

Experimental Investigations on The Basis for Intellectual Property Rights

Abstract

Lay people routinely misunderstand or do not obey laws protecting intellectual property (IP), leading to a variety of (largely unsuccessful) efforts by policy-makers, IP owners, and researchers to change those beliefs and behaviors. The current work tests a new approach, inquiring whether lay people's views about IP protection can be modified by arguments concerning the basis for IP rights. Across two experiments, 572 adults (recruited through Amazon's Mechanical Turk) read one of six arguments about the basis for IP protection (incentives, natural rights, expressive rights, plagiarism, commons, or no argument). Participants then reported their general support for IP protection. Participants also reported their evaluations of two scenarios that involved infringement of IP rights, including cases in which there were mitigating experiences (e.g., the copier acknowledged the original source), and completed several demographic questions. Three primary findings emerged: (1) exposure to the importance of the public commons (and to a lesser extent exposure to the argument that plagiarism is the basis of IP protection) led participants to become *less* supportive of IP protection than the incentives, natural rights, expressive rights, and control conditions; (2) people believed that infringement was more acceptable if the infringer acknowledged the original creator of the work; and (3) older adults and women were especially likely to see infringement as problematic. These findings illustrate several ways in which lay beliefs are at odds with legal doctrine, and suggest that people's views about IP protection can be shaped in certain ways by learning the *basis* for intellectual property rights.

Keywords: intellectual property; copyright; patent; plagiarism; creative commons

Experimental Investigations on The Basis for Intellectual Property Rights

Many have noted the remarkable discrepancy between intellectual property laws and human behavior with regard to the use and sharing of protected works (e.g., Goodenough & Decker, 2009; Larsson, 2011). While intellectual property law generally prohibits, for example, downloading copyright-protected music and movies from the Internet, many, if not most, people routinely violate these laws and do not see an ethical problem with their actions (e.g., Rob & Waldfogel, 2006; Solomon & O'Brien, 1990; Svensson & Larsson, 2009; Taylor & Shim, 1993). Commentators have already noted a concern regarding the likely increase in illegal patent infringement with the rise of 3-D printers (Desai & Magliocca, 2013).

This discrepancy between legal mandate and human action has made many policy-makers, inventors and authors of creative works, as well as legal scholars, eager to change people's minds and actions concerning their treatment of creative works—but these attempts have largely failed. For example, there is little to no impact of enacting new intellectual property laws on people's behavior or perceptions of norms around intellectual property rights (e.g., Hoover, 2011; Svensson & Larsson, 2012). Similarly, Apigian (2012) found little evidence of a link between knowledge of copyright laws and copying behavior, and Al-Rafee and Rouibah (2010) found that telling people about anti-piracy laws, including about the punishments for violating those laws, did not reduce intentions to pirate digital material. Relatedly, in another experimental study, researchers found no impact of making people aware of the negative personal consequences (e.g., fines), negative consequences for creators (e.g., loss of income), or emphasizing the immorality of piracy, on intentions to illegally download or share music (d'Astous, Colbert, & Montpetit, 2005). Thus, it is not surprising that despite stringent copyright warnings at the start of movies and commercials boldly emphasizing the illegality of piracy—

interventions aimed at educating people about IP law—piracy rates remain high (e.g., Tyler, 1997; see also, Schwabach, 2008).

The current work takes a new approach to attempting to modify attitudes and behavior towards copying intellectual property works by investigating the impact of exposure to arguments about the *basis* for intellectual property law. Prior approaches have generally focused on trying to change attitudes and understanding concerning the products of intellectual property, such as a motion picture or a pharmaceutical. The strategy tested here moves the treatment effort upstream, examining whether attitudes can be modified by changing people's understanding of intellectual property law rather than (unsuccessfully) trying to change their attitudes towards intellectual property products. This approach potentially has promise because intellectual property is an area that people know little about (Mandel, Fast, & Olson, in press) and work in other domains suggests that providing *reasons* for various mandates can improve adherence to those mandates. For example, a meta-analysis found that when a judge simply asked a jury to disregard inadmissible evidence, that (inadmissible) information still impacted their decisions; however, when judges provided *an explanation* for their request to the jury to disregard inadmissible evidence, people were more effective in doing so (Stebly, Hosch, Culhane, & McWethy, 2006; though individual studies do not always show this pattern, e.g., Pickel, 1995).

Intellectual Property Law

Intellectual property law comprises several fields of law that regulate private property rights in creations of the human mind, including patent, copyright, trademark, and trade secret law. Patent law enables the inventor of a useful, new, and non-obvious invention to obtain a patent on the subject matter of the invention. A patent prevents anyone else from making, using, selling, offering for sale, or importing the patented product or process for a certain period of

time. Copyright law provides protection for a wide range of literary and artistic expression, including books, music, dance, dramas, computer programs, movies, and fine arts. A copyright gives its owner the exclusive rights to reproduce, prepare a derivative work, distribute, perform, or display the copyrighted work for a certain period of time, subject to certain limitations. Patent and copyright law both have objectives that relate to promoting, rewarding, or supporting creativity.

Trademark law provides protection for marks that identify the source of goods or services for a consumer. Trademark law is focused primarily on establishing more efficient markets by reducing potential consumer confusion as to the source of goods and services. Trade secret law provides protection for valuable business information that is not commonly known. Trade secret protection depends significantly on acceptable business practices. Neither trademark nor trade secret protection turn on the work at issue necessarily being creative or innovative. This can be seen clearly in intellectual property doctrine: both patent and copyright law provide a creativity threshold that a new work must meet in order to merit intellectual property protection, while neither trademark nor trade secret law have such a threshold.

The current research is concerned with lay attitudes towards intellectual property rights in the products of human creativity. For this reason, the studies focus on copyright and patent law. In particular, we are interested in whether informing individuals about the reasons that the law provides intellectual property protection for creative works affects individuals' attitudes towards intellectual property rights.

The Basis for IP Protection

Policy-makers, intellectual property experts, and legal scholars generally interpret the legal basis for intellectual property protection to be a desire to incentivize people to create new

inventions and creative works (see Besen & Raskind, 1991; Burk & Lemley, 2003; Cotropia & Gibson, 2010; Merges, Menell, & Lemley, 2010). For example, the main arguments underlying the proposal and passing of the *Sonny Bono Copyright Term Extension Act* in the copyright context and the Leahy-Smith America Invents Act in the patent context were incentive-based arguments (e.g., Rantanen, Petherbridge, & Kesan 2012; Gifford, 2000). In accord, the Supreme Court has routinely stated that intellectual property rights exist to incentivize creators and innovators to produce new works (*Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 1991; *Mayo Collaborative Servs. v. Prometheus Labs Inc.*, 2012; *Sony Corp. of Am. v. Universal City Studios, Inc.*, 1984).

Other legal scholars debate the basis of IP law to some extent. For example, some endorse a natural rights argument, reasoning that individuals are morally entitled to control the copying and distribution of inventions or artistic creations produced as a result of the creator's own labor and effort (Gordon, 1993; Merges, 2011). Others support an expressive rights basis, arguing that protecting the products of human creativity can enhance the freedom to express oneself and promote cultural development (Fromer, 2012; Hughes, 1988; Radin, 1987). Though most analyses and policy perspectives focus on an incentives basis for IP law, arguments are also made for natural rights and for expressive rights rationales.

Lay Knowledge of Basis of IP Protection

Mandel, Fast, and Olson (in press) found that, despite the expert perspectives on intellectual property law discussed above, lay people endorsed *plagiarism concerns* as the basis for IP protection more often than incentives, natural, rights, or expressive rights. That is, people believe that IP should be protected to prevent people from claiming the work of others as their own, an argument that has never been recognized by legal scholars. Interestingly, concerns with

plagiarism are not only a concern raised by adults in studies on intellectual property protection, but appear early in human development. Studies with young children have suggested that as early as 5-6 years of age, children dislike people who copy others' work (Olson & Shaw, 2011). This pattern is observed not only in countries like the U.S. who have a long history of strong IP protection, but also in countries with shorter histories of IP protection like Mexico and China (Yang, Shaw, Garduno, & Olson, 2014). Importantly however, while plagiarism concerns would lead to a desire to protect creative works, such protection would be expected to be fairly narrow. A plagiarism perspective would require IP rights only to the extent necessary to provide proper attribution. Incentives, natural rights, and expressive rights rationales, on the other hand, would often require stronger protection because of the need to prevent a variety of forms of copying, regardless of attribution.

