

Swatting Spiders: An Analysis of Spider Activity on the Internet

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I.	INTRODUCTION	137
II.	CRAWLING FOR CASH.....	138
III.	THE WEB OF MONEY.....	139
	<i>A. Servers and Web Pages</i>	139
	<i>B. eBay v. Bidders Edge</i>	140
IV.	SWATTING SPIDERS.....	141
	<i>A. Copyright</i>	141
	1. Copy.....	141
	2. Display.....	141
	3. Preemption.....	142
	<i>B. Trademark</i>	143
	1. Likelihood of Confusion.....	143
	2. Dilution	146
	<i>C. Misappropriation</i>	147
	<i>D. Trespass</i>	148
V.	ROBOTS.TXT	152
VI.	CONCLUSION	153

I. INTRODUCTION

A “spider” is a program that searches, indexes, and categorizes Web pages.¹ The spider functions like a Web browser, except that it can visit millions of pages per second.² A spider program gathers information about each Web page and then indexes and categorizes any references to documents mentioned in the page.³ Since a spider can retrieve several pages on a server simultaneously (and pages linked to that server), it consumes server resources.⁴ Usually Web

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1. Free Online Dictionary of Computing, at <http://foldoc.doc.ic.ac.uk/foldoc/foldoc.cgi?query=spider> (last visited Oct. 10, 2000).

2. *See id.*

3. *See id.*

4. *See id.*

page owners welcome spider traffic as a free way to promote their Web site; however, this is not always the case.⁵ This Comment will identify potential legal remedies for unauthorized spider use and propose a nonlitigious solution.

The use of a spider to index Web pages differs from a DoS (Denial of Service) attack in degree and purpose.⁶ A spider operates by requesting pages from a server then adding them to its index.⁷ Each request diminishes the capacity of the server, crowding out other users.⁸ In comparison, a DoS attack occurs when Web hackers use a program that sends millions of “packets” of information to a server.⁹ If used correctly, the DoS attack will exhaust all the processing power of a server, causing a system failure.¹⁰

II. CRAWLING FOR CASH

Web companies use spiders as part of their business strategy. Some sites do not sell the spider, but rather sell advertising. For example, Altavista.com makes money by selling advertising space and entering profit sharing agreements with merchants.¹¹ Advertising revenue is dependent on the site traffic, and thus these search engines are dependent on the creation of searchable Web sites for their advertising revenue. The search engine will fail to be successful absent the effort of others to create searchable Web sites.

Other sites, such as google.com,¹² generate revenue by licensing their technology to other companies.¹³ Therefore, the google.com model does not depend solely on Web traffic to its site. But once google.com licenses its technology to a search engine or Web portal it runs up against the same legal barriers as Altavista.com. However, if they license their spider for purely Intranet or local indexing then the problem of unjust enrichment does not arise. Other sites provide specialized searches, catering to a more limited audience.¹⁴ For example, one Web site, Bidder’s Edge, collects information about

5. *See id.*

6. *See id.*

7. *See id.*

8. *Id.*

9. *See* Andrew Brandt, *Hackers Hammer the Web*, PCWORLD.COM, <http://www.pcworld.com/news/article.asp?aid=15186> (last visited Oct. 10, 2000).

10. *See id.*

11. *See* AltaVista Co. Prospectus, at 1, <http://www.sec.gov/Archives/edgar/data/1100862/0001012870-99-004680.txt> (last visited Feb. 17, 2001).

12. *See* <http://www.google.com/corporate/index.html> (last visited Feb. 17, 2001).

13. *See id.*

14. *See id.*

auctions from various auction sites, minimizing the search cost to the customer.¹⁵ Bidder's Edge and similar sites make money from providing advertising space similar to the Altavista.com model.

III. THE WEB OF MONEY

A. Servers and Web Pages

Web page designers distribute information via Web pages for two reasons. Individuals and business entities either seek to profit from the Internet financially or are interested in distributing information for information's sake. For example, Web sites are used to convey information regarding family, friends, governments, and community organizations. As the number of entities in each category grows, the need for indexing becomes even more essential.

Creating a Web page is costly. Even the most basic design requires resources. At the very least, the opportunity cost of the designer's time must be considered. However, the cost of each Web page is actually much greater than the designer's cost. Each page must be stored on a server, and that server must pay a cost to connect to the Internet.

A Web server has a limited capacity. Once built, only a certain number of Web pages can be hosted, and only a certain amount of Web traffic can be handled by the server. If the operator of the server wants to accommodate more Internet traffic and Web pages, the operator will have to increase capacity by purchasing faster machines with more memory, thus assuming more cost.

