22</sup> Secretary of State Lord Halifax issued a warrant authorizing officers to “search for the authors, printers, and publishers of seditious and treasonable paper.”<sup>23</sup> The warrant was general and specified no names.<sup>24</sup> It simply authorized the officers to seize and detain anyone who they suspected of complicity in the publication of the pamphlet.<sup>25</sup> These officers took their mission to heart, arresting forty-nine people in three days including the printer, who led them to Wilkes.<sup>26</sup> When the officers attempted to arrest him, however, Wilkes resisted. The officers forcibly seized him and proceeded to search his house then seizing his papers and effects.<sup>27</sup> After being imprisoned in the Tower of London, Wilkes won his release on habeas corpus grounds and successfully sued the Crown for damages.<sup>28</sup> The American colonies celebrated his cause,<sup>29</sup> particularly for his opposition to writs of assistance – general warrants permitting the bearer to enter any house or other place to search for and seize “‘prohibited and uncustomed’ goods.”<sup>30</sup> Wilkes’s case served as the catalyst for the creation of constitutional protections against these and other abuses by governmental authorities.<sup>31</sup>

Fast forward to 1928. At that time, only the physical invasion of a protected space triggered Fourth Amendment protections. That year the Supreme Court considered *Olmstead v. United States*,<sup>32</sup> which, for the first time, raised the specter of technology that could be used to conduct surveillance without breaching physical boundaries. Law enforcement had begun to use a variety of surveillance technologies to monitor the high technology of the era – the telephone. In *Olmstead*, federal agents used wiretaps to uncover a bootlegging operation spearheaded by Roy Olmstead.<sup>33</sup> Olmstead appealed his sentence on Fourth and Fifth Amendment grounds after being tried and convicted of conspiracy to violate the National Prohibition Act. The Court ruled that because there “was no entry of the houses of

offices of the defendants,” the police conducted neither a search nor a seizure.<sup>34</sup>

The Court later affirmed this logic in *Silverman v. United States*<sup>35</sup> and *Goldman v. United States*.<sup>36</sup> Like *Olmstead*, *Goldman* did not involve trespass or physical penetration of a space. Instead federal agents surveilled using a detectaphone, a device that, when pressed against a wall, allowed the user to overhear the conversation in the next room.<sup>37</sup> Based heavily on the precedent of *Olmstead*, the Court found no Fourth Amendment violation given the lack of trespass or physical invasion.<sup>38</sup> By contrast, in *Silverman* the Court ruled that the use of a spike mike, which amplified the conversations of individuals in an illegal gambling establishment, triggered Fourth Amendment concerns.<sup>39</sup> The officers inserted the spike mike

“under a baseboard in a second-floor room of the vacant house and . . . the spike made contact with a heating duct serving the house occupied.”<sup>40</sup> Thus the officers had tripped the physical invasion trigger of the Fourth Amendment.

Collectively these cases reveal a Court unwilling to adapt constitutional protections in the face of evolving and intrusive technologies. Their decisions steadfastly ignored or overlooked technical advances in favor of the blind application of legal principles. While *Olmstead* ignored the implications of telephonic technology,<sup>41</sup> the *Silverman* Court explicitly ignored the evidence that advancing technology allowed for enhanced methods of surveillance, thus making it possible to eavesdrop on conversations without having to resort to traditional “bricks and mortar” trespass.<sup>42</sup> In the face of prescient dissenting opinions,<sup>43</sup> the Court insisted on enforcing an increasingly obsolete conception of the Fourth Amendment focused exclusively on physical spaces. This conception threatened to render essential constitutional protections archaic in a modern and increasingly virtual world.

The Court would finally concede the impact of emerging technology on the Fourth Amendment paradigm in *Katz v. United States*, where they prioritized the privacy interests of “people, not places.”<sup>44</sup> Katz was a gambler and police were aware of his illicit activities. They knew that he used a particular telephone in a particular telephone booth to make his wagers. Armed with this knowledge, they attached an electronic listen-

ing and recording device to the outside of the public telephone booth from which he had placed his calls. This electronic surveillance resulted in an eight-count indictment and conviction for interstate gambling.

While the parties briefed the issue of whether law enforcement officials had penetrated a constitutionally protected area by monitoring the public phone booth, the Court “decline[d]

to adopt this formulation of the issues.”<sup>45</sup> In a doctrinal shift, the Court brushed aside the “eroded”<sup>46</sup> underpinnings of *Olmstead* and *Goldman*. Instead the majority, without articulating a clear test, established that law enforcement agents had indeed violated Katz’s Fourth Amendment rights. The Court has since adopted the test Justice Harlan proposed in his concurrence for determining the breach

of an individual’s rights: “[F]irst that a person have exhibited an actual, subjective expectation of privacy and, second, that the expectation be one that society is objectively prepared to recognize as ‘reasonable.’”<sup>47</sup>

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### III. AN EXPLORATION OF MODERN SEARCH AND SEIZURE DOCTRINE

At its most basic, the Fourth Amendment establishes a procedural requirement. It does not prohibit searches and seizures altogether, only those searches and seizures that are unreasonable.<sup>48</sup> To obtain a warrant, law enforcement is required to provide an oath, reasonable cause, and particularity with respect to the areas law enforcement seeks to search or the contraband they seek to seize.<sup>49</sup> Of the six fundamental questions (who, what, when, where, why, how), the Fourth Amendment is most concerned with how. It asks law enforcement: How did you obtain the proffered evidence?

#### A. THE SEARCH PRONG OF THE MODERN FOURTH AMENDMENT

The Supreme Court has interpreted the Fourth Amendment to presumptively bar searches conducted without a warrant.<sup>50</sup> While there are problems with this approach,<sup>51</sup> a warrant forces the police to “make a record before [rather than after a]

search.”<sup>52</sup> A search, however, is not always a search<sup>53</sup> and has instead become a legal term of art. The first question involves defining which searches implicate the Fourth Amendment, thereby activating the warrant requirement. Originally, as we have seen, the police only conducted a search when their actions involved trespass or physical penetration of a protected space such as a home or office.

More recently, commentators and the Court alike have struggled to articulate a precise definition of searches implicating Fourth Amendment concerns. The inability to define a search has led to erratic and sometimes contradictory interpretations of the Amendment.<sup>54</sup> Indeed, even the author of the current jurisprudential test, Justice Harlan, later expressed reservations regarding the test he developed.<sup>55</sup> Consistent themes, however, do emerge from the case law, which in turn informs the contours of the search definition.

### *1. Testing Subjective Expectations and Objective Reasonableness*

First, the Court looks for evidence that an individual has manifested a subjective desire “to preserve something as private.”<sup>56</sup> In assessing subjective expectations, the Court considers the manner in which a person has used a particular location and whether they utilized the precautions customarily taken by those seeking privacy.<sup>57</sup> A sincere desire for privacy, however, is not enough. Because a personal desire for privacy may be “‘conditioned’ by influences alien to [established] *Fourth Amendment*”<sup>58</sup> boundaries, the Court has observed an objective component to the test.<sup>59</sup>

The objective element of the test considers whether “society is prepared to recognize as ‘reasonable’ the right to privacy asserted by the individual.”<sup>60</sup> As might be expected, the Court has placed more emphasis on the objective, rather than subjective, prong of the inquiry. At the same time, the Court has not “explicitly defined the precise factors that render a subjective expectation objectively reasonable.”<sup>61</sup> For some, this reluctance indicates that the Court is simply “substitut[ing] . . . words for analysis” and objectivity.<sup>62</sup> A survey of the Court’s decisions, however, does provide some practical guidance. The Court has considered how an individual uses a certain location,<sup>63</sup> whether “precautions customarily taken by those seeking privacy”<sup>64</sup> were taken, and whether the Framers contemplated the particular type of intrusion.<sup>65</sup> Furthermore, in its analysis of enhanced surveillance techniques, the Court inquires as to the intrusiveness of law enforcement’s encroachment into personal zones. Two types of intrusiveness are relevant to the Court’s inquiry.<sup>66</sup>

#### **I. What Type of Information Does the Technology Provide?**

Just as the Fourth Amendment asks how law enforcement obtained its evidence, the Court, in its treatment of enhanced

surveillance technologies, asks how the technology works. The Court has delineated two types of technologies based on its jurisprudence. On one hand, the Court has categorized as “sense augmenting” any technology that reveals information that could theoretically be attained using any of the five human senses. This technology typically falls into the category of a mechanical substitute or enhancement of human senses. On the other hand, the Court has designated as “extrasensory” technology that provides details that the human senses alone could not deduce.

Two decisions illustrate the Court’s treatment of sense augmenting technology. First, in *Smith*, the Court permitted law enforcement’s use of a pen register, which they described as mere sense augmentation. The Court explained that a device “disclos[ing] only the telephone numbers that have been dialed” did not indicate that a search had occurred.<sup>67</sup> It reasoned that “[t]he switching equipment that processed those numbers is merely the modern counterpart of the operator who, in an earlier day, personally completed calls for the subscriber.”<sup>68</sup> Because the pen register failed to disclose the content of the telephone call, the identities of the parties, and “whether the call was even completed,” the Court concluded that the search did not implicate the Fourth Amendment.<sup>69</sup>

Later, in *United States v. Knotts*, the Court considered a technology unrelated to telephony. There the Court classified as sense augmenting a beeper placed in a barrel of chloroform that was later sold to the defendant. The beeper in question was a relatively unsophisticated tracking device emitting a weak radio signal, enabling law enforcement to follow it using a receiver.<sup>70</sup> The beeper did not telegraph its actual location, only the relative distance between the receiver and the beeper. The signal became stronger as the receiver moved closer to the beeper, and became weaker when moved further away.<sup>71</sup> During its analysis of the objective prong of the *Katz* two-part test, the Court evaluated the intrusiveness of the beeper. At several points, the Court noted that the beeper did not reveal information that could not otherwise be discovered through unaided observation.<sup>72</sup> The Court also analogized use of the beeper to “the following of an automobile on public streets and highways.”<sup>73</sup> Consequently, the Court concluded that use of the beeper constituted sense augmenting technology, which did not qualify as a search for Fourth Amendment purposes.

In contrast, the Court generally issues greater privacy protections when addressing cases involving extrasensory technology. Indeed, the case law suggests that extrasensory surveillance is almost per se prohibited without a warrant.<sup>74</sup> *Kyllo v. United States* stands in contrast to the Court’s often permissive attitude towards sense augmenting technology. In this case, federal agents suspected that Kyllo was growing marijuana in his home by using the high intensity lamps necessary for indoor marijuana growth.<sup>75</sup> Using a thermal imaging device, the agents scanned the outer walls of Kyllo’s home for differences in the



amount of heat emanating from different parts of the house. The device indicated that there was more heat emanating from the garage and side wall than from other areas of the house. Based on this information, the agents secured a warrant and searched the home, finding marijuana plants. At trial, *Kyllo* moved to suppress the evidence, and the question of whether the use of a thermal imaging device constituted a search eventually reached the Supreme Court.

The Court dismissed the argument that the thermal imager did not reveal information about the house's interior<sup>76</sup> before concluding that the imager constitutes an extrasensory device.<sup>77</sup> By contrast, the dissenters found that use of the imager did not constitute a search only after finding that it was a sense augmenting device. Despite the Court's ostensible rejection of formalistic application of the Fourth Amendment,<sup>78</sup> both the majority and dissent opted for slightly mechanical interpretations. For both, their analyses ended after categorization of the technology as either sense augmenting or extrasensory.

## II. How Much Information Does the Technology Expose?

In addition to the type of technology used, the Court has consistently considered the quantity of information revealed by surveillance technology. In *Katz*, the Court was guided by the degree of intrusion associated with eavesdropping. The device broadcasted not only the volume or number dialed, but also the "words . . . utter[ed] into the mouthpiece."<sup>79</sup> In contrast, the Court has declined to extend Fourth Amendment protections when faced with a lesser intrusion in similar circumstances.<sup>80</sup> Furthermore, the Court looked beyond the quantity of information revealed by the beeper in *Knotts* and also noted that the type of surveillance practiced by law enforcement vis-à-vis beeper technology did not constitute "dragnet" surveillance.<sup>81</sup> The Court cautioned that its opinion should not be read as authorizing "twenty-four hour surveillance of any citizen . . . without judicial knowledge or supervision."<sup>82</sup>

Similarly, in *Dow Chemical Co. v. United States* the Court considered whether aerial photography of an industrial plant constituted an unreasonable search.<sup>83</sup> After quickly concluding that the photography revealed nothing more than a mild augmentation of "a simple flyover with naked-eye observation,"<sup>84</sup> the Court considered the amount of detail contained in the photographs. The Court reasoned that because "no objects as small as ½ inch in diameter, such as a class ring, for example" were identifiable, no "serious privacy concerns" were raised.<sup>85</sup> Based on its considerations of both the type and quantity of information revealed, the Court concluded that the search did not violate the Fourth Amendment.<sup>86</sup> The Court cautioned, however, that methods providing more detail indeed might trigger Fourth Amendment concerns.<sup>87</sup>

These cases demonstrate the Supreme Court's consistent practice of considering the quantity of information revealed by

surveillance technology and the type of intrusiveness involved. Both *Knotts* and *Dow Chemical Co.* involved sense augmenting technology typically unfettered by Fourth Amendment restrictions. Yet in both cases, the Court indicated there are limits to the use of even this type of technology. That limit is calibrated by the quantity of information revealed.