Further supporting the view that plagiarism concerns underlie perceptions of intellectual property rights, Mandel and colleagues (in press) also found that people view copying creative works as more acceptable if the "copier" provides attribution to the original source than if they do not, a view that is unsupported in the law. Interestingly, creators themselves sometimes also value attribution rights, for instance agreeing to be paid less for an item if they are attributed as its creator (Buccafusco, Sprigman, & Burns, 2012). This intuition about attribution resolving IP concerns may help explain a rather unintuitive (from the perspective of legal scholars) behavior often observed on YouTube whereby people post a note, "No Copyright Intended [sic]" (Mandel et al, in press), when posting potentially copyright infringing works—a behavior easily understood in the context of concerns about plagiarism, but troubling from a legal perspective where confessing to willful copying can increase infringement liability. Additionally, parallel to findings in adults, 6-9 year old children also see copying others' work (in this case re-telling

stories) as more acceptable when the original creator is acknowledged as the source compared to when they are not (Shaw & Olson, 2015).

Reducing IP Protection: The case of the commons

Importantly, not all policy-makers and experts argue that the solution to the disparity between intellectual property laws and people's intuitions should focus on shifting user behavior. A growing number of scholars suggest that the level of IP protection necessary to incentivize creation can be overstated, and that restrictions on intellectual property protection should instead be loosened (e.g., Lessig, 2004; Lobel 2013; Kapczynski 2015). Broadly speaking, such arguments often focus on two lines of reasoning. First, that many creators would still innovate and create even in the absence of intellectual property incentives (Silbey, 2014). In fact, whole industries thrive creatively outside of the intellectual property sphere (notably fashion design, Raustiala & Sprigman, 2006; stand-up comedy, Oliar & Sprigman, 2008; magic, Loshin, 2010; pornography, Darling, 2014; and culinary contributions, Buccafusco, 2007; Fauchart & von Hippel, 2008). Second, that intellectual property protection can place a heavy cost on *future* innovation and creativity because individuals who want to improve upon, create derivative works, or otherwise advance a prior creator's achievement may be limited in doing so by IP rights (Mandel, 2012; Frischman & Lemley, 2007).

Advocates for weaker intellectual property protection along both of these lines focus on the importance of the "public commons" of information (Benkler, 2009). As Sir Isaac Newton famously wrote, "If I have seen further, it is by standing on the shoulders of giants" (as cited in Turnbull, 1959, p.416). In order for artistic and scientific advances to occur, people need to be able to draw upon and work off of the advances of those that came before them (e.g, Frischman & Lemley, 2007; Benkler, 2004), efforts that may best be advanced by making information as

free as possible (e.g., Boyle, 2008; Vaidhyathan, 2003). Consistent with this argument, there are now some empirical studies indicating that excessive IP protection *can* hinder scientific advancement (e.g., Lobel, 2013; Murray & Stern, 2007) and that intellectual property protection is not necessary to incentivize creative work in certain contexts (e.g., Hui & Png, 2002; see also Buccafusco & Heald, 2013).

The argument for the commons may be especially effective in influencing people because many of the ideas central to the “free culture” (commons) movement align with intuitions about plagiarism—which appears to be the dominant lay theory concerning creative works (i.e., Mandel et al., in press). That is, by encouraging greater sharing of creative works, at earlier stages, and encouraging attribution as many such systems do (e.g., Creative Commons; GNU General Public License), advances can be made more efficiently. Such an argument should likely lead to greater support for the loosening of intellectual property rights and restrictions.

The Previous Work

The current work builds directly on the contributions of Mandel et al. (in press), including the materials and much of the study logic. As we discussed above, in one study in that paper, the authors found that lay people believed plagiarism to be the most common reason for IP protection (as compared to incentives, natural rights, and expressive rights—though these differences were not all significant). Consistent with this belief, people also generally believed that providing attribution to the source of one’s idea made copying more acceptable, a result that was consistent across a wide array of subject matter.

Much of the rest of the Mandel et al. (in press) paper focused on a large experimental study, the results of which were used to select many of the dependent variables and stimuli used in the current work. First, that paper asked whether people believed that IP protection is more or

less strong than it should be. In general, we found that asking people whether various actions *should* be allowed led to more favorable evaluations of copying actions than asking people whether they believed those actions *were* allowed (by law). The current work concerns perceptions of what people *should* do and therefore removes the factor of legal permissibility.

In addition, the same large experiment investigated whether people treated copying another person's idea versus a specific expression of that idea versus the physical creative product that resulted from that idea as more or less acceptable to copy (critical distinctions in the legal world). The authors found that, in general, people believed that the copying of another person's idea is and should be permissible by law and that the copying of the exact expression of another person's idea is and should be less allowed than copying the idea itself. Moreover, participants said the copying of the physical product is and should be the least permissible of the three. In the current work, we focus only on copying of complete creative products because such cases present the most concrete examples of copying and are the most consistent across varying subject matter.

Finally, the Mandel et al. (in press) study investigated the degree to which patentable and copyrightable materials were treated similarly or differently in terms of degree of desired protection by lay people. The law makes considerable distinctions between these types of creative products. By and large, the authors found considerable variability within patent versus copyright domains, though there was an overall trend for the patent domains to be perceived as less acceptable to copy. In the current work, because we are not interested in this distinction so much as overall perceptions of intellectual property protection, we selected two of the six vignettes from the original paper, focusing on one from the patent domain and one from the copyright domain that had considerable variability in responses. We made this selection to

maximize the possibility that a manipulation could impact evaluations of these items, and because the two scenarios selected (medical and painting) reflected the kinds of IP situations that people might encounter in everyday life.

Importantly, the previous work did not try to manipulate people's views of intellectual property protection, making the current work the first studies to investigate whether people's views on these vignettes can be modified.

The Current Work

In the present work, we conducted two experiments aimed at investigating whether exposure to different arguments about the basis for having or not having intellectual property protection would lead to measurable differences in perceptions of IP rights, both generally and as they applied in two specific cases (the medical and painting vignettes from Mandel et al. (in press)). The bases for intellectual property rights that we tested included incentives, natural rights, expressive rights, plagiarism, and commons. The studies were specifically designed to test the following hypotheses:

- (1) Exposure to a plagiarism-based argument will be similar to a control condition (because people tend to think of plagiarism as the reason for IP protection). Further, the plagiarism condition will be associated with less support for intellectual property protection than incentives, natural rights, and expressive rights arguments across items assessing general endorsement of IP protection and the application of such protection to specific cases.
- (2) Exposure to a commons-based argument will lead to *less* support for intellectual property protection than the other arguments (especially incentives, natural rights, and

expressive rights), both on general measures of IP protection endorsement and on more specific applications of those items.

- (3) Infringement of IP protection will be seen as more acceptable if attribution is provided than if attribution is not provided (replicating Mandel et al., in press).

Study 1

This first experiment was an exploratory study designed to examine whether exposure to one or another view of the basis for intellectual property rights influences perceptions of IP law in general and/or responses to particular cases involving violations of IP law. Toward this end, American adults (on Amazon mturk) were asked to read a short statement depicting a reason why someone supports (or not) laws regulating the products of creativity and innovation. Participants were then asked to provide information about their own support for IP law, to evaluate whether certain copying behaviors should be allowed under a number of circumstances, and finally, to complete several demographic questions and a test of their IP knowledge.