Profit oriented businesses have dedicated servers, which align the interests of the server and the Web page owner. Most Web page owners, however, do not own the server that hosts their page, resulting in a discrepancy between the server owner's interest to limit traffic and the Web page owner's interest to maximize traffic. Web page owners make money by selling items or advertisements on their pages. An increase in traffic for one page is a decrease in the left-over capacity for the other pages on that server. The server owner will not appreciate one page generating traffic that results in the exclusion of others because his profits are made by selling server space to many users. Additionally, other Web page owners may become upset at the server's diminishing capacity and seek service elsewhere.

15. See <http://www.biddersedge.com/background.jsp> (last visited Feb. 17, 2001).

B. eBay v. Bidders Edge

Consider a Web server's limited capacity in light of *eBay v. Bidder's Edge*.¹⁶ eBay is an online auction house, permitting sellers to auction wares to buyers.¹⁷ Rules and sanctions are established for those participants of the site.¹⁸ eBay provides the Web server and Web pages that house each auction.¹⁹ In return, eBay receives a commission from each sale and makes money on advertisements.²⁰ Bidder's Edge operates a spider that searches and indexes auction sites such as eBay.²¹ Bidder's Edge gathers prices and descriptions from several online auction houses, then provides that information to users of its site.²² Buyers use Bidder's Edge to minimize their search costs, as consumers can see auctions at eBay vis-à-vis auctions at other sites.²³

The diverging interests of Web page owners and server owners are apparent in this case. The sellers on eBay want as many buyers as possible to be exposed to the auction. The sellers have no reason to care that a spider has crawled over their Web page. But eBay has an interest in restricting traffic so as to save that capacity for actual people who visit eBay, since it does not get credit for advertising exposure when a spider crawls over a page. Furthermore, as noted above, server capacity is a commodity.²⁴ The more spiders that crawl on eBay's site, the more often eBay must pay for increased capacity.

Whether the net effect of the increased traffic is positive for eBay's bottom line is an empirical matter. For the remainder of this Comment, I will assume the net effect is negative. But it should be noted that it is possible that the increased traffic and exposure could yield positive effect on the bottom line. For example, advertising sites will profit from the spider traffic to their Web site.

The consuming public benefits from Bidder's Edge service and by spiders in general, because they reduce the online search costs for consumers. Desired pieces of information are the proverbial needles in the increasingly vast Internet haystack. The use of spiders to organize and index Web pages greatly benefits both the public at

16. 100 F. Supp. 2d 1058 (N.D. Cal. 2000).

17. *See id.*

18. *See* eBay User Agreement, at <http://pages.ebay.com/help/community/png-user.html> (last visited Oct. 10, 2000).

19. *See id.*

20. *See eBay*, 100 F. Supp. 2d at 1060.

21. *See id.*

22. *See id.*

23. *See id.* at 1062.

24. *See id.*

large, and the consuming public. Serious research projects, including this one, are easier to conduct when vast volumes of information are indexed.

IV. SWATTING SPIDERS

A. Copyright

One cause of action that could be used to combat unwanted crawling is copyright infringement. For a Web page owner to bring a copyright infringement case, the crawled-upon page must actually be copyrighted. Assuming the program and the text are copyrighted, the page owner must show the spider proprietor infringed on the rights of the owner.

1. Copy

The act of crawling cannot be an infringement of a copyright holder's exclusive right to copy since crawling is equivalent to reading.²⁵ However, the act of indexing is more akin to making "material objects . . . in which a work is fixed . . . [that] can be perceived . . . with the aid of a machine."²⁶ Are the electrons that bounce around inside a computer fixed objects? Several courts have ruled that the mere act of loading a copyrighted program in to temporary memory is infringement.²⁷ Congress has since created a specific exception to the right of copyright holders to exempt the loading of a program into RAM.²⁸ But indexing a copyrighted page is not covered by this exception since the index is not an "essential step in the utilization of the computer program" nor a backup copy.²⁹

2. Display

Search engines that use spiders also run the risk of displaying copyrighted material. Google.com and Altavista.com provide searchers with a preview of each Web page that resulted from their search.³⁰ Congress gives copyright holders the exclusive right to "show a copy of

25. See 17 U.S.C.A. § 106 (1995).

26. *Id.* § 101.

27. See generally *MAI Sys. Corp. v. Peak Computer, Inc.*, 991 F.2d 511, 518 (9th Cir. 1993) (holding that when a computer loads a protectable program into RAM it has made a copy since it resides in memory for longer than a "transitory duration").

28. See 17 U.S.C.A. § 117.

29. See *id.*

30. See <http://www.google.com/corporate/index.html> (last visited Feb. 17, 2001); see also <http://www.sec.gov.archives/edgar/data/1100862/0001012870-99-004680.txt> (last visited Feb. 17, 2001).