Therefore, for the protections of the Fourth Amendment to apply, an individual's exhibited desire to keep something private must complement a general societal interest in keeping it private. Where law enforcement employs the use of enhanced surveillance techniques, the Court will consider both the type and quantity of intrusion when determining society's interest in keeping something private. This standard is instructive in assessing how lower federal courts and state courts have grappled with issues of GPS technology.

## B. STATE AND LOWER FEDERAL COURT DECISIONS REGARDING THE USE OF GPS TECHNOLOGY

The treatment of this issue by lower courts is decidedly mixed. To date, three Federal Circuits<sup>88</sup> and four state Supreme Courts have directly addressed this issue. Three of these courts have determined that the use of GPS devices does not constitute a search, with four others finding the opposite. The courts finding that no search has occurred based their analysis on *Knotts*, whereas the courts finding that a search had occurred bypassed accepted Fourth Amendment jurisprudence.

Collectively, Wisconsin, the Seventh, and the Ninth Circuits do not consider the use of GPS devices to be a search. Each court found *Knotts* to be controlling. For example, Judge Posner in *United States v. Garcia* briefly considered the technological advancement of GPS' only to conclude that it represented a "modest improvement" over beeper technology.<sup>89</sup> Brushing past those concerns, he concluded that because there was no evidence that law enforcement was, in fact engaging in mass surveillance, the use of GPS technology by law enforcement officers who "have a suspect in their sights," raised no constitutional concerns.<sup>90</sup> Similarly, the Ninth Circuit in *United States v. Pineda-Moreno* perceived no distinction between short- and long-term surveillance.<sup>91</sup>

These courts have ignored the difference between GPS and beeper technology and instead accepted that one tracking technology is analogous to another. They considered only the fruits of the technology rather than the method (the "how") of procurement. Those courts finding that a search has occurred, on the other hand, considered the issue more thoroughly. Unfortunately, their analysis can be of limited value because it is not rooted in Fourth Amendment jurisprudence.

Largely, only state supreme courts have found the use of GPS devices to constitute a search, basing their reasoning in state rather than federal, law. The only federal circuit to find that the use of GPS devices constituted a search did not fully ground

its reasoning in Fourth Amendment jurisprudence. Rather, the D.C. Circuit looked partially to the “mosaic theory” invoked in cases involving national security and California state law to justify its decision.<sup>92</sup>

For example, the Washington Supreme Court first considered the issue of GPS technology in *Washington v. Jackson*.<sup>93</sup> Law enforcement obtained a 10-day warrant to attach GPS devices to two of Jackson’s vehicles. The devices eventually led authorities to his daughter’s body, which was buried in a remote area of the forest. A jury later convicted Jackson of murder. The Washington Supreme Court considered the appellate court’s assertion that “installation and use of GPS devices on vehicles [did] not constitute a search or seizure” under the Washington State Constitution.<sup>94</sup> The court held that observing items exposed to the public does not constitute a search even when using “particularly intrusive method[s] of viewing.”<sup>95</sup> The court continued, noting that the “nature and extent of information obtained” was relevant when considering whether an expectation of privacy is reasonable.<sup>96</sup> Despite relying on state law and precedent the *Jackson* court also considered both of the intrusiveness factors implicit in a Fourth Amendment analysis, concluding that the intrusion of GPS devices was sufficient to merit warrant protection.<sup>97</sup>

New York courts also recently considered this issue in *New York v. Weaver*.<sup>98</sup> There, police attached a GPS device, for no discernable reason,<sup>99</sup> to the defendant’s vehicle. Evidence from the GPS device was later used to show that the defendant was present at a K-Mart around the time it was burgled. A jury convicted the defendant of burgling the K-Mart based in part on the GPS evidence. The court rested its decision to classify the use of the GPS device as a search on many arguments. First, it found that GPS technology differed significantly from “primitive” beeper technology.<sup>100</sup> Skipping over the subjective requirement, the court then cited to several cases asserting the existence of a reasonable expectation of privacy on the open road.<sup>101</sup> Finally, the court referenced both intrusiveness factors, concluding that GPS devices contain “sophisticated and powerful technology” which provides more than a “mere enhancement of human sensory capacity.”<sup>102</sup> In other words, the court concluded that GPS devices provide a fantastic quantity of information that would not otherwise be available to the five human senses. Despite considering the case primarily under Fourth Amendment jurisprudence, the court acknowledged that federal law in this area is

not settled and that this issue has not been addressed by the majority of federal courts. It therefore rested its decision on state rather than federal law.

Most recently in 2010, the D.C. Circuit Court of Appeals considered the issue of GPS tracking in *United States v. Maynard*. There law enforcement tracked the suspect, Antoine Jones, for over a month without a warrant. Information provided by the GPS device placed on his car was used to arrest and convict him for drug-related crimes. After distinguishing the case from *Knotts* because of its lengthy surveillance period, the court concluded that Jones’s movements were not “actually exposed to the public because the likelihood anyone will observe all those

movements is effectively nil.”<sup>103</sup> In reaching this conclusion, the D.C. Circuit considered what a reasonable person would expect another to do. In so doing, it ignored the precedent set by the Supreme Court in *Knotts* and *Karo* that required lower courts to focus on the information that can be theoretically, rather than reasonably, acquired by visual surveillance.<sup>104</sup>

Furthermore, the court examined which movements of Jones were constructively exposed.<sup>105</sup> When considering the constructive exposure issue, however, the court did not rely on any Fourth Amendment jurisprudence. Instead, it cited

primarily to a FOIA case and the mosaic theory, which the government often invoked in cases involving national security.<sup>106</sup> Neither FOIA nor mosaic theory has its roots in the Fourth Amendment. Its only reference to any Fourth Amendment jurisprudence was its token referral to *Smith v. Maryland*, in which it found implicit support for its position.<sup>107</sup>

Courts take widely differing approaches to the use of GPS devices but share one characteristic: their focus on the search prong of the Fourth Amendment. These differing approaches have predictably led to differing standards and conclusions. Ultimately, *Maynard* is the exception that proves existing Fourth Amendment jurisprudence does not consider the use of GPS devices to constitute a search. Privacy advocates would thus do better to seek protection under the seizure prong.

### C. THE MODERN SEIZURE CLAUSE

In terms of Fourth Amendment jurisprudence, seizures are the bridesmaids to a search’s bride.<sup>108</sup> Defendants typically challenge the search itself rather than the seizure of items taken during the search. Seizures are generally the by-product of a prior search; after all, how else would law enforcement stumble

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upon the contraband?<sup>109</sup> As a result, the seizure jurisprudence is far less developed than the search jurisprudence. Nevertheless, the two prongs of the Fourth Amendment protect the same interests: privacy, property, and liberty.<sup>110</sup> Despite the perception that search primarily protects privacy<sup>111</sup> and seizure mainly protects property and liberty,<sup>112</sup> significant overlap exists between the two. Indeed, both are instrumental in enforcing the Fourth Amendment's safeguards.<sup>113</sup>

Like searches, seizures of personal property without a warrant are considered per se unreasonable, and the question of Fourth Amendment protection turns on the definition of seizure.<sup>114</sup> Also like search, the term "seizure" has become a term of art. Here, however, the similarities end. For the most part, the courts have articulated and applied a singular, coherent definition for what constitutes a seizure. As is the case with most constitutional issues, there is some discussion and tension regarding the test and its scope, but seizure does not arouse the same level of interpretive difficulties, passion, or commentary as the search prong. "A 'seizure' of property occurs when there is some meaningful interference with an individual's possessory interests in that property."<sup>115</sup> Application of this standard reveals the analytical framework pertinent to the seizure analysis. The Court conducts a three-part test to determine first whether a seizure occurred and next, whether that seizure was reasonable.

### *1. There Must Be a Possessory Interest at Stake*

First, the Court requires that a possessory interest be at stake. For example, in *Jacobsen*, Federal Express employees noticed white powder spilling out of a damaged package.<sup>116</sup> They notified DEA officials who, after conducting a field test on a trace amount, determined that the powder was cocaine.<sup>117</sup> The DEA agents obtained a warrant and arrested the respondents at the recipient's residence.<sup>118</sup> At trial, the defendants challenged several aspects of the DEA's conduct; most important to the seizure analysis was their challenge to the field test of the powder.<sup>119</sup> The Court found that the DEA's actions implicated a property interest because the defendants had a property interest in the white powder.

Despite the requirement of a possessory interest, the Court is mindful that seizures can impact any of the interests protected by the Fourth Amendment: liberty, privacy, or property. *United States v. Place* is an example of the Court recognizing that the liberty interest, coupled with a nominal possessory interest, may trigger seizure concerns.<sup>120</sup> In *Place*, DEA officials detained an airline passenger for ninety minutes while they conducted a "sniff test" on his luggage. The Court found that the detention "effectively restrain[ed] the [passenger because] he is subjected to the possible disruption of his travel plans in order to remain with his luggage or to arrange for its return."<sup>121</sup> The Court found that this detention and the resulting infringement upon the passenger's liberty interests constituted a seizure of the individual.

## **I. The Possessory Interest is Not Limited to Tangible Items**

Traditionally, seizure denies physical possession or enjoyment of a physical item to all others. In other words, seizure is typically concerned with the actual confiscation of a physical item.<sup>122</sup> The Supreme Court has, on occasion, recognized that Fourth Amendment seizure law also provides for a possessory interest in intangible items, such as their words. In *Berger v. New York*, the Court ruled that the recording of a human voice is a seizure for Fourth Amendment purposes.<sup>123</sup> Any possessory interest one has in one's voice is intangible. The language of the majority opinion clarified that the wiretaps constituted both a seizure and a search.<sup>124</sup> The Court reaffirmed their stance in *Katz*, stating that "the Fourth Amendment governs not only the seizure of tangible items, but extends as well to the recording of oral statements . . . ."<sup>125</sup> The Court unambiguously stated that "the Government's activities in electronically listening to and recording the petitioner's words violated the privacy upon which he justifiably relied while using the telephone booth and thus constituted a 'search and seizure' within the meaning of the Fourth Amendment."<sup>126</sup>

Additionally, federal appellate courts have acknowledged that intangible privacy interests are also protected under the seizure prong. Both the Second and D.C. Circuits have observed this right in the context of considering photographs as seizures.<sup>127</sup> *Ayeni I* is particularly instructive on this point. There, law enforcement officials attempted to execute a warrant against Babatunde Ayendi for credit card fraud. The agents were accompanied at all times by a CBS television crew. The crew filmed every second of the intrusion from the agents "push[ing] [Mrs. Ayeni] in the chest" to her interrogation at the hands of the agents and the crying of Ayeni's son.<sup>128</sup> The Second Circuit ruled that the "video and sound recordings were *seizures* under the Fourth Amendment" because they seized "images and sounds of the Ayeni home, and of the Ayenis themselves," broadcasting them "for public viewing by television audiences across the country."<sup>129</sup> The court indicated that it recognized the serious privacy interest in the sanctity of the home and in the individuals themselves, which were infringed upon by the seizure of images and sounds of their homes and persons. These outliers notwithstanding, courts traditionally have been reluctant to extend Fourth Amendment seizure protections to intangible or virtual property.<sup>130</sup>

### *2. The Government Must Interfere With the Interest*

After identifying the interest at stake, the Court considers whether the government has interfered with that interest. The government has interfered with a possessory interest when it exerts "dominion and control" over it.<sup>131</sup> In *Jacobsen*, DEA agents took a trace amount of the white powder out of the package and then tested it. By manipulating the powder, the agents exerted dominion and control over it. The testing of the powder "con-



verted . . . a temporary deprivation of possessory interests into a permanent one.”<sup>1</sup> A permanent deprivation, however, is not always necessary to satisfy this standard. In *Place*, a deprivation of liberty for ninety minutes was sufficient.<sup>133</sup>

Furthermore, even deprivation of the interest is not required. In *United States v. Va Lerie*, after a careful consideration of the Supreme Court’s jurisprudence, the Eighth Circuit concluded that the seizure standard also prohibited the “government’s conversion of an individual’s private property.”<sup>134</sup> The *Va Lerie* court was careful to distinguish conversion from mere trespass as requiring “an intent to exercise a dominion or control over the goods which is in fact inconsistent with the [owner’s] rights” and noting that “the gist of conversion is the interference with control of the [owner’s] property.”<sup>135</sup>

### 3. *The Court Balances the Intrusion against the Governmental Interests*

If both of the preceding questions are answered in the affirmative, the Court then “balance[s] the nature and quality of the intrusion on the individual’s *Fourth Amendment* interests against the importance of the governmental interests alleged to justify the intrusion.”<sup>136</sup> The Court conducted its most prominent balancing act in *Terry v. Ohio*. There the Court described at least three governmental interests to be considered: effective crime prevention, investigating crime, and the need to ensure that a suspect is not armed.<sup>137</sup> At the same time, the Court recognized that the seizure of an individual was no “petty indignity” and represented a “serious intrusion upon the sanctity of the person, which may inflict great indignity and arouse strong resentment.”<sup>138</sup> Despite the intensity of the intrusion, the Court determined that its scope was limited,<sup>139</sup> concluding that the weighty governmental interests balanced out the intrusion of the seizure. Nevertheless, the Court carefully calibrated its language to limit the scope of its own holding, emphasizing that each case turned on its own set of facts, while limiting the detention authority of an officer only to limited intrusions and only when based on reasonable, articulable suspicion.<sup>140</sup> The Court has not circumscribed the factors they examined to determine the “nature and quality” of the intrusion, but the case law indicates the factors that have guided the Court’s seizure inquiry in the past.