Method

Participants. Participants were 287 adults ($M_{\text{age}} = 33.2$ years, $SD = 10.6$ years; 41.2% female; 73.5% White), recruited through Amazon's Mechanical Turk website. See Table 1 for detailed participant demographic information. All participants were required to be located in the United States and have a 95% or higher prior approval rating, a requirement commonly used in studies using Amazon's Mechanical Turk subjects (e.g., Berinsky, Huber, & Lenz, 2012; Paolacci, Chandler, & Ipeirotis, 2010). An additional 43 participants completed the study, but were excluded from analyses either for incorrectly answering both of the questions intended to check for attention ($n = 39$) or for completing the survey in less than three minutes ($n = 4$;

typically participation took 10-15 minutes.). All participants who completed the study were compensated \$1 for their participation.

Materials and Procedure. The survey materials included: (1) IP argument statements; (2) general IP opinion questions; (3) vignette evaluations; (4) IP knowledge and experience questions; and (5) demographic information questions.

IP arguments. In total, there were five IP argument statements (see Appendix A for argument statements). Of the five statements, four arguments depicted views that tended to support the benefits of intellectual property protection, including *Incentives*, *Natural Rights*, *Expressive Rights*, and *Plagiarism* perspectives. The fifth argument presented the *Creative Commons* perspective, which is a view tending to support weaker intellectual property protection.

General IP opinion questions. The general IP opinion questions were intended to measure participants' general level of support for intellectual property law. There were four questions in total, which included: 1) Do you think intellectual property laws in the United States should generally be made stronger, weaker, or left about where they are?; 2) How important do you believe it is for people to comply with intellectual property rights laws?; 3) How carefully do you comply with intellectual property laws?; and 4) Intellectual property laws should be most concerned with the rights of the: creator vs. user?. Participants responded to the questions using a slider scale ranging from 0 to 100, which was anchored at 50 when the item was presented to participants. For the first three questions, the lower end of the scale represented support for weaker IP protection and the higher end support for stronger IP protection (anchors: question 1, weaker...stronger; question 2, not important...important; and question 3, not carefully...carefully). For the fourth question, the lower end of the scale represented strong

support for the creator of IP, whereas the higher end of the scale represented support for the consumer of IP (anchors to question 4: creator...user). The latter item was reverse-scored to align with the first three items. Because participants' scores on all four opinion questions were highly related to one another (Cronbach's alpha = .73), we created a new factor to represent a construct we call *IP Support*, which is the average of scores on these four items. Higher IP Support scores indicate greater support for the strength of and compliance with IP law.

Vignette evaluations. The vignette evaluations included two vignettes about someone copying another person's creation or innovation (taken from Mandel et al, in press; see Appendix B). One vignette was about an aspiring artist who did a computer analysis of another artist's collage in order to make several painstaking replications of the piece of art (Painting vignette). The other vignette was about a pharmaceutical company that purchases a (patented) vaccine developed by another company in order to copy and manufacture duplicate copies of the vaccine (Medical vignette). Following the vignettes was a series of questions about the behaviors presented in the scenarios. The questions were intended to assess participants' "opinion[s] about whether such action should or should not be allowed, regardless of what the law might actually be" and whether certain mitigating circumstances would influence participants' opinions about the acceptability of the copying behavior. Participants reported their answers to each question on a six-point scale (1=definitely not allowed; 6=definitely allowed).

First, participants were asked, "Should the copying behavior be allowed?" to assess Baseline acceptability. Then three mitigating circumstances queries included: 1) *Attribution*- is the copying behavior allowed if the copier has identified the original creator as the source of the material?; 2) *No Compensation*- is the copying behavior allowed if the copier is not financially compensated?; and 3) *Education*- is the copying behavior allowed if the copier uses the material

strictly for educational purposes? Finally, participants were asked an attention check question about each scenario (Medical vignette: “Did HealthCorps obtain a patent for the chemical structure of the vaccine?”; Painting vignette: “Did Randall travel to Scotland to study Charles O’Malley’s artwork?”). Participants were excluded, as mentioned above, if they missed both attention checks.

IP knowledge and experience questions. In order to assess participants’ actual knowledge and training with regard to IP law, participants were asked ten multiple choice questions about intellectual property law and five questions about their level of experience with IP law or creation (taken from Mandel et al, in press). For example, in the knowledge quiz, participants were asked “What is permissible under copyright law, in general, concerning material found on the Internet: (a) It can be copied to other websites or downloaded freely; (b) It can be copied to other websites freely, but not downloaded; (c) It can be copied to other websites if attribution to the original site is provided; or (d) It can be copied to other websites if the author grants permission”.

With regards to experience, participants responded to questions about their level of experience as a creator/producer of works protected by intellectual property and a user of intellectual property on five-point scales (1=no experience, 5=considerable experience). Participants also indicated whether they have: 1) worked in an industry relying on intellectual property protection, 2) worked in connection with intellectual property law, and 3) had any other experience in connection to intellectual property rights. All IP knowledge and experience questions (and answers to the IP knowledge quiz), as well as the percentage of people giving each response, are listed in the online supplementary materials.

Demographic questions. The demographic section of the survey included questions about participant age, gender, race, education, employment status, income, political ideology, and type of residence.

Design. The study was a 6 (IP Argument: Incentives vs. Natural Rights vs. Expressive Rights vs. Plagiarism vs. Creative Commons vs. Control) x 2 (Scenario: Medical vs. Painting) x 4 (Mitigating Factor: Baseline vs. Attribution vs. No Compensation vs. Education) mixed factorial with IP Argument as a between-subjects factor and Scenario and Mitigating Factor as within-subjects factors. Therefore, each participant read only one IP argument statement (or did not read an argument statement) and answered all four mitigating factor questions in response to both scenario types.

Results

Opinion Items. IP Support scores were analyzed using a one-way ANOVA, revealing a significant effect of IP Argument condition (see Table 2 for means, standard deviations, univariate effects, post-hoc comparisons, and effect size estimates). Participants in the Plagiarism condition were significantly *more* supportive of IP protection compared to those in the Expressive Rights and Commons conditions. Participants in the Commons condition were also significantly *less* supportive of IP protection than those in the Incentives, Natural Rights, and Control conditions. No other differences were significant, all $ps > .094$.

Vignette Evaluations. Responses to all vignette items were analyzed in a 6 (IP Argument: Incentives vs. Natural Rights vs. Expressive Rights vs. Plagiarism vs. Creative Commons vs. Control) x 2 (Scenario: Medical vs. Painting) x 4 (Mitigating Factor: Baseline vs. Attribution vs. No Compensation vs. Education) mixed measures ANOVA with IP Argument as a between-subjects factor and Scenario and Mitigating Factor as within-subjects factors (see

Table 2 for means, standard deviations, univariate effects, post-hoc comparisons, and effect size estimates). Analyses revealed a significant main effect of IP Argument. Those who read the Plagiarism argument were significantly *more* likely to say the copying behavior should be allowed than those who read the Incentives argument and those who read the Natural Rights argument. Additionally, those who read the Commons argument were significantly *more* likely to say the copying behavior should be allowed than those who read the Incentives argument, those who read the Natural Rights argument, and those in the Control condition who read no argument. No other differences were significant, all $ps > .088$.

Analyses also revealed a significant main effect of Mitigating Factor (see Table 2). Participants were significantly *less* likely to say that copying should be allowed in response to the Baseline item compared to each of the three mitigating factor items: Attribution, No Compensation, and Education. Also, participants were significantly *more* likely to say that copying should be allowed in response to the Education item compared to the Attribution and No Compensation mitigating factor items. No other pairwise comparisons were significant, all $ps > .497$. Further, there was a significant main effect of Scenario (see Table 2), such that participants were *more* likely to say that copying should be allowed in response to the Painting vignette than in response to the Medical vignette.

These main effects were qualified by a significant interaction between Scenario and Mitigating Factor (see Table 2). Post-hoc LSD comparisons revealed that participants said that the copying behavior should be *more* allowed in the Painting scenario than in the Medical scenario in response to the Attribution and No Compensation items. However, participant responses to the two scenarios were not significantly different for the Baseline and Education mitigating factor items (See Figure 1). No other interactions were significant, all $ps > .275$.