[their work] . . . by means of a film, slide, television image, or any other device.”³¹ The display of protected work on a Web page falls within the broad language of the statute.³²

Despite the likelihood of success on the merits for a copyright holder, the copyright infringement cause of action is unlikely to be a widely used remedy against spiders for two reasons. First, a well-designed spider can search for the copyright symbol, (©), and exclude all such pages from its index. Another method is through the use of the “Standard for Robot Exclusion,” which will be discussed in greater detail below.³³ Second, most Web pages are not copyrighted, so this action is useless to eBay and others who do not claim copyright protection.

3. Preemption

Though eBay did not allege a claim of copyright infringement, Bidder’s Edge made a claim of copyright preemption. Bidder’s Edge argued before the district court that eBay’s other state law claims, trespass and misappropriation, are preempted by federal copyright law,³⁴ since they fell within the subject matter of the Copyright Act and protect equivalent rights.³⁵ Several courts have ruled that a misappropriation claim is preempted by federal copyright law except in the narrow instance of “hot news.”³⁶ Whether the facts of *eBay v. Bidder’s Edge* fit this exception is discussed below.³⁷ The right protected by trespass seems much different than the rights protected by copyright and is thus not preempted.³⁸ Web page proprietors who wish to rid themselves of spiders should be careful not to plead themselves out of court. If a pleading looks too much like an attempt to keep spiders from copying and displaying information, then federal copyright law will most likely preempt the claim, and they will be forced to argue copyright claims.

31. 17 U.S.C.A. §§ 101, 106.

32. *See id.*

33. *See generally* Free Online Dictionary of Computing, *supra* note 1, at 41.

34. *See eBay v. Bidder’s Edge*, 100 F. Supp. 2d 1058, 1072 (N.D. Cal. 2000).

35. 17 U.S.C.A. § 301 (1995).

36. *See generally* Nat’l Basketball Ass’n v. Motorola, Inc., 105 F.3d 841 (2d Cir. 1997) (holding professional basketball game scores did not qualify for protection as “hot news”); *see also* Fred Wehrenberg Circuit of Theatres v. Moviefone, Inc., 73 F. Supp. 2d 1044 (E.D. Mo. 1999) (holding movie times do not qualify as “hot news”).

37. *See eBay*, 100 F. Supp. 2d at 1063.

38. *See Ticketmaster Corp. v. Tickets.com, Inc.*, 54 U.S.P.Q.2d 1344, 1345-46 (C.D. Cal. 2000) (holding that trespass cause of action was preempted by copyright law in the context of Web page linking).

B. Trademark

A cause of action for trademark infringement will not apply to all Web pages; however, trademark law is implicated in the case of eBay because Bidder's Edge identified auctions as originating from eBay and because a link to eBay's auctions from the Bidder's Edge site is posted.³⁹ eBay's distinctive mark is its name, 'eBay.'⁴⁰ To prevail on claims of trademark infringement, eBay must prove that it has a valid trademark and that consumers are likely to be confused by its unauthorized use.⁴¹ A prima facie claim of infringement can also be established based on trademark dilution.⁴² Neither theory is a slam-dunk for eBay, and the remedy does not directly eliminate the true economic problem posed by spider use. Nevertheless, this cause of action can be used for bargaining, given the enormous costs associated with litigation.⁴³

1. Likelihood of Confusion

The Lanham Act forbids the use of "any word" that "is likely to cause confusion . . . as to the affiliation, connection, or association of such person," or "misrepresents the nature, characteristics, qualities, or geographic origin of . . . another person's goods."⁴⁴ When Bidder's Edge's users make a purchase, they are actually purchasing a good from one of the vendors selling items on an auction site. This is not a case in which a consumer could be confused as to the source of the good because eBay does not actually sell anything. But eBay could argue that the Bidder's Edge practice of informing users which auction house an item is listed on has the effect of leading consumers to believe that eBay is affiliated with Bidder's Edge.

But do consumers believe that search engines are affiliated with the pages they search? When a consumer uses a search engine at walmart.com, the consumer reasonably believes that the results will

39. See *eBay*, 100 F. Supp. 2d at 1063.

40. eBay's application for a trademark was filed in April 2000 and is still pending. See U.S. Trademark No. 76-022, 899 (filed Apr. 2000).

41. See *Nike, Inc. v. Just Did It Enter.*, 6 F.3d 1225, 1227 (7th Cir. 1993) (quoting *A.J. Canfield Co. v. Vess Beverages, Inc.*, 796 F.2d 903, 906 (7th Cir. 1986) (propositioning that consumer confusion and validity of trademark are elements of any trademark infringement action)).