#### I. The Court looks to the Intrusiveness of the Government’s Seizure

The first factor is the intrusiveness of the government’s seizure. As the Court noted in *Place*, “intrusion . . . occasioned by a seizure of one’s personal effects can vary both in its nature and extent.”<sup>141</sup> Moreover, seizures reasonable at inception “can nevertheless violate the *Fourth Amendment* because its manner of execution unreasonably infringes possessory interests.”<sup>142</sup> At the low end of the intrusion spectrum is a dog sniff, which “does

not require opening the luggage[,] does not expose noncontraband items that otherwise would remain hidden”<sup>143</sup> and which “discloses only the presence or absence of narcotics, a contraband item.”<sup>144</sup> Despite the fact that the sniff conveys information, the intrusiveness itself is limited, ensuring that the owner is not subject to embarrassment and inconvenience. Contrast a dog sniff to the seizure in *Place* where authorities intruded upon both possessory and liberty interests. Law enforcement severely intruded on *Place*’s liberty interest by subjecting him to “the coercive atmosphere of a custodial confinement.”<sup>145</sup> Furthermore, the Court established a spectrum when assessing the intrusion into possessory interests. The intrusion is less severe when the individual “has relinquished control of the property to a third party” or when the government confines its investigation to an “on-the-spot inquiry.”<sup>146</sup> By contrast, when an individual retains control of their possession and the government transports their property elsewhere, the intrusiveness is more severe.

#### II. The Duration of the Seizure is also Germane to the Court’s Analysis

The other salient factor in the Court’s balancing analysis is the duration of the seizure. In *Place*, a detention for ninety minutes was enough for the Court to conclude that the seizure was unreasonable. Indeed, the Court implied that the length of the detention itself provided sufficient grounds for finding the seizure unreasonable.<sup>147</sup> In comparison, when faced with an interference with possessory interests, the Court has permitted delays of up to twenty-nine hours.<sup>148</sup> Brevity, however, is not always a determining factor. In *Jacobsen*, DEA officials permanently destroyed the white powder they were testing.<sup>149</sup> Nevertheless, because the scope of the intrusion was so trivial<sup>150</sup> the Court concluded that the agent’s actions were reasonable.

Hence, for the Court to find that a *Fourth Amendment* seizure has occurred, it must find that the government meaningfully interfered with a protected interest. If such interference implicates the *Fourth Amendment*, the Court then will assess the reasonableness of the seizure. Primary in the Court’s analysis are 1) the interests of law enforcement in effecting the seizure and 2) the manner in which they conduct the seizure. If the intrusiveness or scope of the seizure cannot be justified by law enforcement’s interests, then the seizure is unreasonable.

### 4. *Intersection of Fourth Amendment and First Amendment*

The use of GPS devices, however, raises not only *Fourth Amendment* concerns. GPS devices are used principally to track individuals, to uncover where they travel to, and, using this information, to solve crimes. Sometimes, as in *Jackson*, GPS devices are used when police already have information that a crime occurred and are using such devices to fill the gaps in their information. Other times, as in *Garcia*, the police suspect

that the individual will commit a crime. Police can then use the GPS device to establish whether a potential suspect was at the scene of the crime when it actually occurs. But the devices are not intelligent; instead they are merely passive, relaying a set of coordinates or an address. The latitude and longitude provided by GPS devices represent more than a physical address. Locations are a proxy for the people and businesses they represent. Therefore, more than mere locations, GPS devices provide an index of known associates and associations and insight into the frequency of those associations. The attachment of a GPS device, then, implicates fundamental First Amendment freedom of association concerns.<sup>151</sup>

The Constitution protects freedom of association from state intrusion in two ways: 1) the Court protects the “choices to enter into and maintain certain intimate human relationships;” and 2) the Court recognizes the right to engage in those activities protected by the First Amendment: speech, assembly, petition of the redress of grievances, and the exercise of religion.<sup>152</sup> The government’s actions do not have to directly trigger First Amendment freedom of association concerns. Instead the Court proscribes government action that has the effect of discouraging or potentially limiting the free exercise of First Amendment protections, but which are unintended to affect association.<sup>153</sup> Additionally, the Court has not hesitated to restrict government action even where the “governmental action challenged may appear to be totally unrelated to protected liberties.”<sup>154</sup>

First Amendment protections extend only to constitutionally protected speech and associations. The Court has, however, found that First Amendment protections with respect to the freedom to associate are quite broad. Indeed, the First Amendment protects the right to “associate with others in pursuit of a wide variety of political, social, economic, educational, religious, and cultural ends.”<sup>155</sup> The Court has unequivocally stated that the First Amendment protects the “formation and preservation of . . . highly personal relationships” from “unjustified interference by the State.”<sup>156</sup> Moreover, the Court recognizes that “the constitutional shelter afforded such relationships reflects the realization that individuals draw much of their emotional enrichment from close ties with others.”<sup>157</sup> Implicit in protecting these relationships is the “ability independently to define one’s identity that is central to any concept of liberty.”<sup>158</sup>

Government infringement on these guaranteed freedoms could take “a number of forms.”<sup>159</sup> Several of these forms are pertinent to the use of GPS devices. At a basic level, the use of GPS devices inevitably interferes with the formation and preservation of personal relationships because it threatens to reveal not only political and religious affiliations but also undermines an individual’s independent establishment of identity. More seriously, it threatens to forcibly disclose the fact of group membership. Most importantly, the use of GPS devices threatens to chill the fundamental First Amendment freedom to associate. Under constant threat of GPS surveillance individuals may be less likely to attend political rallies or undergo medical treatment such as psychological evaluation. Under the specter of relentless tracking, individuals may also be less likely to engage in the religious and social associations that the First Amendment expressly protects.

The point of this discussion is not to argue that GPS devices inevitably trample on First Amendment concerns. Whether the use of a GPS device implicates the right to association turns on the facts and circumstances of the individual case. It is irrelevant that there might be a narrow and wholly unrealistic case where the police affix a GPS device to a car whose owner uses it solely for criminal purposes. Critically, the use of GPS devices constantly and inevitably *threatens* to reveal and chill associations protected by the First Amendment: the “formation and preservation of highly personal

relationships” or social, political, or religious associations that an individual seeks to protect from government scrutiny and interference. The use of GPS devices raises the concern that the information provided by these devices intrudes on First Amendment protections.

These First Amendment concerns fundamentally alter the Fourth Amendment inquiry.<sup>160</sup> Where searches or seizure implicate both the Fourth Amendment<sup>161</sup> and the First Amendment, the Fourth Amendment is applied with “scrupulous exactitude.”<sup>162</sup> In particular, the “[c]ourts will scrutinize any large scale seizure of . . . materials presumptively protected under the First Amendment.”<sup>163</sup> Having evaluated the current state of both the search and seizure doctrines, this Article will now consider whether the use of GPS devices falls under either category.

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## *The attachment of a GPS device, then, implicates fundamental First Amendment freedom of association concerns*

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#### IV. THE CHALLENGES OF CONSIDERING GPS TECHNOLOGY A SEARCH UNDER THE FOURTH AMENDMENT

The Supreme Court has not yet opined on the status of GPS technology. The case for considering the use of GPS technology to be a search ignores the assorted obstacles presented by both the relevant jurisprudence and its application at both the federal and state levels.

##### A. THE BEEPER CASES ARE NOT ANALOGOUS TO THE USE OF GPS DEVICES

The first obstacle in considering the typical GPS case<sup>164</sup> is to remove it from the ambit of *Knotts*. In *Knotts*, the police knew that Armstrong had purchased the ingredients to create illicit drugs. The police, with the consent of the seller of the ingredients, arranged to place a beeper in the container sold to Armstrong. The beeper emitted a signal monitored by a receiver; the strength of the signal indicated the distance between the two. A stronger signal meant that the receiver was closer to the beeper and vice versa. When visual surveillance failed, the police used the beeper to find Armstrong's vehicle. The defense in *Knotts* later moved to suppress the evidence given the warrantless monitoring of the beeper, but the Supreme Court rejected this argument.

Every court that considers the warrantless use of GPS devices begins its analysis with *Knotts*. Both involve leveraging technology to supplement surveillance of an individual's movements in public spaces. Despite the striking similarities between the two, the language of *Knotts* suggests that it should not control the decision reached in a GPS case. Most importantly, the Court warned that *Knotts* should not extend to precisely the scenario created by the use of GPS devices. Faced with the argument that *Knotts* would lead to "dragnet-type law enforcement practices," the Court distinguished between the type of surveillance conducted in that case and "twenty-four hour surveillance of any citizen of this country . . . without judicial knowledge or supervision."<sup>165</sup> GPS technology enables what beepers could not—the flawless, uninterrupted, and twenty-four hour tracking of a suspect. Even if the Court could not have anticipated this particular technology, they could anticipate the consequences of such emerging technologies. The Court expressly declined to extend the holding of *Knotts* to that scenario.

Moreover, law enforcement's use of GPS devices differs significantly from its use of beeper technology. The implementation of the various technologies varies as greatly as does the underlying technology itself. Beeper technology is hardly more sophisticated than playing Marco Polo.<sup>166</sup> The nature of beeper technology forces the police to physically follow the individuals they suspect of wrongdoing. The beeper does not transmit its

actual location; rather it transmits only its location relative to the receiver. GPS technology, on the other hand, involves the simultaneous use of several satellites to pinpoint one's location.<sup>167</sup> Initially designed for military use, it has only recently been declassified and has consistently become more accurate. The difference between the two is as stark as the difference between smoke signals and cellular technology for communication.

Their implementation reflects the relative sophistication of the technologies. Beepers are pure tracking devices enabling only one thing—visual surveillance. GPS technology, on the other hand, enables law enforcement to forego actual surveillance and track the movements of a suspect over long stretches of time.<sup>168</sup> Rather than actively transmitting their location, GPS devices are passive, reading information from various satellites and in turn facilitating a new perception of the world. Previously law enforcement used beeper technology in their attempt to catch individuals during the commission of a crime. Now, they use GPS technology *ex post*, without any particularized suspicion.<sup>169</sup>

The differences in the technology and implementation indicate that GPS devices are not tracking devices and should not be treated as such. For these reasons, the Court should recognize that the holding in *Knotts* does not automatically dispose of a GPS case. With this obstacle surmounted, the next challenge arises when considering the use of GPS technology under the Court's two-part *Katz* test.

##### B. THERE IS NO REASONABLE EXPECTATION OF PRIVACY IN ONE'S MOVEMENTS ALONG PUBLIC THOROUGHFARES

An individual traveling in public surrenders some of the privacy protections afforded to other aspects of everyday life. While other areas of life allow us to demonstrate a desire for privacy, travel in public, particularly by automobile, is easily visible.

###### 1. *An Individual Cannot Demonstrate a Subjective Desire for Privacy*

The first consideration is an individual's demonstrated subjective desire for privacy. It should be noted that the Court does not emphasize this prong of the test. A demonstrated personal desire for privacy is not as important as the second, objective consideration. This desire for privacy, however, must still exist and be discernable, which is problematic. It is difficult to imagine how a car owner might express a subjective desire for privacy in the physical movements of his vehicle. Ironically, any evasive action a driver might take to shed surveillance can be presented as sufficient probable cause to justify a warrant permitting the very type of surveillance the driver sought to evade.

In *Katz*, the Court found that an individual exhibited a subjective desire for privacy after occupying a telephone booth

and “shut[ting] the door behind him.”<sup>170</sup> Responding to the government’s argument that the booth itself was glass, enabling passers-by to see Katz and thus detracting from his privacy, the Court stated that what Katz wanted to “exclude from the booth” was not the eye, but the uninvited ear. Shutting the door does not exclude an uninvited eye from seeing where the car is going. It is unclear how a person may convey that they value the privacy of the movements of a car that are after all, visible to the public. There is, of course, some difference between an expectation that one can be seen on the open road and an expectation that one will be followed on the open road. One does not beget the other. This idea, however, does not speak to subjective but rather to objective concerns.