Individual Difference Analyses. Next, we calculated correlations between IP knowledge (as determined by our intellectual property law quiz), IP experience, participant demographics, and responses to the dependent variables. Because individual differences were of lesser concern in this paper, given the large number of analyses that could be run to assess individual differences, and in order to reduce Type I errors, we use a $p < .01$ criteria in reporting these results (see Table 3 for correlations). We calculated an IP Knowledge score for each participant, which represents the number of correct responses on our 10-item intellectual property quiz ($M = 4.10$, $SD = 1.67$). On average, participants performed better than chance (2.5 out of 10 correct) on the IP knowledge quiz, $t(286) = 16.22$, $p < .001$, 95% CI = [1.41; 1.80]. On the two IP experience scale items (1-5, with higher numbers representing more experience with IP), participants reported having little to no experience as a creator or producer of IP ($M = 1.69$, $SD = 1.03$), and rather little experience as a user of IP ($M = 2.88$, $SD = 1.34$). These items were significantly positively correlated, $r = 0.33$, $p < .001$, thus we averaged these items to create an IP Experience score for each participant. Additionally, we created a categorical IP Experience score, separating participants who responded “yes” to at least one of the three yes/no IP experience questions from participants who responded “no” to all three questions were in the other category. On this categorical IP Experience measure, 76.7% of participants reported having no experience on all three yes/no experience questions.

IP Knowledge scores were, perhaps unsurprisingly, significantly positively correlated with both the scale and categorical IP Experience scores, such that more knowledgeable participants were more likely to report having had experience with IP. Those with greater IP Knowledge tended to think that copying should be *less* permissible for the Medical Attribution item, and similarly, those reporting that they had IP Experience (categorical measure) were *less*

likely to say that copying should be allowed on the Medical Attribution and Medical No Compensation items. Further, correlations with participant demographic variables revealed that older, white, and more educated participants were more likely to have higher IP Knowledge and that more educated and male participants were more likely to report experience with IP (see Table 3).

The only participant demographics to emerge as significant predictors of attitudes about IP across multiple measures were age, income, employment status, and gender (see Table 3). Participant age was significantly correlated with many dependent measures, such that older participants were more likely to have strong general support for IP protection and tended to believe that the Medical copying cases should not be allowed. Additionally, significant correlations between participant income and some of the Medical and Painting cases suggest that those with higher income were more likely to say that the copying behavior should not be allowed in those cases. Participant employment status was significantly correlated with measures of IP attitudes as well, such that more employed participants were more likely to support IP protection in general and were more likely to say that the copying behavior should not be allowed in some of the Medical and Painting cases. Finally, significant correlations with participant gender suggest that females were more likely to support stronger IP law and say that the copying behavior should not be allowed in one of the Painting cases. Thus, participants who were older, wealthy, more educated, and female tended to have stronger support of IP protection in general and/or were less accepting of some of the IP infringement cases.

Discussion

Overall, we found several initial results consistent with our predictions. Exposure to differing arguments about the basis for intellectual property law led to some differences in

people's support for IP protection. More specifically, the Commons condition resulted in a fairly stable pattern of results: Consistent with our second hypothesis, by and large, this condition led participants to support weaker IP protection compared to the other conditions. On the "IP Support" composite, exposure to the Commons argument led to less IP support than the Incentives, Natural Rights, and Control conditions. Further, in the vignettes section of the task, participants in the Commons condition found copying more acceptable than those in the Incentives, Natural Rights, and Control conditions.

In contrast to the rather straight-forward results of the Commons condition, we found that emphasizing *Plagiarism* as the basis for intellectual property protection (the view that most aligns with people's intuitions, Mandel et al., in press) led to a more complex set of findings, only partially consistent with our hypothesis. On the one hand, the Plagiarism condition led to *more* support for intellectual property protection in theory (as demonstrated on our IP Support variable) than hearing about an Expressive Rights basis for intellectual property protection or Commons concerns. On the other hand, however, the Plagiarism argument also led people to view violations of intellectual property protections on the vignette task as *more* acceptable than the Incentives or Natural Rights arguments, consistent with our first hypothesis. Thus we found mixed results for our hypothesis—and conducted Study 2 to assess whether this pattern would hold in a conceptual replication. Finally, with regard to the first hypothesis, the Plagiarism condition never differed from the Control condition, providing some suggestion (beyond Mandel et al, in press) that the Plagiarism condition may align especially well with people's existing beliefs about the purpose of IP protection.

With regard to our third hypotheses, we found support; attribution led to significantly more perceived acceptability of copying, despite the fact that attribution provides no legal right

to copy another person's medicine or painting. The other mitigators—lack of compensation and educational use—led to greater copying permissibility judgments than the baseline condition as well, though were of less theoretical relevance to the current paper and are therefore excluded in Study 2. As in Mandel et al (in press), we also found that people viewed violating intellectual property protection with regard to a medical scenario as less problematic than IP protection regarding a painting, though the degree to which this is a copyright versus patent issue or just something specific to these two items (a painting versus a vaccine) remains unclear.

Finally, with regard to individual differences, we found several significant relationships that we sought to replicate in Study 2. We found that participants who scored higher on our IP knowledge quiz were likely to be older, White, and more educated; they also believed that copying in the medical scenario was less acceptable. In general, greater “IP Support” (more protection for creators, support of IP law, etc.) was seen among women, those who were employed, and those with more years of formal education. Finally, in the medical vignette case, older participants believed that copying was less acceptable, while in the painting vignette, women and those with greater income thought that copying was less acceptable.

Because this study was primarily exploratory, and to avoid premature conclusions, we ran a conceptual replication of the current work to ask which of the observed patterns would replicate and therefore which of these findings could lead to clear conclusions.

Study 2

In this study, a conceptual replication of Study 1, we exposed participants to a much more in-depth and (supposedly) factually-supported description of the basis for intellectual property law, depicting both a (partially) hypothetical history and theoretically-supported basis for the law framed around one of the five bases of Study 1 (or a Control condition). We were interested in whether the effects of the arguments would be stronger if the statements were

presented as the actual historical and factually supported basis for intellectual property law, rather than framed as one person's brief opinion on the basis of the law (as they had been in Study 1). Thus, we substantially elaborated the rationale for each manipulation basis and asked fewer dependent variable questions in the vignettes, focusing on those of greatest interest for the current hypotheses. Specifically, we retained only the baseline and attribution conditions. Our primary question was whether our major findings from Study 1 would receive further support in Study 2.

Method

Participants. Participants were 285 adults ($M_{\text{age}} = 33.7$ years, $SD = 10.9$ years; 45.0% female; 77.8% White), recruited through Amazon's Mechanical Turk website. See Table 1 for detailed participant demographic information. As in the first study, all participants were required to be located in the United States and have a 95% or higher approval rating, but also could not have participated in Study 1. An additional 45 participants completed the study, but were excluded from analyses for incorrectly answering both of the questions intended to check for attention. All participants who completed the study were compensated \$1 for their participation.

Materials and Procedure. As in Study 1, the survey materials included: (1) IP argument statements; (2) general IP opinion questions; (3) vignette evaluations; (4) IP knowledge and experience questions; and (5) demographic information questions. Materials for parts 2, 4, and 5 were identical to those in Study 1. Changes to the materials for parts 1 and 3 are described below.

IP arguments. The five argument statements included the same bases as Study 1 (*Incentives, Natural Rights, Expressive Rights, Plagiarism, and Creative Commons*); however these statements now provided an in-depth historical and evidence-supported account of why and

how IP law is designed to achieve the objective of the particular condition (see Appendix C for argument statements).