42. See *eBay Is Subject of Antitrust Probe, Congress Considers Underlying Issue*, E-COMMERCE WKLY., Feb. 9 2000, <http://www.law.com/cgi-bin/gx.cgi/AppLogic+FTContentServer?pagename=law/View&c=Article&cid=A15662-000Feb8&live=true&cst=1&pc=0&pa=0> (last visited Feb. 17, 2001).

43. See *id.*

44. 15 U.S.C.A. § 1125(a)(1)(A)-(B) (1997).

be Wal-Mart products. The same cannot be said of consumers using the google.com search engine.⁴⁵ But the resolution of the Bidder's Edge case is not as obvious as the preceding examples. Query, would a reasonable consumer in the market for auctioned goods be confused as to affiliation by seeing a mark that disclosed the source of the auctioned item?⁴⁶ In such close cases, courts weigh a variety of factors to determine the likelihood of confusion.⁴⁷

The eight most widely used factors to determining likelihood of confusion are: (1) strength of the mark, (2) product similarity, (3) differences between the marks, (4) actual consumer confusion, (5) use of concurrent trade channels, (6) degree of care to be expected of a reasonable consumer in this area, (7) the intent of the defendant, and (8) likelihood of expansion of the product lines.⁴⁸ Viewing these factors in their totality, eBay is unlikely to prevail.

The most favorable factors for eBay are the strength of its mark, the differences between the marks, and the use of concurrent trade channels. It will be difficult for Bidder's Edge to argue that eBay's mark is not a strong mark, as the mark is neither generic nor descriptive. More distinctive marks deserve greater protection.⁴⁹ Bidder's Edge is using eBay's exact mark but without the fancy lettering. However, given the distinctiveness of eBay's mark, the lack of stylized lettering does not eliminate all of the similarity between the marks. Furthermore, the marketing and trade channels used by the two parties are likely to overlap. Convergent trade channels increase the likelihood of consumer confusion.⁵⁰ eBay and Bidder's Edge seek the same group of consumers, making it unlikely for them to advertise in the same mediums. While there are some strong reasons to grant trademark protection to eBay, the gravity of the other factors outweigh their significance.

The factors weighing against eBay are the lack of evidence of actual confusion, the degree of care of the reasonable online auction bidder, and the benign intent of Bidder's Edge. To show actual confusion, it is possible that eBay can track down a consumer who

45. See <http://www.google.com/corporate/index.html> (last visited Feb. 17, 2001).

46. See, e.g., *Medic Alert Found, Inc. v. Corel Corp.*, 43 F. Supp. 2d 933, 938 (N.D. Ill. 1999) (holding that inquiry into consumer confusion should focus on consumers in the market for software).

47. See *AMF, Inc. v. Sleekcraft Boats*, 599 F.2d 341, 348 (9th Cir. 1979) (citing six factors relevant in determining whether confusion is likely).

48. See *id.* (citing *Sleeper Lounge Co. v. Bell Mfg. Co.*, 253 F.2d 720, 722 (CA9 1958); RESTATEMENT OF TORTS § 731 (1938)).

49. See *id.* at 349.

50. See *id.* at 353.

went to the URL www.biddersedge.com and thought he was visiting a site approved by eBay. However, this is a weak argument because there is little evidence of widespread confusion. Additionally, eBay cannot show that Bidder's Edge had any intent to trade on eBay's mark. Bidder's Edge uses the mark to alert consumers that they will be taken to eBay's site. What is the alternative? If Bidder's Edge does not disclose who is running each auction, there would be more source confusion, and the consumer would be further disadvantaged.

Another factor weighing against eBay is the degree of care of the ordinary purchaser, which is very high for online auction bidders. When the expertise of the consumer is great, the likelihood of confusion is minimized.⁵¹ Furthermore, a typical user is indifferent to the various online auction houses. eBay is not the seller of goods; it does not even guarantee the trustworthiness of its vendors. This is probably why eBay does not want to be listed next to other auction houses. Since brand name means little when choosing an online auction house and price is the primary consideration, eBay could lose business to upstarts who do not charge vendors the same amount as eBay.

When the goods of two merchants are related, consumers are more likely to be confused by the use of a mark and mistakenly assume an association between the producers.⁵² Bidder's Edge can argue that the service it provides is much different than the service eBay provides. eBay provides a marketplace for vendors to auction wares to the public; Bidder's Edge gives users the ability to search multiple auction houses at once, thereby finding the goods they want faster (and presumably cheaper). eBay could argue that the two companies seek to attract the same segment of the consuming public by offering them the ability to search for goods being offered for sale.

However, as a whole, most factors weigh against eBay. If Bidder's Edge stopped using eBay's mark to identify eBay's service, then the problem of source confusion would arise. Given this, it is doubtful that any court would force Bidder's Edge into such a paradoxical situation. A trademark claim would likely fail even for cases outside the eBay hypothetical fact situation. After a spider searches a page it must display the results to the user in some form. Allowing the spider to display an otherwise valid trademark protects the very interests that the Lanham Act seeks to protect.