## 2. *Society Does Not Recognize the Desire to Keep Private One’s Movements on Public Thoroughfares*

The objective prong of the *Katz* two-part test asks what society considers to be a reasonable desire to retain information as private. Long before the advent of GPS devices and satellite surveillance, the Supreme Court recognized that individuals maintained a reasonable expectation of privacy in their vehicles.<sup>171</sup> Individuals, however, possess a lesser expectation of privacy on the open road than they do in their homes or offices.<sup>172</sup> Despite this general expectation of privacy on the open road, the Court forcefully rejected the notion that an individual may have any reasonable expectation of privacy in their movements along public thoroughfares.<sup>173</sup> The Court instead asserted that because an individual voluntarily conveys the fact of whatever stops are made, they cannot claim privacy in the movements of their car.<sup>174</sup>

### i. GPS Devices Are Not Intrusive Enough

Privacy advocates look to the intrusiveness inquiry for protection. They maintain that GPS technology represents an unprecedented encroachment into personal areas. This technology has the potential to compile a comprehensive profile of where you go, with whom you associate, and what you carry.<sup>175</sup> On one hand, GPS devices provide a tremendous amount of information. On the other, it is most readily classified as a sense augmenting rather than extrasensory device.<sup>176</sup>

Notwithstanding the judgments of the state courts to address the issue,<sup>177</sup> GPS technology does not provide any information that is unavailable to the five human senses. While the device does not provide visual imagery, it does communicate only information that the human eye could perceive on its own. A GPS device only reveals information that could have been attained through visual surveillance.<sup>178</sup> The Supreme Court has indicated through its decisions in *Knotts* and *Karo* that its analysis focuses on whether the information could have been attained using only visual surveillance and not whether it is practically

possible to have done so.<sup>179</sup> It is, of course, theoretically possible for a police department to “hir[e] another 10 million police officers to tail every vehicle on the nation’s roads.”<sup>180</sup>

In *Dow Chemical Co.*, the Court emphasized that sense augmenting technology might be unconstitutional if it provides too much detail.<sup>181</sup> Realistically, the amount of detail that can be provided by GPS technology is truly stunning. A GPS provides real time location information with an accuracy of ten to fifteen centimeters.<sup>182</sup> This quantity of information leads some commentators to claim that it “merits defining use of the technology a search for purposes of the Fourth Amendment.”<sup>183</sup> This claim ignores the differences between the quantity of information at stake in *Dow Chemical Co.* and GPS use. In *Dow Chemical Co.*, the Court implied that cameras providing greater detail might implicate more serious privacy concerns. The added accuracy was critical because it provided more information to law enforcement. If we were to graph the relationship between accuracy and privacy with respect to aerial photography, it would demonstrate an inverse linear relationship. The more detail the cameras provided, the less privacy an individual could retain. Therefore, cameras providing facial details erode privacy and cameras providing even minute details as small as a class ring erode one’s sense of privacy even more.

By contrast, enhanced accuracy in GPS devices, after a certain point, does not implicate greater privacy concerns. Whether the devices are accurate to ten centimeters, one meter, or ten meters is largely irrelevant. Of course, some level of accuracy is necessary. The level of accuracy needed, however, is quite low. Beepers are both unsophisticated and imprecise and have been used successfully by law enforcement for years before the invention of GPS devices. Unlike the relationship between cameras and privacy, the relationship between GPS devices and privacy represents an upside down plateau. With accuracy on the x-axis and privacy on the y-axis, privacy decreases as accuracy increases. It does so, however, only to a point, after which the marginal loss in privacy is quite low and the graph levels as accuracy increases.

The Court can make a number of arguments against classifying the use of GPS technology as a search. If it does not dispense with the argument perfunctorily under *Knotts*, the Court will struggle to discern a subjective expectation of privacy from the individual. Even if an individual were to somehow divine a way to exhibit a subjective expectation of privacy in the movements of his automobile, the Court will struggle to identify a corresponding objective expectation as reflected in society. GPS technology provides detailed, intimate profiles of our lives, the profiles of which are inherently public. The information revealed by GPS devices allows law enforcement to passively track our movements with pinpoint accuracy, yet none of these actions implicate constitutional concerns. Law enforcement simply becomes more efficient with the activities



they have conducted for millennia. This type of advancement is one that the Supreme Court has been loath to obstruct.<sup>184</sup>

## V. THE USE OF GPS DEVICES CONSTITUTES A SEIZURE

Privacy advocates need not force consideration of GPS devices into a search paradigm. After all, the Fourth Amendment protects against both unreasonable searches and unreasonable seizures. Shelter from the warrantless use of GPS devices lies in the protections against unlawful seizures enshrined in the Fourth Amendment, but is rarely applied. It should be noted that the Court in *Karo* has already held that the use of a beeper did not constitute a seizure. The Justices' cursory analysis reasoned that at most a technical trespass occurred which did not meaningfully interfere with one's possessory interest in a vehicle. The following discussion illustrates the flaws with this cursory analysis, echoed most recently by Judge Posner in *Garcia* (which failed to even apply the seizure test). The majority's analysis of this issue was strictly conclusory. Rather than explain why attaching a beeper to a vehicle did not constitute a seizure, the majority simply stated that a beeper did not impair any privacy interests.<sup>185</sup> The dissent presented a more forceful and coherent argument, recognizing that attachment of a beeper converted the vehicle into an informant for the police.<sup>186</sup>

Admittedly, it is somewhat counterintuitive to classify the use of a GPS device as a seizure under the Fourth Amendment. As Judge Posner succinctly articulated in *Garcia*:

The [GPS] device did not affect the car's driving qualities, did not draw power from the car's engine or battery, did not take up room that might otherwise have been occupied by passengers or packages, did not even alter the car's appearance, and in short did not "seize" the car in any intelligible sense of the word.<sup>187</sup>

His observations, while accurate, fail on two related counts. First, he fails to acknowledge that the Fourth Amendment seizure doctrine recognizes that law enforcement can seize intan-

gible items.<sup>188</sup> Additionally, he betrays the application of the wrong seizure standard. While Judge Posner did not articulate precisely what test he was applying, his argument implied that the use or enjoyment of an item must be impaired for a seizure to implicate the Fourth Amendment. Instead, in order to find a seizure, the Supreme Court only required that the government exercise dominion and control over an item, not that law enforcement impair the use or enjoyment of an item.

Both failures have their root in the same cause. Seizure, as applied to the Fourth Amendment, primarily revolves around the *actual* seizure of *physical* items.<sup>189</sup> Where the actual sei-

zure of physical items is concerned, exercising "dominion and control" over an item and impairing the "use and enjoyment" of property are the same. For instance, when a law enforcement officer seizes white powder suspected to be a narcotic, he or she simultaneously exercises dominion and control over the powder while denying its use and enjoyment to its owner.

The digital age has confounded this fundamental conception of seizure. Information previously stored physically in files and filing cabinets is now stored electronically. Technology now enables the *virtual* seizure of *virtual* items. The seizure of a computer file does not deny its use or enjoyment to others, hence, virtual seizure.

The use of GPS devices does not go quite so far. Instead, the use of GPS devices constitutes the *virtual* seizure (as use of the car is not

denied to the owner) of *physical* property (the vehicle itself). Something intangible is taken from a vehicle's owner when a GPS device is placed on it—liberty and privacy. In this way, the use of a GPS device is not unlike copyright and plagiarism. Copyright vests ownership in words; the words themselves become property of their copyright owner. When the possessory interest in the copyright is violated, something intangible has been taken.<sup>190</sup> Fortunately, the existing seizure jurisprudence is flexible enough to address the issues raised by GPS devices.

### A. THERE IS A POSSESSORY INTEREST AT STAKE

First, the Court requires that a possessory interest be at stake. It should be manifestly clear that an individual has a possessory interest in his vehicle. Moreover, the Supreme Court has indicated that the Fourth Amendment recognizes the virtual

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seizure of virtual items.<sup>191</sup> A wiretap constitutes a virtual seizure (as the use of one's voice is not denied to the individual) of a virtual item (one's voice is not a physical object). Much like the CBS television crew in *Ayendi I*, GPS devices expose information that individuals rightly wish to keep private. This information includes religious affiliations, political leanings, and social relationships. As in *Ayendi I*, the use of GPS devices implicates the privacy of the individuals against whom it is used. In conjunction with the possessory right, the owner has a cognizable privacy interest that is put at risk by the attachment of a GPS device. More importantly, law enforcement asserts dominion and control over a vehicle when they attach a GPS device to it.

## B. THE GOVERNMENT EXERTS DOMINION AND CONTROL OVER THE VEHICLE

After establishing that Fourth Amendment interests are at stake, the Court requires that the government interfere with those interests. With respect to their use of GPS devices, the government does so in two separate ways. First, as the *Jacobsen* Court explained, the government interferes with a possessory interest when it exerts dominion and control over it.<sup>192</sup> As *Jacobsen* illustrates, manipulation of an item constitutes dominion and control over it. Second, according to *Va Lerie*, the seizure standard prohibits the "government's conversion of an individual's private property."<sup>193</sup>

### 1. *The Attachment of a Foreign Object to One's Property Interferes with the Owner's Basic Possessory Rights*

Ownership of "property implies the right of possession and control" including the "right to protect and defend such possession against the intrusion or trespass of others."<sup>194</sup> The owner of property has the "right to exclude from it all the world, including the government, and a concomitant right to use it exclusively for his own purposes."<sup>195</sup> That right includes the prerogative to prohibit the attachment of foreign devices to one's property. The attachment of a GPS device to a car by law enforcement officials defeats that basic right.

### 2. *Attachment of a GPS Device Constitutes Conversion*

The intent to exercise dominion and control inconsistent with the owner's rights differentiates conversion from trespass.<sup>196</sup> When the government attaches a GPS device to the car, governmental officials transform the car from a mode of transportation into a messenger, conscripted into the ranks of the government. More than a mere trespass,<sup>197</sup> the officials have moved the vehicle from its functional possession into the role of an informant for the police. The government infringes on the exclusionary property right by attaching an unwanted device to the vehicle. Contrary to the conclusory opinion in *Karo*, the

attachment of a GPS device does not constitute pure trespass. It is a conversion of an individual's car into a homing beacon, constantly announcing itself to law enforcement: I am here.<sup>198</sup>

The Second Restatement of Torts adds another element to the Eighth Circuit's conception of conversion; the interfering actor "may justly be required to pay the other the full value of the chattel."<sup>199</sup> In order to determine the seriousness of the interference, the Second Restatement suggests looking to six factors:

- 1) the extent and duration of the actor's exercise of dominion or control; 2) the actor's intent to assert a right in fact inconsistent with the other's right of control; 3) the actor's good faith; 4) the extent and duration of the resulting interference with the other's right of control; 5) the harm done to the chattel; 6) the inconvenience and expense caused to the other.<sup>200</sup>

The first five of these factors cut in favor of conversion. The government's dominion and control results in the interference with the owners' right of control over the vehicle for an extended duration.<sup>201</sup> Furthermore, the Supreme Court has recognized that law enforcement does indeed intend to assert a right inconsistent with the owners' right of control when they attach objects to an individual's vehicle.<sup>202</sup> As for the sixth factor, there is economic harm done to the vehicle. There is little empirical research on the economic or market value of privacy, but the existing research suggests that privacy, especially information privacy, does indeed have great value.<sup>203</sup> For example, one may imagine an auction in which two vehicles, identical in all respects except one, are being sold. The only difference between the two is that one of the vehicles has a government-monitored GPS device attached to it.<sup>204</sup> It is difficult to imagine both selling for the same price. For some, a car equipped with a monitored GPS device would be worthless because of the value placed on privacy. The inconvenience and expense caused to the owner is debatable, but likely minimal.

## C. BALANCING TEST

Under the definition articulated in the Court's jurisprudence, this interference is not reasonable. The possessory interference is both highly intrusive and lengthy in duration. First, the owner of the vehicle has not diluted his possessory interest in his property by "relinquish[ing] control . . . to a third party"<sup>205</sup> as did *Jacobsen* when he gave his package to Federal Express.<sup>206</sup> Moreover, unlike the dog sniff in *Chadwick*, the intrusion of a GPS device exposes more than simply incriminating information. It instead reveals an unparalleled amount of information about the target—both personal and mundane, private and public. GPS devices enable the government to monitor an individual's movements for twenty-four hours a day, and for weeks or months at a time. All movements are recorded; there is no filter for information relating solely to incriminating or explicit crimi-

nal activity. Every move, every turn is recorded. Use of the GPS device perverts the fundamental concept of property, which vests in its owner the right to exclude all others from it. The use of a GPS device is somewhat like the deprivation of property in *Jacobsen* where the deprivation was permanent.<sup>207</sup> The Court there found the scope of the intrusion to be trivial because only a trace amount of the powder was destroyed. Here, however, law enforcement is not taking a trace amount of the car, but rather converting the entire possession for their purposes.

As in *Jacobsen*, the intrusion imposed by a GPS device is extended in duration. Law enforcement can maintain their interference with an individual's possessory interests in perpetuity. They use GPS devices to help gather evidence to solve crimes. One of two results is possible—either they solve the crime or they do not. If they solve the crime, either they have caught the individual they targeted with the GPS device (Targeted Person), or they caught someone else (Actual Culprit). Where the Actual Culprit is not the Targeted Person, law enforcement has no incentive to stop monitoring the Targeted Person. The device is a sunk cost, and they can continue to gather information to use retroactively should another crime be committed that they have difficulty solving. The next time they have a “whodunit” on their hands, they can simply access location information for all individuals they have subjected to GPS surveillance and hope for a positive match. In the third and final scenario, if law enforcement cannot solve the crime, the GPS device will live on indefinitely, constantly transmitting information that authorities hope will help them to solve the puzzle. In two out of these three plausible scenarios, use of the GPS device is not only indefinite, but also potentially permanent.