Vignette evaluations. The vignette evaluations included the same two vignettes as Study 1 about someone copying another person's creation or innovation (taken from Mandel et al, in press; see Appendix B). Again, following the vignettes was a series of questions about the behaviors presented in the scenarios; however, only the Baseline acceptability ("Should the copying behavior be allowed?") and Attribution ("Should the copying behavior allowed if the copier has identified the original creator as the source of the material?") questions were included. Participants again reported their answers to each question on a six-point scale (1=definitely not allowed; 6=definitely allowed). Finally, participants were asked the same attention check questions about the scenarios and again participants were excluded, as mentioned above, if they missed both attention checks (the same criterion used in Study 1).

Design. The study was a 6 (IP Argument: Incentives vs. Natural Rights vs. Expressive Rights vs. Plagiarism vs. Creative Commons vs. Control) x 2 (Scenario: Medical vs. Painting) x 2 (Mitigating Factor: Baseline vs. Attribution) mixed factorial with IP Argument as a between-subjects factor and Scenario and Mitigating Factor as a within-subjects factor. Therefore, each participant read only one IP argument statement (or did not read an argument statement, in the Control condition) and answered both mitigating factor questions in response to both scenario types.

Results

Data Preparation. As in Study 1, participants' scores on the four opinion items were highly correlated (Cronbach's alpha = .80), so we again created an *IP Support* factor, which is the average of scores on the four items. The Creator vs. User opinion question was again reverse scored.

Opinion Items. A one-way ANOVA revealed that IP Support scores were significantly different by IP Argument condition (see Table 4 for means, standard deviations, univariate effects, post-hoc comparisons, and effect size estimates). Participants in the Commons condition were significantly *less* supportive of IP protection compared to those in the Natural Rights condition. Also, participants in the Control condition were significantly *less* supportive of IP protection than those in the Natural Rights condition. No other comparisons were significant, all $ps > .059$.

Vignette Evaluations. Responses to all vignette items were analyzed in a 6 (IP Argument: Incentives vs. Natural Rights vs. Expressive Rights vs. Plagiarism vs. Creative Commons vs. Control) x 2 (Protection Type: Medical vs. Painting) x 2 (Mitigating Factor: Baseline vs. Attribution) mixed measures ANOVA with IP Argument as a between-subjects factor and Protection Type and Mitigating Factor as within-subjects factors (see Table 4 for means, standard deviations, univariate effects, post-hoc comparisons, and effect size estimates). Analyses revealed a significant main effect of IP Argument. Those who read the Plagiarism argument were significantly *more* likely to say the copying behavior should be allowed than those who read the Incentives argument, those who read the Natural Rights argument, and those who read the Expressive Rights argument. Additionally, those who read the Commons argument were significantly *more* likely to say the copying behavior should be allowed than those who read the Incentives argument, those who read the Natural Rights argument, and those who read the Expressive Rights argument. Finally, those who were in the Control condition, and thus did not read an IP argument, were significantly *more* likely to say that the copying behavior should be allowed than those who read the Incentives argument and those who read the Expressive Rights argument. No other comparisons were significant, all $ps > .102$.

Analyses also revealed a significant main effect of Mitigating Factor (see Table 4), such that participants were *more* likely to say that copying should be allowed in response to the Attribution mitigating factor item than in response to the Baseline item. Further, there was a significant main effect of Scenario (see Table 4), such that participants were *more* likely to say that copying should be allowed in response to the Painting vignette than in response to the Medical vignette. These main effects were qualified by a significant interaction between protection type and mitigating factor, (See Table 4). As suggested by the main effect of Scenario, responses to both mitigating factor questions (Baseline and Attribution) were higher for the Painting scenario than the Medical scenario. However, this difference between scenarios was larger in response to the Attribution questions compared to the Baseline questions (see Figure 2). No other interactions were significant, all $ps > .311$.

Individual Difference Analyses. Next, we calculated correlations between IP knowledge, IP experience, participant demographics, and responses to the dependent variables (see Table 5 for correlations). We again calculated an IP Knowledge score for each participant ($M = 3.57$, $SD = 1.48$). As in Study 1, participants performed better than chance (2.5 out of 10 correct) on the IP knowledge quiz, $t(284) = 12.25$, $p < .001$, 95% CI = [0.90; 1.24]. Participants once again reported having little to no experience as a creator or producer of IP ($M = 1.63$, $SD = 1.02$), and rather little experience as a user of IP ($M = 2.88$, $SD = 1.34$) on the two IP experience scale items (1-5, with higher numbers representing more experience with IP). As in Study 1, since these items were significantly positively correlated, $r = 0.28$, $p < .001$, we averaged these items to create an IP Experience score for each participant. Additionally, we created a categorical IP Experience score, separating participants who responded “yes” to at least one of the three yes/no IP experience questions from participants who responded “no” to all three questions were

in the other category. On this categorical IP Experience measure, 85.6% of participants reported having no experience on all three yes/no experience questions.

Responses to both IP experience measures were not related to any of the dependent variables (including IP Knowledge) or demographic variables. However, it was again the case that older participants were more likely than younger participants to have high IP knowledge. IP knowledge was not related to any other demographic or dependent variables. In terms of the relationship between demographics and our dependent variables, we found that female and older participants were more likely to support stronger IP protection. Female participants were also more likely to say that the copying behavior should not be allowed in the Painting Baseline and Painting Attribution cases. Therefore, as in Study 1, being female and being older were associated with greater support for stronger IP protection across dependent variables.

Discussion

Study 2 sought to conceptually replicate the findings from Study 1 using a new set of materials that were designed to provide a stronger manipulation. Rather than expressing a person's brief view about the basis for IP law, in this study our manipulation described and factually-supported a history and theoretical basis for intellectual property law. Further, the actual arguments were substantially longer in length (a page of text rather than a short paragraph) to maximize the strength of this manipulation. Despite these changes, the general pattern of results was quite similar to Study 1.

As in Study 1, most of our effects concerned the Commons and the Plagiarism conditions. Again, consistent with Hypothesis 2, the Commons condition was associated with less general support for intellectual property protection compared to the Natural Rights condition on the IP Support measures. Further, the Commons argument led participants to see copying as

more acceptable in the vignettes than those who read the Incentives, Natural Rights, and Expressive Rights arguments. Thus, the story for the Commons condition was again fairly clear—the commons argument appears to make lay people less supportive of IP rights, both in general, abstract items, and as IP protection would apply to specific cases.

In this study we also saw some convergence with Study 1 surrounding the impact of the Plagiarism condition. While this condition did not lead to differences in IP support (the unexpected finding in Study 1 that went in the direction opposite our prediction), it did lead participants to see copying as more acceptable in the vignettes than the Incentives, Natural Rights, and Expressive Rights conditions. This latter pattern of results was consistent with Hypothesis 1 and the general finding from Study 1. Also consistent with Hypothesis 1, the Plagiarism condition never differed from the Control condition, again supporting the idea that the Plagiarism argument may be similar to people's pre-existing intellectual property views.

In Study 2, unlike Study 1, the Control condition, in which participants read no argument, differed from several other conditions. Specifically, participants in the Control condition showed less support for IP protection on the IP Support composite than those in the Natural Rights condition. Similarly, those in the Control condition, found copying in the vignettes to be more acceptable than those in the Incentives or Expressive Rights conditions.

As in Mandel et al, in press, and Study 1, participants viewed violating IP protection to be more acceptable in the case of painting than in the medical vignette. Also, consistent with Study 1, copying was seen by participants as more acceptable when it occurred with attribution than without, consistent with our third hypothesis.

Finally, with regard to individual differences, we found that IP knowledge was associated with age, support for IP protection was associated with being female, older, and employed, and

that females were more likely to believe that copying in the painting scenario was less permissible.

General Discussion

Across two experiments, in which we exposed people to different arguments about the basis for IP protection (Incentives, Natural Rights, Expressive Rights, Plagiarism, Commons, Control) in two different ways (someone's argument - Study 1, a longer historical argument – Study 2), we found partial to strong support for each of our three primary hypotheses in this paper. We found significant differences between our respondents as a function of which argument condition they received. The majority of differences emerged as a result of two of the conditions—the Commons argument and the Plagiarism argument. Across the board in both studies, the Commons argument led to decreases in support for intellectual property protection, both concerning more general conceptual understanding (e.g., Do you think intellectual property laws in the United States should generally be made stronger, weaker, or left about where they are?) and in specific vignette contexts (e.g., participants saw it as more acceptable for one company to copy another company's patented vaccine).