51. See *id.* (citing *Am. Drill Bushing Co. v. Rockwell Mfg. Co.*, 342 F.2d 1019, 1022 (C.C.P.A. 1965)).

52. See *id.* at 350.

2. Dilution

The theory behind trademark dilution is too complex to examine here, but a cursory look is appropriate. The basic idea is to prevent the blurring of a famous mark in the eyes of consumers.⁵³ A famous mark has a distinctive quality that is a “powerful selling tool” and thus should be protected.⁵⁴ A dilution claim seeks to prevent junior uses (such as Bidder’s Edge’s use) that would diminish the selling power of the famous mark.⁵⁵ It is upon this backdrop that eBay, and others similarly situated, must base their claims.

A party is entitled to an injunction for a violation of the Federal Trademark Dilution Act if they can prove: (1) the senior mark is famous, (2) it is “distinctive,” (3) the junior use must be a commercial use in commerce, (4) it must begin after the senior mark has become famous, and (5) it causes dilution of the distinctive quality of the senior mark.⁵⁶ Even if eBay can satisfy the elements, Bidder’s Edge could be covered by the “fair use” exception.⁵⁷ Bidder’s Edge would argue that it is using the famous mark to identify the competing goods of the owner of the famous mark, and therefore it fits into the exception. Bidder’s Edge seems to fall within the literal meaning of the statute, but the legislative history of the statute suggests that Congress intended the exception to apply only to those cases in which the First Amendment is implicated.⁵⁸

Alternatively, Bidder’s Edge could argue that their use of the mark is a “nontrademark” use.⁵⁹ Since a trademark is not an absolute right, some uses will not implicate trademark law.⁶⁰ In *The New Kids on the Block v. News American Publishing, Inc.*, the Ninth Circuit held that the use of trademarks to “refer to a particular product for purposes of comparison, criticism, point of reference or any other such purpose” is a nontrademark use.⁶¹ The act of returning a result gathered by a spider to a user that includes a trademarked word or phrase cannot be avoided. How else is the result to be presented?

53. See *Nabisco, Inc. v. PF Brands, Inc.*, 191 F.3d 208, 217 (2d Cir. 1999) (quoting H.R. Rep. 104-374, 104th Cong., at 3 (1995)).

54. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 25, cmt. c (1995).

55. See *Sally Gee, Inc. v. Myra Hogan, Inc.*, 699 F.2d 621, 624-25 (2d Cir. 1983).

56. See *Nabisco*, 191 F.3d at 215.

57. See Lanham Act, 15 U.S.C. § 1125(c)(4)(A) (1995).

58. See H.R. Rep. 104-374, 104th Cong., 1st Sess., at 4 (1995) (declaring that the Lanham Act was not intended to threaten or prohibit “noncommercial” expression nor alter case law defining “commercial speech”).

59. See *New Kids on the Block v. News Am. Publ’g. Inc.*, 971 F.2d 302, 307 (9th Cir. 1992) (citing case examples involving trademark use to which infringement laws do not apply).

60. See *id.* at 306.

61. *Id.* at 308.

Further, telling the user where a product originates does not implicate trademark law.

Both the likelihood of confusion and trademark dilution theories miss the overarching problem posed by the emergence of spiders on the Internet; spiders consume server resources. The trademark cause of action indirectly eliminates troublesome spiders by increasing the legal fees associated with operating such a site, but a different cause of action must be plead if the legal solution is to be tailored to the economic problem.

C. *Misappropriation*

Like other intellectual property causes of action, misappropriation will not apply to every instance of spider use.⁶² Today, misappropriation is entirely a state law cause of action, largely preempted by federal copyright law.⁶³ The type of claim that has survived preemption involves “hot news.”⁶⁴

The “hot news” claim is only available to cases where:

[1] a plaintiff generates or gathers information at a cost; [2] the information is time-sensitive; [3] a defendant’s use of the information constitutes free riding on the plaintiff’s efforts; [4] the defendant is in direct competition with a product or service offered by the plaintiffs; and [5] the ability of other parties to free-ride on the efforts of the plaintiff or others would so reduce the incentive to produce the product or service that its existence . . . would be substantially threatened.⁶⁵

eBay certainly generates time-sensitive information at a cost upon which Bidder’s Edge free-rides. Bidder’s Edge is arguably in competition with eBay, but the competition is by no means “direct,” as Bidder’s Edge does not offer auction services to either buyers or sellers. Lastly, eBay’s incentive to offer vendors a place to sell wares online is not lessened by Bidder’s Edge’s action. Again, if a user visits Bidder’s Edge and chooses to purchase from an eBay vendor, then eBay benefits.