Finally, no interest of law enforcement supports the continuous, uninterrupted seizure of personal property. The only law enforcement interest at stake is that in preventing and investigating crime. This interest, however, does not justify twenty-four hour seizure of an individual's vehicle, particularly when the owner may not even be suspected of a crime.<sup>208</sup> While law enforcement typically has a reason for following someone, they have not always acted so scrupulously. In New York, authorities were unable to articulate their reason for following Mr. Weaver.<sup>209</sup> In both *Jacobsen* and *Terry*, the ratio of government interest to intrusion was quite high. The Court was careful to note that the intrusion in both *Terry* and *Jacobsen* was low.<sup>210</sup> By contrast the governmental interests—preventing and detecting crime and ensuring the safety of the officer in *Terry*—were quite high. Here however, the governmental interest, while somewhat strong, pales in comparison to the degree and length of intrusion of one's possessory interests.

In sum, even without the added scrutiny invited by the implication of First Amendment concerns, the attachment of a GPS device constitutes the seizure of a car. Law enforcement meaningfully interferes with possessory interests by converting

the nature of the automobile from a provider of transportation to a government informant. Additionally, law enforcement must exert dominion and control over the vehicle, thus violating the fundamental prerogative of the owner to exclude all others from his or her own property. This interference is both intrusive and constant. It provides a comprehensive dossier of a person's interactions, travels, and associates, and it does so without pause. The conversion is indefinite but likely extended in duration and potentially permanent. Finally, the governmental interest in preventing and detecting crime does not balance out the intrusiveness and duration that renders the seizure unreasonable. The fact that the seizure implicates First Amendment concerns only strengthens this analysis.

## VI. THE USE OF A GPS DEVICE SHOULD BE PREAUTHORIZED BY A WARRANT

The text of the Fourth Amendment does not mandate that law enforcement obtain a warrant before conducting a search or seizure. The Fourth Amendment requires only that “[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated . . . .”<sup>211</sup> Nevertheless, the Court has interpreted reasonableness to require a warrant before law enforcement can conduct a search or seizure.<sup>212</sup> In *Johnson*, the Court overturned an opium user's convictions after law enforcement searched her room without a warrant. The Court did so despite conceding that the presence of an odor that law enforcement officials recognized as burning opium probably furnished the agents with probable cause. Nevertheless, the Court ruled that the decision of whether information known to officers is sufficient to justify the intrusion of a defendant's privacy is to be made by a judicial officer, not the police officer on the ground. The Court clarified that the Amendment's protections do not “den[y] law enforcement the support of the usual inferences which reasonable men draw from evidence.”<sup>213</sup> Instead, the Court required “that those inferences be drawn by a neutral and detached magistrate instead of being judged by the officer engaged in the often competitive enterprise of ferreting out crime.”<sup>214</sup>

Therefore, a ruling that the use of GPS devices constitutes a Fourth Amendment seizure triggers the warrant requirement. While there are several “specifically established and well-delineated exceptions” to the warrant requirement, none applies to the most common use of GPS devices.<sup>215</sup> Some of the following are exceptions that the Court has recognized: the presence of exigent circumstances such as the hot pursuit of a fleeing felon,<sup>216</sup> investigating reasonably suspicious behavior and ensuring officer safety,<sup>217</sup> consent searches,<sup>218</sup> searches conducted incident to a valid arrest,<sup>219</sup> searches of automobiles,<sup>220</sup> and searches of items in plain view.<sup>221</sup> Each exception is informed

by a particular purpose. With respect to investigatory stops and frisks, the Court noted that officer safety was a critical basis for the exception but required that any search be limited to only that exploration necessary to discover weapons.<sup>222</sup> Similarly, when discussing the exigent circumstances exception, the Court reasoned that such an exception exists to protect against the danger that evidence is destroyed or harm caused to the pursuing officers.<sup>223</sup> In the case of GPS devices, there is little reason to create an exception to the warrant requirement. Law enforcement must already obtain and attach a GPS device. There is no reason they could not obtain a warrant as well. In short, law enforcement should be required to obtain a warrant before tracking suspects by attaching GPS devices to their vehicles.

## VII. CONCLUSION

Jeremy Bentham described his panopticon as “a new mode of obtaining power of mind over mind, in a quantity hitherto without example.”<sup>224</sup> The use of GPS devices leverages technology to achieve the same result as a panopticon. The *Weaver* case aside, all indications are that law enforcement has been judicious in their deployment of GPS technology. Nevertheless, it defies logic to wait on the day that the Government “institute programs of mass surveillance of vehicular movements”<sup>225</sup> as Judge Posner suggests. The irony of Judge Posner’s statement is that like the prisoners in a panopticon, neither the American people nor the judicial system will be aware that law enforcement is watching. In other words, there is little evidence to suggest that the public would be aware of mass surveillance even if it were taking place. While it may be counter-intuitive to think of the attachment of a GPS device as a seizure rather than a search, the dissonance is a result of the evolution of the Fourth Amendment search and seizure doctrines. Under the prevailing interpretation of the seizure prong of the Fourth Amendment, the use of GPS devices constitutes a seizure, and law enforcement should be required to obtain a warrant before using them.

CLB

<sup>1</sup> See *Starchase Announces Plans to Beta-Test Vehicle Tagging and Tracking Technology With Los Angeles Police Department*, STARCHASE.COM, [http://www.starchase.com/uploads/pdfs/pressrelease\\_LAPD.pdf](http://www.starchase.com/uploads/pdfs/pressrelease_LAPD.pdf) (last visited July 21, 2009) (discussing how the miniature GPS is attached to the suspect’s car, and the location of the car is “superimposed over a computer map display”).

<sup>2</sup> *Id.* (recommending this new technology to minimize the “damaging risks” of police pursuits); see Erik Sofge, *Top 5 Next Gen Cop Car Gadgets*, POPULAR MECHANICS (Nov. 16, 2007, 3:11 AM), available at [http://www.popularmechanics.com/technology/military\\_law/4231942.html?page=4](http://www.popularmechanics.com/technology/military_law/4231942.html?page=4) (explaining how the fleeing suspect would need to pull

over to rip off the GPS tag to avoid police detection, but by that point the police would have reached the suspect).

<sup>3</sup> See, e.g., *United States v. Garcia*, 474 F.3d 994, 995 (7th Cir. 2007) (likening the GPS attachment to a suspect’s vehicle to a general satellite surveillance, such as Google Earth, contending that the GPS does not constitute a search within the Fourth Amendment context); *New York v. Weaver*, 909 N.E. 2d 1195, 1206 (N.Y. 2009) (contending that attaching a GPS to the defendant’s car while parked in a public place was not a violation of privacy but was a violation of property rights).

<sup>4</sup> *Johnson v. United States*, 333 U.S. 10, 14 (1948); see U.S. CONST. AMEND. IV; see also *infra* Part VI (arguing that demonstrating probable cause to a judge should be a condition precedent to law enforcement having the authority to attach a GPS device on a defendant’s car).

<sup>5</sup> Renee McDonald Hutchins, *Tied Up in Knotts? GPS Technology and the Fourth Amendment*, 55 U.C.L.A. L. REV. 409, 458 (2007) (explaining how attaching GPS devices to various items, such as shoes, cars, and other items, the police can monitor the suspect more comprehensively).

<sup>6</sup> See *Katz v. United States*, 389 U.S. 347, 350 (1967) (“That Amendment protects individual privacy against certain kinds of governmental intrusion . . .”); see also *Kyllo v. United States*, 533 U.S. 27, 34 (2001) (“To withdraw protection of this minimum expectation would be to permit police technology to erode the privacy guaranteed by the Fourth Amendment.”); *Garcia*, 474 F.3d at 998 (finding that the Fourth Amendment required “a tradeoff between security and privacy”).

<sup>7</sup> U.S. CONST. AMEND. IV.

<sup>8</sup> Hopefully, the Court can one day anticipate the impact of emerging technologies and craft doctrine to anticipate the corresponding shift in surveillance techniques.

<sup>9</sup> See Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 806 (2004) (contending that legislative policies impose greater privacy protections than the Fourth Amendment can today).

<sup>10</sup> *Id.* (asserting that perhaps the legislative branch can better protect the Fourth Amendment than the judiciary).

<sup>11</sup> See Susan Brenner, *The Search and Seizure of Computers and Electronics: The Fourth Amendment in An Era of Ubiquitous Technology*, 75 MISS. L.J. 1, 83 (2005) (concluding that technology “erode[s]” privacy and private papers mentioned in the Fourth Amendment).

<sup>12</sup> Brock N. Meeks, *Is Privacy Possible in the Digital Age?*, MSNBC.COM (Dec. 8, 2000, 1:46 AM), <http://www.msnbc.msn.com/id/3078854/>; Scott McNealy, *On the Record: Scott McNealy*, SAN FRANCISCO CHRONICLE, Sept. 14, 2003, <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2003/09/14/BU141353.DTL&type=business> (last visited July 21, 2009) (the Chairman, President and CEO of Sun Microsystems, Inc., commenting on Fourth Amendment privacy, stated that “[t]he point I was making was someone already has your medical records[,] [s]omeone has my dental records[,] [s]omeone has my financial records[,] [s]omeone knows just about everything about me”).

<sup>13</sup> See generally Kerr, *supra* note 9, at 806 (recognizing that legislative protections of privacy due to technological innovations has proven as strong as Fourth Amendment protections).

<sup>14</sup> GPS devices are now applied to solve problems large and small, important and trivial. They can be used to get directions in your car. See, e.g., *Nuvi Series*, GARMIN.COM, <http://www.garmin.com/garmin/cms/us/ontheroad/nuviseries>. They may be used on your phone. See, e.g., *Maps + Compass*, APPLE.COM, <http://www.apple.com/iphone/features/maps-compass.html>. GPS devices are also used to find coffee shops and other public places. See, e.g., *Welcome to Waymarking.com!*, WAYMARKING.COM, <http://www.waymarking.com/>. GPS devices may find your pets, as well. See, e.g., David Pogue, *Zoomback Tracks Your Dog, Your Car, Even Your Children*, N.Y. TIMES, Apr. 22, 2009, available at <http://www.nytimes.com/2009/04/23/technology/personaltech/23pogue.html>.



<sup>15</sup> See Hutchins, *supra* note 5, at 413 (suggesting that Fourth Amendment jurisprudence already has an analytical framework in place to deal with emerging technology).

<sup>16</sup> See Paul Ohm, *The Olmsteadian Seizure Clause: The Fourth Amendment and the Seizure of Intangible Property*, 2008 STAN. TECH. L. REV. 2, 10 (2008) (arguing that the impact of *Katz* on Fourth Amendment cases is incomplete because courts and scholars have focused on search but not seizure).

<sup>17</sup> *Id.* (mentioning that *Katz*'s reasonable expectation of privacy test shifted focus to searches).

<sup>18</sup> *Kyllo v. United States*, 533 U.S. 27, 32 (2001).

<sup>19</sup> See Akhil Reed Amar, *Fourth Amendment First Principles*, 107 HARV. L. REV. 757, 772-73 (1994) (recanting the history of early Americans who responded to abuses by British Executive officials with a warrant requirement).

<sup>20</sup> See *Stanford v. Texas*, 379 U.S. 476, 483-484 (1965) (noting that *Wilkes v. Wood* in 1763 recognized a degree of proper specificity in a search warrant, not merely a general request to find "authors, printers, and publishers of a seditious and treasonable paper").

<sup>21</sup> *Semayne's Case*, 5 Coke's Repts. 91a, 77 Eng. Rep. 194 (K.B. 1604). "One of the most forceful expressions of the maxim was that of William Pitt in Parliament in 1763: 'The poorest man may in his cottage bid defiance to all the force of the crown. It may be frail—its roof may shake—the wind may blow through it—the storm may enter, the rain may enter—but the King of England cannot enter—all his force dares not cross the threshold of the ruined tenement.'"

<sup>22</sup> Amar, *supra* note 19, at 772 n. 54.

<sup>23</sup> ANDREW E. TASLITZ, *RECONSTRUCTING THE FOURTH AMENDMENT: A HISTORY OF SEARCH AND SEIZURE, 1789-1868* 20 (2006).

<sup>24</sup> Amar, *supra* note 19, at 772 n. 54.

<sup>25</sup> *Id.*

<sup>26</sup> See ARTHUR H. CASH, *JOHN WILKES: THE SCANDALOUS FATHER OF CIVIL LIBERTY* 105 (2006) (illustrating the "public outcry" after authorities arrested forty-nine people instead of adhering to the original three individuals).

<sup>27</sup> Amar, *supra* note 19, at 772 n. 54 (describing how Wilkes's house was broken into, and subsequently he was arrested and imprisoned in the Tower of London).

<sup>28</sup> See CASH, *supra* note 26, at 109; see KENNETH IRA KERSCH, *CONSTRUCTING CIVIL LIBERTIES: DISCONTINUITIES IN THE DEVELOPMENT OF AMERICAN CONSTITUTIONAL LAW* 34 (2004) (explaining that the *Wilkes* case led to the restrictions against writs of assistance in the United States).

<sup>29</sup> Amar, *supra* note 19, at 772 n. 54. "The *Wilkes* case was a cause célèbre in the colonies, where Wilkes and Liberty became a rallying cry for all those who hated government oppression. Americans across the continent named cities, counties, and even children in honor of Wilkes and the libertarian judge, Lord Camden. Witness, for example, Camden, New Jersey; Camden, South Carolina; Wilkes-Barre, Pennsylvania; Wilkes County, Georgia; Wilkes County, North Carolina; and of course, John Wilkes Booth.