The pattern for the Plagiarism argument was somewhat less systematic. In Study 1, the Plagiarism condition led to more support for IP protection when it was worded quite generally, but this pattern did not hold in Study 2. In contrast, in both studies and consistent with our hypothesis, the Plagiarism condition led to the view that copying was more acceptable than the Incentives and Natural Rights Conditions (and Expressive Rights in Study 2) when participants were queried about specific contexts in the vignettes. Further, the Plagiarism condition never differed from the Control Condition, suggesting that in fact the argument that preventing

plagiarism is the goal of IP protection may well be the default assumption for many lay people (Mandel et al, in press).

The Incentives and Expressive Rights conditions led to less perceived acceptability of copying (i.e., favoring stronger IP protection) in the medical and painting vignettes than the Control condition in Study 2, though not in Study 1. Also, the Natural Rights condition led to more support for IP protection on the IP support composite than the Control condition. These results are all consistent with the expected directional influence of the IP arguments in these conditions—each would provide reasons for stronger IP rights. Given the failure to observe those effects in Study 1 we are cautious in interpreting these results, however. It may be that the more extended arguments in Study 2 produced an effect that was too small to be significant in Study 1. Insofar as the differences from the Control condition are replicated in future work, these findings suggest that explaining any of these bases for IP protection can lead people to become more concerned with protecting creative work.

Taken together these findings suggest that, unlike previous work that did not find significant effects when examining the impact of telling people about the existence of intellectual property laws or penalties for violating intellectual property laws, exposing people to arguments about the *basis* for intellectual property law *can* influence people's judgments of the acceptability of copying creative works, both in general and as applied in particular cases (here, painting and medical contexts). However not all arguments had particular appeal or resulted in the same kinds of changes. Specifically, we were able to move people's opinions more systematically in the Commons condition than in other conditions. There could be several reasons for this. For example, the logic behind the commons rationale may be easier for lay individuals to understand, the Commons arguments may have been more effectively made in our

stimuli (though we designed the manipulations to be as similar as possible), this argument may have been newer and therefore offered a fresher more novel perspective, or perhaps it is simply easier to persuade people in the direction of supporting weaker intellectual property protection (this was the only argument clearly framed to move people in that direction). Future work could test other arguments for weakening intellectual property protection to differentiate these possibilities.

Further, we found that exposing people to the Natural Rights, Expressive Rights, or Incentives arguments led them to view copying in the medical and painting vignettes as less acceptable than in the Plagiarism condition. As described above, the Plagiarism condition appeared in previous work (Mandel et al., in press) to align most clearly with how people already thought about the basis for IP law. Consistent with this claim, the Plagiarism case never differed from the Control condition, consistent with Hypothesis 1. Also, perhaps relatedly, people saw attribution, which might be thought of as the solution to a plagiarism problem, as making copying more acceptable than it was perceived to be in the baseline condition. This latter finding replicates previous work (Mandel et al., in press) and continues to suggest that for an as yet unclear reason, people's intuitions about intellectual property protection really do appear to be based in concerns about plagiarism. This lay intuition does not comport with the law, and is likely to surprise many legal scholars. One possible explanation for this incongruity may be that lay individuals tend not to have any moral or ethical principle with which to align intellectual property law. People's views of what laws are just tend to comport with their moral and ethical belief systems (Tyler, 1997). In the absence of an obvious default ethical basis for intellectual property law, people search for a moral hook onto which they can hang their understanding of laws that they know prohibit copying in some rough sense. Ethical prohibitions on plagiarism,

which develop at an early age (Olson & Shaw, 2011; Shaw & Olson, 2015;), fill this bill. As a result, lay individuals tend to view intellectual property law as a form of anti-plagiarism law, in an effort to fit their legal understanding into an existing moral principle.

Across both studies we also found that lay people found it more acceptable to copy a painting than to copy a vaccine. This result replicates the findings of Mandel et al. (in press). While this difference could reflect a more generalizable finding that patent violations are seen as more problematic than copyright violations, given the range of variability within each type of violation in past work, and the fact that the distributions of responses to different items within the patent and copyright domains was overlapping, we hesitate to make this generalization (see Mandel et al., in press). Alternatively, it just may be the case that copying a painting is seen as less profitable than copying a vaccine or that more work goes into making a vaccine and therefore it is more deserving of protection.

A few consistent individual differences emerged across the two studies. In general, IP knowledge (as assessed by our ten-item test) was associated with age such that older people performed better than younger people. Support for intellectual property protection (as assessed by the IP Support composite) was associated with being female and being employed in both studies. Finally, females were also more likely to see copying in the Painting scenario as more unacceptable than were males. No other individual differences were observed systematically across studies. These findings are fairly consistent with previous reports that within the domain of software piracy, as well as across other legal domains, women and older adults are more law-abiding than men or younger adults (e.g., Farrington, 1986; Higgins, 2006; Yagil, 1998). While the current work focused on asking what *should* be allowed, and the previous findings reported

on actual behavior, there does clearly appear to be some consistency within both types of responses.

One final observation is that participants were remarkably supportive of infringement in both vignettes overall. In real life the events described in the vignettes would be unambiguously prohibited by intellectual property law (in both the baseline and attribution contexts), yet the mean scores by participants were very close to the midpoint of the scale, in equipoise between being legal and illegal, not down near the unacceptable level. While previous work has suggested a general bias for people to believe infringing activities should be more acceptable than they believe the law permits (Mandel et al., in press), these findings are nonetheless surprising. For those concerned with support for intellectual property protection, these findings are unequivocally troubling. They indicate a public that is significantly out of touch with intellectual property law, a result that likely helps explain the widespread non-compliance with the law discussed above and that may bode ill for any efforts to strengthen intellectual property protection.

Limitations. As with all studies, these studies have several limitations which will lead to important future work. One concern is whether our results generalize beyond this experimental survey to possible effects in the broader world, and more specifically, behaviors people will engage in. Do people exposed to arguments based on the commons actually judge real copying actions less harshly? Do they themselves then feel more licensed to copy? We believe that our study serves as a demonstration that one's views about intellectual property protection can be shifted based on arguments about the legal basis for IP protection. Presumably, impacting intentions or beliefs is easier than affecting behavior, and therefore we would predict that a stronger version of our manipulation would be necessary to produce significant behavioral

change (that is, one would need to read more than a one page argument). That said, our findings do suggest *which* arguments might be the especially effective.

A second concern might be our reliance on a sample of online Amazon mTurk users. As previous studies have reported, on demographic variables, mTurk samples are much closer to representative samples than traditional college student samples and are even fairly representative compared to other types of recruitment in behavioral sciences studies (e.g., Berinsky, et al., 2012). However, our sample was more liberal on average than the population as a whole. We are less concerned about this than we normally would be because (1) political orientation was not correlated with any of our findings, (2) these studies were experiments so we were interested primarily in differences between condition rather than existing individual differences (i.e., liberals were overrepresented in all conditions, not just in one), and (3) we did not observe ceiling effects, let alone ceiling effects that could be attributed to political orientation.

Relatedly, a concern might be that mTurk participants are specifically biased in the domain of IP protection—for example, they might over-represent illegal file-sharers. While we have no evidence one way or another on this, we do know that a very high percentage of Americans engage in illegal downloading of materials (Danaher & Smith, 2014; Rob & Waldfogel, 2006), meaning even if they are overrepresented in the sample, this sample is not particularly unusual in that regard. That said, of course testing the generalizability of these findings beyond the current sample would be useful, especially insofar as one wants to understand the impact these results may have on behavior in everyday life, not just in a younger, more liberal group of computer-savvy individuals.