A misappropriation cause of action would also miss the point. The typical spider will not return time sensitive information that lessens incentives to provide that information. Proprietary spider use benefits Web page owners to the detriment of Web server owners. The problem is forcing the spider proprietor to compensate the Web

62. See generally *INS v. Associated Press*, 248 U.S. 215 (1918).

63. See *Nat’l Basketball Ass’n v. Motorola, Inc.*, 105 F.3d 841, 845 (2d Cir. 1997).

64. See *id.* (citing H.R. No. 94-1476, at 132 (1976) (indicating legislative intent does not preempt state law)).

65. See *id.*

server owner for lost capacity. Misappropriation does not accomplish this goal.

D. Trespass

The trespass cause of action is a product of state law, but the Restatement (Second) of Torts is a proxy for most states. With regard to Web spiders, the appropriate cause of action arising from trespass is the claim of trespass to chattels. A chattel is simply personal property, and computer servers fall within this category.⁶⁶ The trespass to chattels cause of action is more promising than the previous actions because it addresses the actual economic disparities and cost shifting created by the use of spiders.

The Restatement (Second) of Torts defines a trespass to a chattel as “dispossessing another of a chattel, or using or intermeddling with a chattel in the possession of another.”⁶⁷ Comment (e) to this section defines intermeddling as “intentionally bringing about a physical contact with the chattel.”⁶⁸ Some courts have adopted the argument that unwanted electrons banging away at system capacity is sufficiently physical to rise to the level of “intermeddling.”⁶⁹ Even if the proprietary use of a spider constitutes physical contact with eBay’s server, liability will only lie if either: “(a) he dispossess[es] the other of the chattel, or (b) the chattel is impaired as to its condition, quality, or value, or (c) the possessor is deprived of the use of the chattel for a substantial time, or (d) bodily harm is caused to the possessor.”⁷⁰

The first case to recognize that “physical contact” needs to expand to meet modern notions of the physical world is *Thrifty-Tel, Inc. v. Myron Bezenek*.⁷¹ In *Thrifty-Tel*, two minor children attempted to learn special access numbers that would allow them to make free phone calls (a process called “phreaking”⁷² in hacker parlance).⁷³ In

66. See BLACK’S LAW DICTIONARY (7th ed. 1999) (defining “chattel” as moveable property).

67. RESTATEMENT (SECOND) OF TORTS § 217 (1977).

68. *Id.*

69. See, e.g., *Thrifty-Tel, Inc. v. Myron Bezenek*, 54 Cal. Rptr. 2d 468 (1996) (holding that hundreds of thousands of phone calls from one home for the purpose of cracking secret phone codes overburdened phone carrier’s system in a way that constituted a trespass to chattels); *CompuServe, Inc. v. Cyber Promotions, Inc.*, 962 F. Supp. 1015, 1016 (S.D. Ohio 1997) (holding unsolicited e-mail to advertising constitutes a trespass to the chattel property of an Internet service provider). But see Dan Burk, *The Trouble with Trespass*, 4 J. SMALL & EMERGING BUS. L. 27 (2000).

70. RESTATEMENT (SECOND) OF TORTS § 218.

71. See *Thrifty-Tel*, 54 Cal. Rptr. 2d at 468.

72. Free Online Dictionary of Computing, *supra* note 1, at 41.

most phone networks there are 'keys' that allow each individual phone number access to the computer switchboard.⁷⁴ If a phreaker can determine the key then free long distance phone calls can be made.⁷⁵ The method they used (called a "brute force attack")⁷⁶ involves calling every possible access number to determine which number was the correct key.⁷⁷ The youngsters employed a software program to automatically dial for them.⁷⁸ Thrifty-Tel was a small phone service provider at the time, so the addition of tens of thousands of calls overloaded their system and prevented most of its customers from making or receiving phone calls.⁷⁹

Thrifty-Tel argued that a trespass to their chattels occurred because the defendants intentionally interfered with the possession of Thrifty-Tel's personal property, their phone lines.⁸⁰ The *Thrifty-Tel* court reasoned that dust, smoke, and sound can give rise to a trespass to real property, therefore electronic signals (charged electrons) can also give rise to a trespass to chattels.⁸¹

At least one commentator has objected to this logic leap on grounds that the court merges two distinct causes of action: trespass of chattels and trespass of land.⁸² It is certainly true that, at common law, trespass to land was far more serious than trespass to chattels, but the concepts are not mutually exclusive. Real property is still important in the modern world, but chattels play a much larger role in modern commercial and consumer cultures than they did even a hundred years ago. Automobiles, computers, refrigerators, televisions, and domain names are all chattels, but nevertheless are very important economic tools. Commentators should decline the invitation to create a rigid barrier between the two causes of action given the ever-increasing importance and value of chattel property.