<sup>30</sup> *U.S. Constitution: Fourth Amendment: Search and Seizure*, FINDLAW, <http://caselaw.lp.findlaw.com/data/constitution/amendment04/01.html>.

<sup>31</sup> See Amar, *supra* note 19, at 772 (arguing that the *Wilkes* case, "not the 1761 Boston writs of assistance controversy," established a shift towards the requirements for a search and seizure in the American Bill of Rights).

<sup>32</sup> 277 U.S. 438 (1928).

<sup>33</sup> It also disclosed "a conspiracy of amazing magnitude" to engage in bootlegging, involving the employment of some fifty persons, use of sea vessels for transportation, an underground storage facility in Seattle, and the maintenance of a central office fully equipped with executives, bookkeepers, salesmen, and an attorney. *Id.* at 455-57. According to the record,

even in a bad month, the sales amounted to some \$176,000; the grand total for a year probably came out to some \$2,000,000. *Id.*

<sup>34</sup> *Id.* at 464.

<sup>35</sup> 365 U.S. 505 (1961).

<sup>36</sup> 316 U.S. 129 (1942).

<sup>37</sup> See *id.* at 131-32 (explaining how the detectaphone was able to pick up conversations of three lawyers and amplify them so that a stenographer, who was present during the surveillance, could record what was said).

<sup>38</sup> *Id.* at 135 (discussing how the court did not accept the petitioner's argument that *Olmstead* was distinct simply because it involved a different type of surveillance tactic and holding that the use of a detectaphone is not a Fourth Amendment violation).

<sup>39</sup> See *Silverman*, 365 U.S. at 507-08, 512 (holding that a spike mike violates the Fourth Amendment because a spike mike would capture what "an eavesdropper, hidden in the hall, the bedroom, or the closet, might have heard").

<sup>40</sup> *Id.*

<sup>41</sup> See generally *Olmstead v. United States*, 277 U.S. 438, 438 (1928) (holding that a wiretap is not a Fourth Amendment violation).

<sup>42</sup> See *Silverman*, 365 U.S. at 507-09 (reciting several "frightening paraphernalia" used for surveillance only to state that they did not need to "contemplate the Fourth Amendment implications . . . which the vaunted marvels of an electronic age may visit upon human society").

<sup>43</sup> In *Olmstead*, Justice Brandeis famously wrote that the framers sought to protect Americans in "their beliefs, their thoughts, their emotions, and their sensations. They conferred, as against the government, the right to be let alone as the most comprehensive of rights and the right most valued by civilized men. To protect that right, every unjustifiable intrusion by the government upon the privacy of the individual, whatever the means employed, must be deemed a violation of the Fourth Amendment." *Olmstead*, 277 U.S. at 478-79. Justice Douglass similarly lamented that irrespective of "physical penetration" the "intimacies of the home were tapped, recorded, or revealed." *Silverman*, 365 U.S. at 512.

<sup>44</sup> *Katz v. United States*, 389 U.S. 347, 351 (1967) (referencing the principle that "[w]hat a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection").

<sup>45</sup> *Id.* at 350.

<sup>46</sup> *Id.* at 353.

<sup>47</sup> *Id.* at 361 (Harlan, J. concurring).

<sup>48</sup> See U.S. CONST. AMEND. IV. "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

<sup>49</sup> U.S. CONST. AMEND. IV.

<sup>50</sup> *United States v. Leon*, 468 U.S. 897, 913-14 (1984) (holding that to incentivize search warrant approval by a neutral magistrate, the Court recognized a good faith exception by police officers in relying on magistrate's finding probable cause); *Mincey v. Arizona*, 437 U.S. 385, 390 (1978) (concluding that searches without judicial approval are per se unreasonable under the Fourth Amendment); *Coolidge v. New Hampshire*, 403 U.S. 443, 454-55 (1971) (recognizing only limited exceptions to the per se unreasonableness to searches without prior judicial approval); *Johnson v. United States*, 333 U.S. 10, 14-15 (1948) (emphasizing that the Fourth Amendment would be null and void if police officers conducted a search because of the assumption a neutral magistrate would approve a warrant).

<sup>51</sup> See *United States v. Garcia*, 474 F.3d 994, 996 (7th Cir. 2007)

(elaborating that while "the framers of the Fourth Amendment were more fearful that the warrant would protect the police from the citizen's tort suit through operation of the doctrine of official immunity than hopeful that

the warrant would protect the citizen against the police, and although the effective neutrality and independence of magistrates in ex parte proceedings for the issuance of search warrants may be doubted” (citations omitted)).

<sup>52</sup> *Id.* (reiterating that this process exists because then police must make a record of the investigation beforehand so that way if the search is fruitful, they cannot simply construct a justification later).

<sup>53</sup> See *Kyllo v. United States*, 533 U.S. 27, 32-33 (2001) (distinguishing between a search, such as aerial surveillance, and an unreasonable search under the Fourth Amendment, such as of a home, and discussing some of the nuances which may define a search).

<sup>54</sup> Justice Scalia is but one example. In a concurring opinion he described the two pronged test as a “fuzzy” standard, which is both “self-indulgent” and “unhelpful.” *Minnesota v. Carter*, 525 U.S. 83, 91-92, 97 (1998) (Scalia, J., concurring). Three years later, writing for the majority, he rebuts charges that the test is “circular, and hence subjective and unpredictable” and forcefully advocates the idea that the test protects the “expectation of privacy” enshrined in the Fourth Amendment. *Kyllo*, 533 U.S. at 34.

<sup>55</sup> In *White*, Justice Harlan criticized the Court’s application of the phrase as a misunderstanding of his *Katz* concurrence: “Since it is the task of the law to form and project, as well as mirror and reflect, we should not, as judges, merely recite the expectations and risks without examining the desirability of saddling them upon society. The critical question, therefore, is whether under our system of government, as reflected in the Constitution, we should impose on our citizens the risks of the electronic listener or observer without at least the protection of a warrant requirement.” *United States v. White*, 401 U.S. 745, 786 (1971) (Harlan, J., concurring).

<sup>56</sup> *Smith v. Maryland*, 442 U.S. 735, 735 (1979); *Katz v. United States*, 389 U.S. 347, 353 (1967).

<sup>57</sup> Using an opaque bag and placing it above a seat demonstrates a subjective expectation of privacy in the contents of the bag. *Bond v. United States*, 529 U.S. 334, 338-39 (2000). In contrast, the Court found that it was not “entirely clear” whether erecting a 10 foot fence “manifested merely a hope that no one would observe his unlawful gardening pursuits.” *California v. Ciraolo*, 476 U.S. 207, 211-12 (1986).

<sup>58</sup> *Smith*, 442 U.S. at 740 n. 5.

<sup>59</sup> Indeed, some argue that the subjective part of the test is misplaced. Anthony G. Amsterdam, *Perspectives on the Fourth Amendment*, 58 MINN. L. REV. 349, 384 (1974) (contending that “[a]n actual, subjective expectation of privacy obviously has no place in a statement of what *Katz* held or in a theory of what the Fourth Amendment protects”).

<sup>60</sup> Hutchins, *supra* note 5, at 429.

<sup>61</sup> *Id.*

<sup>62</sup> *United States v. White*, 401 U.S. 745, 786 (1971); see Dorothy J. Glancy, *Privacy on the Open Road*, 30 OHIO N.U. L. REV. 295, 329 (2004) (indicating the technological advances in radio transmitters can limit a person’s “freedom from [government] scrutiny”).

<sup>63</sup> See *Rakas v. Illinois*, 439 U.S. 128, 153 (1978) (citing *Jones v. United States*, 362 U.S. 257 (1960), as standing for the proposition that a person has a “Fourth Amendment privacy interest in an apartment in which he had slept and in which he kept his clothing”).

<sup>64</sup> Hutchins, *supra* note 5, at 429-30.

<sup>65</sup> See *id.* at 430 (questioning whether the Framers would have concluded certain intrusions as objectionable).

<sup>66</sup> See *id.* at 432 (arguing that the Court often focuses on the type of information revealed and the quantity of information potentially disclosed).

<sup>67</sup> *Smith v. Maryland*, 442 U.S. 735, 741 (1979).

<sup>68</sup> *Id.* at 744.

<sup>69</sup> *Id.* at 741.

<sup>70</sup> See *United States v. Garcia*, 474 F.3d 994, 996-97 (7th Cir. 2007) (discussing *Knotts* and the Supreme Court’s decision that the beeper did not constitute a search, noting also that circuits split over the question whether installing the device constitutes a search).

<sup>71</sup> See *United States v. Knotts*, 460 U.S. 276, 277-78 (1983) (referencing that at some point, the beeper signal was lost and was only rediscovered with the assistance of a helicopter).

<sup>72</sup> See *id.* at 282 (emphasizing that the defendant in this case was driving on a public highway, he could be viewed entering his premises from the public highway, and he could be seen moving the chloroform drum in his open fields).

<sup>73</sup> *Id.* at 281.

<sup>74</sup> Hutchins, *supra* note 5, at 433.

<sup>75</sup> See generally *Kyllo v. United States*, 533 U.S. 27, 27, 31-32 (2001) (discussing how the permissibility of “[v]isual surveillance was unquestionably lawful because ‘the eye cannot by the laws of England be guilty of a trespass,’” but suggesting that this general permissibility is no longer so simple).

<sup>76</sup> *Id.* at 35 n. 2.

<sup>77</sup> See *id.* at 38 n. 5 (vindicating “imperceptibility” as the key ingredient to finding an extrasensory device because without such a device, the intimate activities within the home are imperceptible to police); see also Hutchins, *supra* note 5, at 437 n. 151 (noting that *Kyllo* observes that that the thermal imager detected “infrared radiation, which virtually all objects emit but which is not visible to the naked eye” and disputes the dissent’s description of the thermal imager as a sense-augmenting device by noting that “on the night of January 16, 1992, no outside observer could have discerned the relative heat of *Kyllo*’s home without thermal imaging”).

<sup>78</sup> See *Katz v. United States*, 389 U.S. 347, 351 (1967) (insisting that the Fourth Amendment protects people, not places); see also *Kyllo*, 533 U.S. at 28, 35 (stating that any “mechanical interpretation of the Fourth Amendment [was rejected] in *Katz*”).

<sup>79</sup> *Katz*, 389 U.S. at 352.

<sup>80</sup> Consider *Smith* which noted that a pen register revealed “[n]either the purport of any communication between the caller and the recipient of the call, their identities, nor whether the call was even completed . . .” *Smith v. Maryland*, 442 U.S. 735, 741 (1979) (quoting *United States v. N.Y. Tel. Co.*, 434 U.S. 159, 167 (1977)).

<sup>81</sup> *United States v. Knotts*, 460 U.S. at 284.

<sup>82</sup> *Id.* at 283.

<sup>83</sup> See *Dow Chemical Co. v. United States*, 476 U.S. 227, 235 (1986) (considering two aspects of the Fourth Amendment, including “whether the common-law ‘curtilage’ doctrine encompasses a large industrial complex such as Dow’s, and whether photography employing an aerial mapping camera is permissible in this context”).

<sup>84</sup> *Id.* at 234.

<sup>85</sup> See *id.* at 238 n. 5 (contending that small objects, such as of the size of a class ring, are not identifiable by the photographs, which does not “implicate more serious privacy concerns”).

<sup>86</sup> *Id.* at 239.

<sup>87</sup> *Id.* at 238 (noting that other technological surveillance may implicate the Fourth Amendment).

<sup>88</sup> The Eighth Circuit also addressed this issue but found that the appellant did not have standing to challenge the use of the GPS device. *United States v. Marquez*, 605 F.3d 604, 609 (8th Cir. 2010) (finding, however, that even if the appellant had standing, he would not have a Fourth Amendment claim because “[a] person traveling via automobile on public streets has no reasonable expectation of privacy in his movements from one locale to another”).

<sup>89</sup> See *United States v. Garcia*, 474 F.3d 994, 998 (7th Cir. 2007) (noting also that beeper technology was only a modest improvement over unaided

surveillance yet imagining a situation where police officers randomly attach GPS devices to several cars and tracking them).

<sup>90</sup> *Id.*

<sup>91</sup> See *United States v. Pineda-Moreno*, 591 F.3d 1212, 1213 (9th Cir. 2010) (holding that no search was conducted on the defendant's car despite a four-month long surveillance of the defendant's car through mobile tracking devices).

<sup>92</sup> See *United States v. Maynard*, 615 F.3d 544, 562-63 (D.C. Cir. 2010) (holding that when surveillance is prolonged, the recordings offer a bigger picture, revealing so much more information that "[a] reasonable person does not expect anyone to monitor and retain a record of every time he drives his car, including his origin, route, destination, and each place he stops and how long he stays there").

<sup>93</sup> This case involved an individual, William Bradley Jackson, who was suspected in of the disappearance of his daughter, Valiree. Jackson reported that Valiree was missing on the morning of October 18, 1999. After conducting an investigation of the home and Valiree's bedroom, the police believed that Jackson may have been involved with his daughter's disappearance and informed him of their suspicions.

<sup>94</sup> *Washington v. Jackson*, 76 P.3d 217, 222 (Wash. 2003).

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> *Id.* at 223-24 (concluding that the GPS was extrasensory because it provides a technological substitute for visual tracking).

<sup>98</sup> 909 N.E. 2d 1195 (N.Y. 2009).