One other limitation of the study is that perhaps the nature of the design—having utilized a within-subjects design in our manipulation of mitigating factors—caused participants to

believe they had to provide different answers to the mitigating items than they did on the baseline items. We are not as concerned as we might have been about this because more than 70% of participants in each study gave the same response to the baseline condition as they gave to at least one mitigator, suggesting most were well-aware that this was an acceptable answer. However, a better way to resolve this potential ambiguity would be through a between-subject design in which one group of participants is asked the baseline questions and another group is asked about the mitigators. If such a study yielded similar results, we could be fairly confident that the differences were due to actual perceived differences in the question and not due to demand characteristics.

One final limitation of the study design is the use of two different infringement cases (medical vaccine and painting) for the vignette evaluations that are confounded with the two forms of IP protection (patent and copyright). That is, it is unclear whether the differences that emerged (e.g., people saw it as more acceptable to copy in the Painting vignette than the Vaccine vignette) were driven by differences in how people reason about vaccines compared to paintings, or how they reason more broadly about patentable versus copyrightable subject matter domains. Future work could examine whether these differences arise from a difference in the type of legal protection and creativity at issue (patent/inventive versus copyright/artistic) or a difference in subject matter (here, medical versus painting). One avenue for exploration could be software, which can be subject to both patent and copyright protection.

Conclusion. Our results from two experiments begin to suggest a possible way to influence people's beliefs about intellectual property rights: explaining the policy behind *why* one might want stronger or weaker intellectual property law. Specifically, emphasizing the need for material to be in the public domain can lead to measurable reductions in support for stronger

intellectual property protection. Further, emphasizing plagiarism as the basis for intellectual property law appears to lead to less support for IP protection than arguments based on incentives, natural rights, or expressive rights. Together this work suggests that people's beliefs and intentions with regard to intellectual property rights are somewhat malleable and with effective messaging can be modified in certain regards.

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Table 1

Percentages Describing Participants in Study 1 and Study 2

Variable	Study 1	Study 2
Age [^]		
18-29	48%	41%
30-39	31%	39%
40-59	18%	15%
60-79	3%	5%
Gender		
Male	59%	55%
Female	41%	45%
Other*	0%	0%
Do not wish to report*	0%	0%
Race ⁺		
Non-Hispanic White or Euro-American	74%	77%
Black, Afro-Caribbean, or African American	6%	6%
Latino or Hispanic	7%	6%
South Asian or Indian American	5%	3%
Middle Eastern or Arab American	0%	0%
Native American or Alaskan Native	0%	1%
Other	5%	3%
More than one	3%	4%
IP Knowledge [^]		
0 to 3 correct	38%	48%
4 to 6 correct	53%	50%
7 to 10 correct	9%	2%
Education		
Less Than High School	1%	0%
Some High School	0%	1%
High School Grad	11%	14%
Some College	25%	27%
Trade/Technical Training	2%	2%
Associate Degree	13%	11%
Bachelor's Degree	37%	34%
Some Postgrad Work	3%	2%
Postgrad Degree	8%	9%
Residence		
Urban	30%	27%
Suburban	41%	38%
Small Town	16%	18%
Rural	13%	17%
Political Ideology		
Very Conservative	2%	2%
Conservative	10%	11%

Moderate	26%	31%
Liberal	38%	39%
Very Liberal	19%	16%
Other*	2%	0%
Don't know*	3%	1%
Employment		
Unemployed	17%	17%
Part-Time	16%	16%
Full-Time	55%	55%
Student*	8%	7%
Retired*	2%	2%
Other*	2%	3%
Income		
Less than 10,000	6%	7%
10,000-19,000	10%	14%
20,000-29,000	19%	14%
30,000-39,000	15%	14%
40,000-49,000	10%	12%
50,000-74,000	20%	22%
75,000-99,000	12%	12%
100,000-150,000	4%	4%
More than 150,000	2%	0%
Do not wish to report*	2%	1%

Note. Demographic and IP Knowledge responses from participants in Study 1 and Study 2 are presented above.

^ Continuous variables used for analyses

* Not included in analyses to ensure that variables were ordinal

+ Dichotomous variable (white/non-white) used for analyses

Table 2

Means, Standard Deviations, Univariate Effects, Post-hoc Comparisons, and Estimates of Effect Size for Study 1

Dependent Measures	Main Effect of IP Argument										
	Means (SD)						Univariate Effects				
	Incentives	Natural Rights	Expressive Rights	Plagiarism	Commons	Control	<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
IP Support	69.24 (18.11)	72.30 (17.33)	66.74 (18.20)	74.74 (17.51)	60.33 (21.08)	68.35 (17.83)	3.43	5,274	.005	.06	0.01, 0.09
	Significant Post-hoc LSD Tests										
			<i>p</i>	<i>d</i>	95% CI						
	Plagiarism vs. Expressive Rights		.033	0.45	0.64, 15.37						
	Plagiarism vs. Commons		<.001	0.74	6.91, 21.91						
	Commons vs. Incentives		.025	0.45	1.12, 16.70						
	Commons vs. Natural Rights		.001	0.62	4.64, 19.30						
	Commons vs. Control		.041	0.41	0.32, 15.71						
	Main Effect of IP Argument										
	Means (SD)						Univariate Effects				
Vignette Evaluations	Incentives	Natural Rights	Expressive Rights	Plagiarism	Commons	Control	<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
	3.52 (1.14)	3.57 (1.14)	3.77 (1.14)	4.08 (1.14)	4.16 (1.15)	3.67 (1.15)	2.51	5,274	.031	0.04	0.002, 0.07
	Significant Post-hoc LSD Tests										
			<i>p</i>	<i>d</i>	95% CI						
	Plagiarism vs. Incentives		.020	0.49	0.09, 1.03						
	Plagiarism vs. Natural Rights		.028	0.45	0.06, 0.97						

	Commons vs. Incentives		.009	0.56	0.16, 1.12								
	Commons vs. Natural Rights		.013	0.52	0.13, 1.06								
	Commons vs. Control		.044	0.43	0.01, 0.96								
	Main Effect of Mitigating Factor												
	Means (SD)					Univariate Effects							
	Baseline		Attribution		No Compensation		Education		<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
Vignette Evaluations	3.01 (1.32)		3.91 (1.31)		3.96 (1.37)		4.29 (1.32)		137.33	3,822	<.001	.33	0.29, 0.37
	Significant Pairwise Comparisons												
			<i>p</i>	<i>d</i>	95% CI								
	Baseline vs. Attribution		<.001	0.68	0.76, 1.03								
	Baseline vs. No Compensation		<.001	0.71	0.82, 1.07								
	Baseline vs. Education		<.001	0.97	1.14, 1.42								
	Education vs. Attribution		<.001	0.29	0.24, 0.53								
	Education vs. No Compensation		<.001	0.25	0.23, 0.45								
	Main Effect of Scenario												
	Means (SD)					Univariate Effects							
	Medical			Painting			<i>F</i>	<i>df</i>	<i>p</i>	<i>d</i>	95% CI		
Vignette Evaluations	3.64 (1.47)			3.94 (1.39)			8.64	1,274	.004	0.21	0.10, 0.50		
	Mitigating Factor X Scenario Interaction												
	Means (SD)					Univariate Effects							
	Baseline		Attribution		No Compensation		Education		<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
	Medical	Painting	Medical	Painting	Medical	Painting	Medical	Painting					
Vignette Evaluations	2.91 (1.68)	3.15 (1.68)	3.65 (1.74)	4.19 (1.57)	3.81 (1.79)	4.11 (1.65)	4.21 (1.66)	4.38 (1.57)	6.02	3,822	<.001	.02	0.006, 0.04
	Post-hoc LSD Tests												

		<i>p</i>	<i>d</i>	95% CI					
	Medical Baseline vs. Painting Baseline	.073	0.14	-0.02, 0.46					
	Medical Attribution vs. Painting Attribution	<.001	0.33	0.31, 0.77					
	Medical No Compensation vs. Painting No Compensation	.018	0.17	0.05, 0.53					
	Medical Education vs. Painting Education	.187	0.11	-0.07, 0.36					

Notes. IP Support scores have a possible range of 0-100 (from less support to more support of IP Law). Vignette scores have a possible range of 1-6 (from definitely not allowed to allowed).