Regardless of whether trespass to land principles should be applied to trespass to chattel cases, electronic signals are physical. A simple illustration reveals the obviousness of the concept. Suppose a farmer owns a cow, and I zap it with 100,000 volts of electricity. Are the charged particles acting on the cow physical? Absolutely. Why is

73. See *Thrifty-Tel*, 54 Cal. Rptr. 2d at 471.

74. See *id.*

75. See *id.*

76. Free Online Dictionary of Computing, *supra* note 1, at 41.

77. See *Thrifty-Tel*, 54 Cal. Rptr. 2d at 471.

78. See *id.*

79. See *id.*

80. See *id.* at 473.

81. See *id.* at 473 n.6.

82. See Burk, *supra* note 69, at 49-50.

the answer of physicality any different when the voltage is one volt? Of course physicality does not resolve the issue of liability, since the physical contact must rise to a certain level before liability will be imposed.⁸³

Opponents of *Thrifty-Tel* argue that when the law of trespass extends into cyberspace, it sweeps too broadly.⁸⁴ The problem they suggest with the “impinging electrons” cause of action is that every networked computer would be guilty of this trespass.⁸⁵ But this is an exaggeration. The action will only lie if the “chattel is impaired as to its condition, quality or value” or “the possessor is deprived of the use of the chattel for a substantial time.”⁸⁶ The comments to this Restatement section make it clear that the harm should relate to the physical condition of the chattel, and that any deprivation should be more than “momentary” or “theoretical.”⁸⁷ Does a spider affect the physical condition or deprive eBay of its chattel for more than a moment?

A computer, just like a blender, receives electronic impulses to which it reacts. The naysayers criticize the cyber trespass to chattel claim for punishing the exact behavior that computers are designed to handle. By this reasoning, bulk e-mails do not harm an e-mail system since e-mail systems are designed to send and receive e-mail.⁸⁸ Spiders, like “spam,” use server capacity. The critics are quick to point out that every user of eBay or CompuServe expends server capacity.⁸⁹ While technically true, the argument is overstated. Once a user surfs to eBay.com they are interacting with chattels that belong to eBay. eBay should be allowed to decide who gets access to its chattel. eBay can open its server to the world while reserving the right to deny access to whomever they want. eBay stores confidential information about its vendors and buyers, but surely the critics do not believe eBay has consented the taking of this material simply by connecting to the Internet.

The critics seem to think that once a Web page is created the owner has consented to any and all traffic.⁹⁰ They are right, in part. A reasonable Web-surfer would assume that they have eBay’s permission to view its Web page. But the critics are wrong to suggest

83. RESTATEMENT (SECOND) OF TORTS § 218 (1977).

84. See Burk, *supra* note 69, at 49-50.

85. See *id.*

86. RESTATEMENT (SECOND) OF TORTS § 218.

87. *Id.* cmts. e, h, i.

88. See Burk, *supra* note 69, at 49-50.

89. See *id.* at 44.

90. See *id.* at 45.

that eBay should not be allowed to exclude users from its service. A hotdog vendor that sets up on the public sidewalk has not consented to serve hot dogs to every person who asks for one. Nor have they consented to having their ability to serve hotdogs impaired. The hotdog vendor may discriminate among customers. Of course, the United States Constitution and various laws prohibit the vendor from discriminating for certain reasons (such as race, gender, etc.), but beyond that the vendor may decide to sell only to people wearing shirts with polka-dots on them. eBay has plugged its hotdog stand into the “digital common,” but it has not given away its right to exclude others from its personal property. eBay has not consented to impairment.

Recall that a trespass to chattel action will lie when intentional physical contact impairs the “condition, quality or value” of a chattel.⁹¹ As discussed above, the contact with eBay’s computer system is physical (there is no question that it is intentional). Some commentators think that the proper measure of value (for impairment purposes) is the difference between the value of the e-mail system before processing mass e-mail, and the value after processing.⁹² However, the value of eBay and CompuServe’s servers are in large part a function of what they do with them. As humans act upon chattels they become more or less valuable. Silicon becomes semiconductors, which become electronic equipment, which become computers, which get put to various uses. A computer in the hands of a college student will not create value the way a computer in the hands of eBay will. If making money on the Internet was as simple as purchasing a computer and connecting it to the “digital commons” we would all be millionaires.

eBay’s system is also diminished in quality by the spider. eBay’s server has the same qualities before a spider crawls on it as it does after the crawling, just as an old 486 and a Pentium III have the same basic computer qualities, but the latter makes surfing the Web much easier. If a Web user surfs to eBay and gets Pentium performance they are going to be impressed, but if they get 486 performance then they will be disappointed. Critics again point out that the server in question is in the same physical condition before and after a spider crawl. But as discussed above, eBay doesn’t just provide server space. During the crawl the server is physically different. Before the crawl, it had a certain amount of processing power and disk space

91. See RESTATEMENT (SECOND) OF TORTS § 217, cmt. e, § 218.

92. See Burk, *supra* note 69, at 35.

(physical characteristics of hardware that are not easily visualized). But, during the crawl the processing power and disk space decrease, shortening the useful life of the machine after the crawl. Perhaps the useful life has only decreased by a minimal amount, but a change in the quality of the machine has taken place.