<sup>99</sup> *Id.* at 1196 (indicating that the record was unclear as to why the defendant was under surveillance).

<sup>100</sup> See *id.* at 1199 (noting that, unlike a beeper, a GPS follows the target for multiple trips and is "exponentially more sophisticated and powerful . . . that is easily and cheaply deployed and has virtually unlimited and remarkably precise tracking capability").

<sup>101</sup> See, e.g., *id.* at 1200-01 (citing *Adams v. Williams*, 407 U.S. 143 (1972) and *Delaware v. Prouse*, 440 U.S. 648 (1979) as examples that a ride in a motor vehicle does not completely deprive its occupants of any reasonable expectation of privacy).

<sup>102</sup> *Id.* at 1199.

<sup>103</sup> *United States v. Maynard*, 615 F.3d 544, 558 (D.C. Cir. 2010).

<sup>104</sup> See text accompanying *infra* note 180.

<sup>105</sup> See *Maynard*, 615 F.3d at 560-561 (holding, however, that the actions of the target over time did not amount to constructive exposure because it is remote that any one person would constantly observe another individual for one month).

<sup>106</sup> *Id.* at 561 (citing *U.S. Dep't of Justice v. Reporters Comm. for Freedom of Press*, 489 U.S. 749 (1989)).

<sup>107</sup> *Id.*

<sup>108</sup> See *United States v. Jacobsen*, 466 U.S. 109, 114 n. 5 (1984) (referencing how "[w]hile the concept of a 'seizure' of property is not much discussed in our cases, [t]his definition follows from our oft-repeated definition of the 'seizure' of a person"); see also *United States v. Place*, 462 U.S. 696, 700-01 (1983) (recognizing that "in the context of personal property, and particularly containers, the Fourth Amendment challenge is typically to the subsequent search of the container rather than to its initial seizure by the authorities" (emphasis omitted)).

<sup>109</sup> See Major Eric R. Carpenter, *Seizures without Searches: Defining Property Seizures and Developing a Property Seizure Model*, 42 GONZ. L. REV. 173, 173 (2007) (mentioning that many seizures are justified by the plain view doctrine, which often prevents courts from addressing this issue).

<sup>110</sup> See *Texas v. Brown*, 460 U.S. 730, 747 (1983) (recognizing that "the Amendment protects two different interests of the citizen – the interest in retaining possession of property and the interest in maintaining personal privacy"); see *Terry v. Ohio*, 392 U.S. 1, 8-9 (1968) (reiterating a person's

right to control his person without interference from others); see also Antonio Yanez Jr., *Criminal Procedure: Ayeni v. Mottola and the Implications of Characterizing Videotaping as a Fourth Amendment Seizure*, 61 BROOK. L. REV. 507, 510 (1995) (referencing cases that "proclaim[] that privacy, liberty and property, respectively, were the central focus of the Fourth Amendment").

<sup>111</sup> See *Jacobsen*, 466 U.S. at 113 (differentiating between a search, which "occurs when an expectation of privacy that society is prepared to consider reasonable is infringed," and a seizure of property which "occurs when there is some meaningful interference with an individual's possessory interests in that property").

<sup>112</sup> *Id.*

<sup>113</sup> See *Ohm*, *supra* note 16, at 85 (referring to search and seizure as "cohabitant values in the Fourth Amendment").

<sup>114</sup> *United States v. Place*, 462 U.S. 696, 708-09 (1983) (analogizing an investigative seizure of the defendant's luggage to a *Terry* stop and therefore limiting the scope of a permissible seizure to that of an investigative *Terry* search).

<sup>115</sup> *Jacobsen*, 466 U.S. at 113.

<sup>116</sup> See *id.* at 111, 113 (explicating that although the FedEx employee's cut open the package, perhaps without a good reason, the defendant's Fourth Amendment right was not violated because it was not a governmental action).

<sup>117</sup> *Id.* at 111-12.

<sup>118</sup> *Id.* at 112.

<sup>119</sup> See *id.* at 122-23 (opining that because the private Federal Express employee had already opened the package and had told the agents the contents, the court did not find any of the other aspects to be a violation of the Fourth Amendment).

<sup>120</sup> *United States v. Place*, 462 U.S. 696, 708-09 (1983) (noting that these interests are of particular importance when transporting luggage).

<sup>121</sup> *Id.* at 708 (reiterating that the analysis used here is similar to that of a *Terry* stop, the limits of which the Court found were exceeded in this exercise of government action).

<sup>122</sup> *Ohm*, *supra* note 16, at 2-5 (explaining that the Court consistently interprets the seizure clause to protect "only physical property rights and to regulate only the deprivation of tangible things").

<sup>123</sup> See *Berger v. New York*, 388 U.S. 41, 56-57 (1967) (discussing cases where recordings were considered an invasion of privacy but permissible under the Fourth Amendment because the government had secured judicial approval).

<sup>124</sup> See *id.* at 59 (holding that wiretaps are the equivalent of eavesdropping, and therefore "the statute's failure to describe with particularity the conversations sought gives the officer a roving commission to 'seize' any and all conversations"); see also *Ohm*, *supra* note 16, at 18 (declaring that wiretaps are both searches and seizures under the Fourth Amendment).

<sup>125</sup> *Katz v. United States*, 389 U.S. 347, 353 (1967).

<sup>126</sup> *Id.*; Professor Ohm discredits the argument that the Court "was speaking about the Fourth Amendment writ large, without focusing on a search and seizure as two separate acts" by juxtaposing the majority opinions in *Berger* and *Katz* with Justice Black's dissenting opinions in those respective cases which "specifically raise arguments against finding these acts to be seizure." See *Ohm*, *supra* note 16, at 20.

<sup>127</sup> *Ayeni v. Mottola*, 35 F.3d 680, 688-90 (2d Cir. 1994) (*Ayeni I*) (noting, however, that obtaining a photograph for the purpose of simple identification may not be a seizure); *United States v. Villegas*, 899 F.2d 1324, 1334-35 (2d Cir. 1990) (concluding that taking photographs without seizing intangible property can be analogized to seizing a person's conversations, which implicates the Fourth Amendment); *Ayeni v. CBS Inc.*, 848 F. Supp. 362, 367-68 (E.D.N.Y. 1994) (*Ayeni II*) (allowing a camera crew to view a search implicated the Fourth Amendment despite its intangible nature); *United States v. Johnson*, 452 F.2d 1363, 1371-72 (D.C. Cir.



1971) (remanding the case to determine whether taking a photograph of a suspect without probable cause to arrest is a search and seizure); *but see* *Bills v. Aseltine*, 958 F.2d 697, 707 (6th Cir. 1992) (holding that taking photographs does not constitute a seizure because photographs were taken in plain view of the area).

<sup>128</sup> *Ayeni I*, 35 F.3d at 683.

<sup>129</sup> *Id.* at 688 (quotes omitted).

<sup>130</sup> *Ohm*, *supra* note 16, at 2 (explaining that the Fourth Amendment protects tangible items).

<sup>131</sup> *United States v. Jacobsen*, 466 U.S. 109, 120-21 (1984).

<sup>132</sup> *Id.* at 124-25 (explaining that destroying the powder made deprivation of property interest permanent); *see* *Carpenter*, *supra* note 108, at 188 (elaborating that a seizure occurred when there was meaningful government interference with possessory interest).

<sup>133</sup> *United States v. Place*, 462 U.S. 696, 709-10 (1983) (noting that the Court has “never approved a seizure of the person for the prolonged 90-minute period involved here”).

<sup>134</sup> *United States v. Va Lerie*, 424 F.3d 694, 702 (8th Cir. 2005) (emphasis added).

<sup>135</sup> *Id.* at 703.

<sup>136</sup> *Jacobsen*, 466 U.S. at 124-25 (citations omitted).

<sup>137</sup> Indeed the Court stated that it would have been poor police work if the observing officer had not stopped the defendant to investigate further. *Terry v. Ohio*, 392 U.S. 1, 22-24 (1968).

<sup>138</sup> *Id.* at 10, 17.

<sup>139</sup> *Id.* at 30 (discussing how the police officers refrained from an exploratory search, limiting the scope to a patdown to secure any weapons).

<sup>140</sup> *Id.* (the limiting language used by the Court states “where a police officer observes unusual conduct which leads him reasonably to conclude in light of his experience that criminal activity may be afoot and that the persons with whom he is dealing may be armed and presently dangerous, where in the course of investigating this behavior he identifies himself as a policeman and makes reasonable inquiries, and where nothing in the initial stages of the encounter serves to dispel his reasonable fear for his own or others’ safety, he is entitled for the protection of himself and others in the area to conduct a carefully limited search of the outer clothing of such persons in an attempt to discover weapons which might be used to assault him”).

<sup>141</sup> *United States v. Place*, 462 U.S. 696, 705 (1983).

<sup>142</sup> *United States v. Jacobsen*, 466 U.S. 109, 124 (1984).

<sup>143</sup> *Place*, 462 U.S. at 707.

<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 708.

<sup>146</sup> *Id.* at 705-06.

<sup>147</sup> *See id.* at 709-10 (recognizing the Court has never condoned a seizure of ninety minutes under these circumstances).

<sup>148</sup> *United States v. Van Leeuwen*, 397 U.S. 249, 253 (1970) (elaborating that “on the facts of this case . . . that there were two packages going to separate destinations, the unavoidable delay in contacting the more distant of the two destinations, the distance between Mt. Vernon and Seattle — a 29-hour delay between the mailings and the service of the warrant cannot be said to be ‘unreasonable’”).

<sup>149</sup> *United States v. Jacobsen*, 466 U.S. 109, 124-25 (1984) (converting the “deprivation of property” from temporary to permanent).

<sup>150</sup> *See id.* at 125 (explaining that law enforcement took only a trace amount of the powder, and the defendants conceded they would not have noticed the missing powder).

<sup>151</sup> Indeed, it seems as if individuals are identifiable just by looking at their search history. *See* Katie Hafner, *Researchers Yearn to Use AOL Logs But They Hesitate*, N.Y. Times, Aug 23, 2006, <http://www.nytimes.com/2006/08/23/technology/23search.html?ex=1313985600&en=cc878412ed34dad0&ei=5088&partner=rssnyt&emc=rss> (mentioning that AOL

posted enough information about its users that someone could identify these users).

<sup>152</sup> *Roberts v. U.S. Jaycees*, 468 U.S. 609, 617-18 (1984).

<sup>153</sup> *NAACP v. Alabama*, 357 U.S. 449, 461 (1958) (balancing potential deterrent or unintended consequences against government regulation of industries).

<sup>154</sup> *Id.*

<sup>155</sup> *U.S. Jaycees*, 468 U.S. at 622.

<sup>156</sup> *Id.* at 618.

<sup>157</sup> *Id.* at 619.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 622-23 (listing, for example, that the government may take action to impose penalties or withhold benefits to members of a disfavored group, require disclosure of fact of membership in a group seeking anonymity, or interfere with internal affairs of a group).

<sup>160</sup> *Maryland v. Macon*, 472 U.S. 463, 468 (1985) (contending that “[t]he First Amendment imposes special constraints on searches for and seizures of presumptively protected material, and requires that the Fourth Amendment be applied with ‘scrupulous exactitude’ in such circumstances”) (citations and emphasis omitted).

<sup>161</sup> *Id.* at 468-69 (holding that “[a]bsent some action taken by government agents that can properly be classified as a ‘search’ or ‘seizure,’ the Fourth Amendment rules designed to safeguard First Amendment freedoms do not apply”) (citations and emphasis omitted).

<sup>162</sup> *Stanford v. Texas*, 379 U.S. 476, 484-85 (1965) (noting that “unrestricted power of search and seizure could also be an instrument for stifling liberty of expression”) (citation omitted).

<sup>163</sup> *Heller v. New York*, 413 U.S. 483, 491 (1973).

<sup>164</sup> In this assessment, the author assumes a typical fact pattern. There are many variations, but in general, the police suspect an individual of wrongdoing. The police then attach a GPS device to his vehicle when it is parked on public property. The police then either remotely track the vehicle or periodically download the information stored on the GPS device.

<sup>165</sup> *United States v. Knotts*, 460 U.S. 276, 283-84 (1983); *but see* *United States v. Garcia*, 474 F.3d 994, 998 (7th Cir. 2007) (ignoring the language in *Knotts* explicitly limiting the holding to situations that do not involve twenty-four hour surveillance of individuals, while focusing on the language prohibiting dragnet procedures).

<sup>166</sup> *Marco Polo* is a children’s game that takes place in a swimming pool. One player (the searcher), keeping his or her eyes closed, must try to tag the other players. The searcher can only sense where the other players are by sound, calling out “Marco!” The other players must respond with “Polo!” In this way, the searcher tries to follow the sounds to tag any of the other players.

<sup>167</sup> For a comprehensive technical discussion of GPS technology, *see* *Hutchins*, *supra* note 5, at 414.

<sup>168</sup> *See* *New York v. Weaver*, 909 N.E. 2d 1195, 1199 (N.Y. 2009) (recognizing that “constant, relentless tracking of anything is now not merely possible but entirely practicable” using GPS devices); *see* *Washington v. Jackson*, 76 P.3d 217, 223 (Wash. 2003) (“However, when a GPS device is attached to a vehicle, law enforcement officers do not in fact follow the vehicle. Thus, unlike binoculars or a flashlight, the GPS device does not merely augment the officers’ senses, but rather provides a technological substitute for traditional visual tracking.”).

<sup>169</sup> *See, e.g., Weaver*, 909 N.E.2d at 1200 (illustrating that the authorities could not articulate any reason they had attached a GPS device to Weaver’s car, forcing courts to address GPS technology under judicial supervision).

<sup>170</sup> *Katz v. United States*, 389 U.S. 347, 352 (1967).

<sup>171</sup> *See, e.g., Arizona v. Gant*, 129 S. Ct. 1710, 1720 (2009) (finding that the “privacy interest in [one’s] vehicle [while] less substantial than in his home . . . is nevertheless important and deserving of constitutional



protection”) (citations omitted); *Delaware v. Prouse*, 440 U.S. 648, 662-63 (1979) (“An individual operating or traveling in an automobile does not lose all reasonable expectation of privacy simply because the automobile and its use are subject to government regulation . . . Were the individual subject to unfettered governmental intrusion every time he entered an automobile, the security guaranteed by the Fourth Amendment would be seriously circumscribed.”); *but see Cardwell v. Lewis*, 417 U.S. 583, 590 (1974) (“The search of an automobile is far less intrusive on the rights protected by the Fourth Amendment than the search of one’s person or of a building.”).

<sup>172</sup> *See, e.g., Cardwell*, 417 U.S. at 592 (holding a “warrantless examination” of a vehicle’s exterior does not violate the Fourth Amendment); *see also South Dakota v. Opperman*, 428 U.S. 364, 367 (1976) (“Besides the element of mobility, less rigorous warrant requirements govern because the expectation of privacy with respect to one’s automobile is significantly less than that relating to one’s home or office.”).

<sup>173</sup> *United States v. Knotts*, 460 U.S. 276, 281 (1983) (explaining that “[a] person travelling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another”).

<sup>174</sup> *Brenner, supra* note 11, at 28 (discussing caselaw that holds a person driving a vehicle acknowledged to the public on which roads the person drove, which turns the person made, and where the person ended).

<sup>175</sup> “Moreover, because of the passive nature of the system, the government can easily monitor the comings and goings of an entire family or a group of associates. Moreover, many GPS-enhanced surveillance systems retain records that can be reviewed and compared months or even years later. Accordingly, information about networks of people and associations can be developed, retained, and closely analyzed. The police could conclusively determine that every Monday I meet Diane and Kris for yoga, but on Tuesdays, Kris goes out with Roderick and Ray, while I work late. Or, that for the month of May, I frequently stopped by Julie’s Tattoo Parlor before stopping at Jay and Kurt’s apartment. They could generate and compare such records for weeks or months at a time to develop a comprehensive digest of my friends, associates, preferences, and desires.” *Hutchins, supra* note 5, at 458.

<sup>176</sup> *Id.* at 450. “More importantly, nothing is lost by conceding, at least for the purpose of assessing intrusiveness within the existing analytical framework, that the type of information revealed by GPS-enhanced tracking places the technology in the sense-augmenting category.” *Id.*

<sup>177</sup> *See, e.g., New York v. Weaver*, 909 N.E. 2d 1195, 1199 (N.Y. 2009) (holding that a “GPS is not a mere enhancement of human sensory capacity, it facilitates a new technological perception of the world in which the situation of any object may be followed and exhaustively recorded”); *Oregon v. Campbell*, 759 P.2d 1040, 1048-49 (Or. 1988) (holding use of a radio transmitter is a search because it did not augment vision, and enabled police to find evidence they could not have found through visual surveillance); *Washington v. Jackson*, 76 P.3d 217, 231 (Wash. 2003) (holding that placement of GPS device is a search as it does not augment senses, but instead provides technological substitute).

<sup>178</sup> *See Hutchins, supra* note 5, at 450 (conceding that GPS devices are sense augmenting devices, while arguing that use of such devices constitutes a search because 24-hour surveillance is extraordinarily difficult).

<sup>179</sup> In both *Knotts* and *Karo*, the fact that the police could not at all times follow the car was irrelevant to the Court. The Court focused on whether it was theoretically possible for them to do so. Use of the beeper was essential in that case because it was not feasible, given the terrain, the length of the journey, and the possibility of discovery were closer tailing attempted, for the police to keep track of the suspect’s peregrinations with only visual surveillance. Yet a look at the facts in *Karo* strongly suggests that what the Court there characterized as a search uncovered a fact—that the can was presently within the home—which could have otherwise been

discovered (at least in the sense of the unrealistic approach followed in *Knotts*). Agents saw the vehicle known to be carrying the container come to the house for which they later obtained a warrant, and the agents also saw that vehicle depart later. What they did not see, however, was whether the can with the beeper was still in the rear bed of the pickup truck, apparently because (as the Court noted) “the agents did not maintain tight surveillance for fear of detection.” *United States v. Karo*, 468 U.S. 705, 709 (1984).

<sup>180</sup> *United States v. Garcia*, 474 F.3d 994, 998 (7th Cir. 2007).

<sup>181</sup> *See Dow Chemical Co. v. United States*, 476 U.S. 227, 228, 238 (1986) (conceding that “surveillance of private property by using highly sophisticated surveillance equipment not generally available to the public, such as satellite technology, might be constitutionally proscribed absent a warrant” while finding that “the photographs [in the case] were not so revealing of intimate details as to raise constitutional concerns”).

<sup>182</sup> *GPS Augmentations*, GLOBAL POSITIONING SYSTEM, <http://www.gps.gov/systems/augmentations/index.html> (last visited Nov. 11, 2010).

<sup>183</sup> *Hutchins, supra* note 5, at 459.

<sup>184</sup> *See Garcia*, 474 F.3d at 997 (recognizing that the “meaning of a Fourth Amendment search must change to keep pace with the march with science,” such as with thermal imaging).

<sup>185</sup> *See United States v. Karo*, 468 U.S. 705, 713 (1984) (discussing the slippery slope that “if the presence of a beeper in the can constituted a seizure merely because of its occupation of space, it would follow that the presence of any object, regardless of its nature, would violate the Fourth Amendment”).

<sup>186</sup> *See id.* at 729 (Stevens, J., dissenting in part) (focusing on the property owner’s right to exclude others from use of the property and considering the attachment of a GPS device as an “invasion” of those possessory rights).

<sup>187</sup> *Garcia*, 474 F.3d at 996.

<sup>188</sup> *See supra* Part III.C.1.i (discussing how a possessory interest is required for the Fourth Amendment to apply to both tangible and intangible items).

<sup>189</sup> *See Ohm, supra* note 16, at 2 (mentioning that the *Olmstead* theory protected “physical property rights” and only tangible items).

<sup>190</sup> Lawrence Lessig, *Free Culture: How Big Media uses Technology and the Law to Lock Down Culture and Control Creativity*, 64 (2004) (asserting that in establishing patent and copyright laws as an exception to the concept that “ideas released into the world are free [and] [t]he law turns the intangible into property”).

<sup>191</sup> *See supra* Part III.C.1.i (arguing that wiretaps and other interceptions of communications can be seized).

<sup>192</sup> *See supra* Part III.C.2 (contending that dominion and control are required to implicate the Fourth Amendment against the government).

<sup>193</sup> *United States v. Va Lerie*, 424 F.3d 694, 702 (8th Cir. 2005).

<sup>194</sup> 63C AM. JUR. 2D *Property* § 27 (2010); *see Polytechnic Data Corp. v. Xerox Corp.*, 362 F. Supp. 1, 10 (N.D.Ill. 1973) (stating that the owner of property has “an absolute property right therein . . . includ[ing] a right to prohibit the attachment of devices thereto, or to retain authority to decide whether such attachment shall be made”).

<sup>195</sup> *United States v. Karo*, 468 U.S. 705, 729 (1984) (Stevens, J., dissenting in part).

<sup>196</sup> *See Va Lerie*, 424 F.3d at 703 (discussing that the required intent of conversion is the intent to affect the chattel, not necessarily intentional wrongdoing).

<sup>197</sup> *See Karo*, 468 U.S. at 712-13 (distinguishing trespass from seizure and comparing cases, such as *Katz v. United States*, 389 U.S. 347 (1967), where there was no trespass, but a Fourth Amendment violation, and *Oliver v. United States*, 466 U.S. 170 (1984), where there was trespass, but no Fourth Amendment violation).

<sup>198</sup> See *United States v. Moore*, 562 F.2d 106, 112 (1st Cir. 1977) (finding that the placement of a beeper in a vehicle is an intrusion because “while a driver has no claim to be free from observation while driving in public, he properly can expect not to be carrying around an uninvited device that continuously signals his presence”).

<sup>199</sup> Restatement (Second) on Torts § 222A (2010).

<sup>200</sup> *Id.*

<sup>201</sup> See *infra* Part V.C (arguing that an individual has a possessory interest in his vehicle, which is not eliminated by driving in public).

<sup>202</sup> *Karo*, 468 U.S. at 712-13 (finding that attachment of a beeper may be equivalent to a technical trespass for the space occupied by the beeper.).

<sup>203</sup> See Kenneth C. Laudon, *Markets and Privacy*, 39 COMM. OF THE ACM 92, 96 (Sept. 1996) (demonstrating that there is already “a lively market in the U.S. for personal information” which is a “valuable asset to private and governmental institutions.”); see generally Il-Horn Hann, Kai-Lung Hui, Tom S. Lee, I.P.L. Png, *The Value of Online Information Privacy: An Empirical Investigation*, AEI-BROOKINGS JOINT CENTER FOR REGULATORY STUDIES 11-14 (Oct. 2003), available at <http://ssrn.com/abstract=391993> (quantifying the value of privacy protection).

<sup>204</sup> Assuming, of course, that the GPS device cannot be removed or disabled.

<sup>205</sup> *United States v. Place*, 462 U.S. 696, 705 (1983).

<sup>206</sup> *United States v. Jacobsen*, 466 U.S. 109, 111 (1984) (discussing that the government’s dominion and control over the package did not constitute an unreasonable seizure of the item).

<sup>207</sup> See *id.* at 125 n. 27 (finding that while permanent, the law enforcement’s actions did not effectuate a seizure because the officers seized only a “trace amount”).

<sup>208</sup> See *New York v. Weaver*, 909 N.E. 2d 1195, 1196 (N.Y. 2009) (referencing that the record was devoid of a reason the “defendant was placed under electronic surveillance”).

<sup>209</sup> *Id.*

<sup>210</sup> See *Jacobsen*, 466 U.S. at 125 (illustrating that intrusion was low “because only a trace amount of material was involved, the loss of which appears to have gone unnoticed by respondents”); see *Terry v. Ohio*, 392 U.S. 1, 30 (1968) (showing how “[t]he policeman carefully restricted his search to what was appropriate to the discovery of the particular items which he sought”).

<sup>211</sup> U.S. CONST. AMEND. IV.

<sup>212</sup> See *Katz v. United States*, 389 U.S. 347, 357 (1967) (observing that “searches conducted outside the judicial process, without prior approval by judge or magistrate, are per se unreasonable under the Fourth Amendment”).

<sup>213</sup> *Johnson v. United States*, 333 U.S. 10, 13-14 (1948).

<sup>214</sup> *Id.* at 14.

<sup>215</sup> *Katz*, 389 U.S. at 357.

<sup>216</sup> See *Warden v. Hayden*, 387 U.S. 294, 298, 310 (1967) (holding that hot pursuit is justified by the exigent circumstances of the case, which “made that course imperative”).

<sup>217</sup> See *Terry v. Ohio*, 392 U.S. 1, 27 (1968). “[T]here must be a narrowly drawn authority to permit a reasonable search for weapons for the protection of the police officer, where he has reason to believe that he is dealing with an armed and dangerous individual, regardless of whether he has probable cause to arrest the individual for a crime.” *Id.*

<sup>218</sup> See *Schneckloth v. Bustamonte*, 412 U.S. 218, 226 (1973) (defining the state’s burden for establishing consent to search uses the totality of the circumstances to determine if the state overcame the suspect’s voluntariness).

<sup>219</sup> See *Chimel v. California*, 395 U.S. 752, 764 (1969) (holding that following arrest, an officer may search the arrestee’s person and any areas within his immediate control for weapons or destructible evidence).

<sup>220</sup> See *Carroll v. United States*, 267 U.S. 132, 154 (1925) (finding the warrantless stop and search of cars permissible where the police have “probable cause for believing that [the] vehicles are carrying contraband or illegal merchandise”).

<sup>221</sup> See *Coolidge v. New Hampshire*, 403 U.S. 443, 465 (1971) (noting a problem with analyzing plain view is when the doctrine applies).

<sup>222</sup> See *Terry*, 392 U.S. at 27 (applying the test “whether a reasonably prudent man in the circumstances would be warranted in the belief that his safety or that of others was in danger”).

<sup>223</sup> See *Cupp v. Murphy*, 412 U.S. 291, 295 (1973) (mentioning the dangers of destroying evidence and hurting officers as justifiable reasons for a narrow warrantless search).

<sup>224</sup> JEREMY BENTHAM, *THE PANOPTICON WRITINGS* Preface (1787).

<sup>225</sup> *United States v. Garcia*, 474 F.3d 994, 998 (7th Cir. 2007).

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