It is true that individual users do little damage by way of decreased server capacity, and in this fact is a valid critique of expanding the trespass to chattels cause of action into this new context. Absent a DoS attack or something similar, spider traffic is not likely to use all of eBay's server resources. But it is certainly true that if several spiders were operating simultaneously their aggregate effect would be greater than the sum of their parts. Nevertheless, a careful spider operator who does not want to draw attention to himself could slip by undetected and consume little by way of server capacity. eBay's damages in such a case would be fairly small. But even if Bidder's Edge consumed less than two percent of the capacity of eBay's server, such a value would not be de minimis.⁹³ The cause of action creates a problem of line drawing: what amount of impairment is too small to be actionable? However, courts have been drawing lines for hundreds of years, and they are competent to place appropriate restraints on the damages recoverable by victims of cyber trespass.

Nevertheless, the trespass cause of action most closely strikes at the harm and the imbalance created by spider use. Bidder's Edge has intermeddled with eBay's chattel and taken part of its value (the information stored on its disks) and appropriated it. The trespass to chattels cause of action punishes the intermeddler directly. The cause of action would be available for any server owner who receives intentional, debilitating traffic. Though the cause of action may theoretically be open to eBay to use against individual users, the value of its damages are likely to make that course of action economically infeasible.

V. ROBOTS.TXT

The specific problems of consent associated with spider usage are already being addressed in the industry. The law is having a difficult time catching up. The Standard for Robot Exclusion is a device that allows a server owner to express consent to a spider's use

93. Evidently eBay was able to detect the presence of Bidder's Edge's even though they consumed no more than 1.53% of eBay's resources. *See eBay v. Bidder's Edge*, 100 F. Supp. 2d 1058, 1064 (N.D. Cal. 2000).

of specific Web pages on the server.⁹⁴ A file titled “robots.txt” is placed in the root directory of a server. A spider can read the file and learn which pages are off limits, but only if so programmed. The spider proprietor who does not respect the Standard for Robot Exclusion will not program its spider to look in the file. This standard is a good solution to the spider paradox for two reasons.

First, it allows Web page owners and server owners to allocate costs and benefits between themselves. Prior to this exclusion, server owners either allowed all spiders to access all pages or it went to great lengths to exclude spiders from all pages. As noted at the outset, the interests of the Web page owner are not aligned with the server owner on this issue. With the standard for robot exclusion, a server owner can point to pages on the server that a spider is free to access. Web page owners and server owners can bargain amongst themselves to find the most efficient level of spider activity.

Second, it provides spider proprietors with an assurance that they will not have to face a lengthy court challenge. Uncertainty in any market creates inefficiencies. With the Standard for Robot Exclusion, servers and spider operators can know their respective rights prior to acting, thus minimizing risk and future litigation. The robots.txt file is good evidence of consent or lack of consent. A file that allows access to certain pages would be a bar to any trespass claim. Explicit denial of access is evidence of trespass. Of course if there is no robots.txt file in the root directory then we are back to square one. But if all parties involved agree, either voluntarily through industry united action or involuntarily through legislation, then the Standard for Robot Exclusion neatly solves the problems involved in proprietary spider use.

VI. CONCLUSION

Spiders are useful tools on the Internet. The Internet is a vast sea of information and any service that helps navigate that sea should be encouraged. But the costs imposed on server owners may be too great in some cases to justify free range Internet law. A balance must be struck between private and public interests. The law of real property is most analogous to the spider problem. But even without such, an analogy to the law of chattels can still strike the desired balance. Trespass to chattels is not designed for the Internet, but in the context of Internet spiders, it is a realistic method of pushing costs onto those

94. Free Online Dictionary of Computing, *supra* note 1, at query=standard+for+robot+exclusion.

who are responsible for them. The more traditional intellectual property causes of action such as trademark, copyright, and misappropriation, can indirectly accomplish this task, but they may not always be available. However, trespass has been around for centuries precisely because it adapts to the changing circumstances of the world. Digital trespass to chattels is the next step in the evolution of the trespass cause of action.