Table 3

Correlations Between Dependent Variables and Demographics for Study 1

Variable	Age	Income	Employment Status	Gender	Education	Race	IP Knowledge	IP Support	IP Experience (scale)	IP Experience (categorical)
IP Knowledge	.27**	-.01	-.07	.10	.27**	-.18*	—	—	—	—
IP Support	.19*	.08	.18*	.22**	.14	.08	-.01	—	—	—
IP Experience (scale)	.01	-.02	.06	-.15*	.22**	-.06	.25**	-.12	—	—
IP Experience (categorical)	.14	.09	-.10	-.06	.27**	-.07	.24*	.10	.47**	—
Medical Baseline	-.24**	-.15	-.04	-.06	-.10	-.04	-.12	-.24**	.03	-.11
Medical Attribution	-.28**	-.18*	-.09	-.02	-.14	.04	-.20*	-.19*	-.05	-.16*
Medical No Compensation	-.24**	-.17*	-.19*	-.10	-.08	-.10	-.12	-.28**	.02	-.17*
Medical Education	-.27**	-.16*	-.11	-.12	-.04	-.02	-.07	-.24**	.11	-.03
Painting Baseline	-.01	-.17*	-.16	-.18*	-.06	-.01	.06	-.37**	.10	-.02
Painting No Compensation	-.07	-.17*	-.18*	-.11	-.08	-.07	.05	-.30**	.13	-.05

Note. Given the large number of analyses that could be run to assess individual differences, and in order to reduce Type I errors, we use a $p < .01$ criteria in reporting these results. All other possible correlations had $p > .01$. See Table 1 for information about demographic scaling.

*Indicates significance at $p < .01$.

**Indicates significance at $p < .001$.

Table 4

Means, Standard Deviations, Univariate Effects, Post-hoc Comparisons, and Estimates of Effect Size for Study 2

Main Effect of IP Argument											
Dependent Measures	Means (SD)						Univariate Effects				
	Incentives	Natural Rights	Expressive Rights	Plagiarism	Commons	Control	<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
IP Support	71.64 (20.87)	76.03 (18.98)	68.77 (17.88)	69.58 (27.09)	64.35 (17.99)	63.38 (20.38)	2.50	5,277	.031	0.04	0.002; 0.07
Significant Post-hoc LSD Tests											
			<i>p</i>	<i>d</i>	95% CI						
	Commons vs. Natural Rights		.005	0.74	3.57; 19.80						
	Control vs. Natural Rights		.003	0.64	4.32; 20.99						
Main Effect of IP Argument											
Dependent Measures	Means (SD)						Univariate Effects				
	Incentives	Natural Rights	Expressive Rights	Plagiarism	Commons	Control	<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
Vignette Evaluations	3.04 (1.19)	3.17 (1.19)	2.83 (1.19)	3.71 (1.19)	3.72 (1.19)	3.58 (1.19)	4.72	5,273	<.001	.08	0.02, 0.12
Significant Post-hoc LSD Tests											
			<i>p</i>	<i>d</i>	95% CI						
	Plagiarism vs. Incentives		.008	0.56	0.18, 1.17						
	Plagiarism vs. Natural Rights		.026	0.45	0.06, 1.01						
	Plagiarism vs. Expressive Rights		<.001	0.74	0.39, 1.36						
	Commons vs. Incentives		.006	0.57	0.20, 1.18						
	Commons vs. Natural Rights		.02	0.46	0.09, 1.02						
	Commons vs. Expressive Rights		<.001	0.75	0.41, 1.37						

	Control vs. Incentives	.036	0.45	0.04, 1.05					
	Control vs. Expressive Rights	.004	0.63	0.25; 1.25					
Main Effect of Mitigating Factor									
	Means (SD)				Univariate Effects				
	Baseline		Attribution		<i>F</i>	<i>df</i>	<i>p</i>	<i>d</i>	95% CI
Vignette Evaluations	3.03 (1.27)		3.66 (1.31)		117.95	1,273	<.001	0.49	0.52, 0.75
Main Effect of Scenario									
	Means (SD)				Univariate Effects				
	Medical		Painting		<i>F</i>	<i>df</i>	<i>p</i>	<i>d</i>	95% CI
Vignette Evaluations	3.06 (1.59)		3.63 (1.49)		24.45	1,273	<.001	0.37	0.34, 0.80
Mitigating Factor X Scenario Interaction									
	Means (SD)				Univariate Effects				
	Baseline		Attribution		<i>F</i>	<i>df</i>	<i>p</i>	η_p^2	90% CI
	Medical	Painting	Medical	Painting					
Vignette Evaluations	2.80 (1.68)	3.26 (1.65)	3.31 (1.74)	4.00 (1.64)	6.90	1,273	.009	.025	0.003, 0.062
	Baseline Mean Difference (95% CI)		Attribution Mean Difference (95% CI)						
	0.69 (0.44, 0.93)		0.46 (0.22, 0.70)						

Notes. IP Support scores have a possible range of 0-100 (from less support to more support of IP Law). Vignette scores have a possible range of 1-6 (from definitely not allowed to allowed).

Table 5

Correlations Between Dependent Variables and Demographics for Study 2

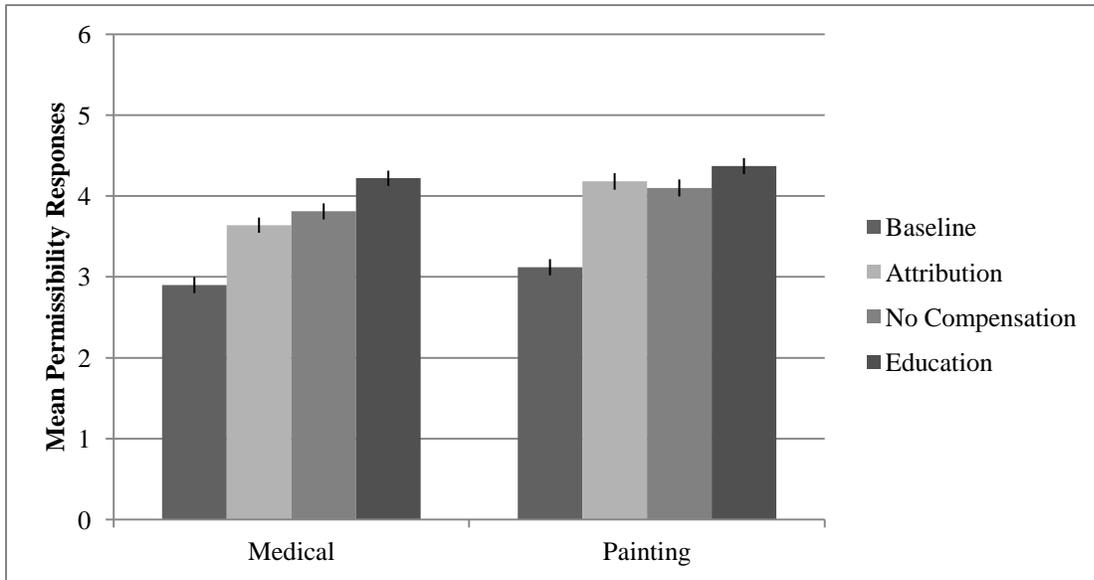
Variable	Age	Gender
IP Knowledge	.19*	.02
IP Support	.20*	.22**
Painting Baseline	.02	-.36**
Painting No Compensation	-.02	-.27**

Note. Given the large number of analyses that could be run to assess individual differences, and in order to reduce Type I errors, we use a $p < .01$ criteria in reporting these results. All other possible correlations had $p > .01$. See Table 1 for information about demographic scaling.

*Indicates significance at $p < .01$.

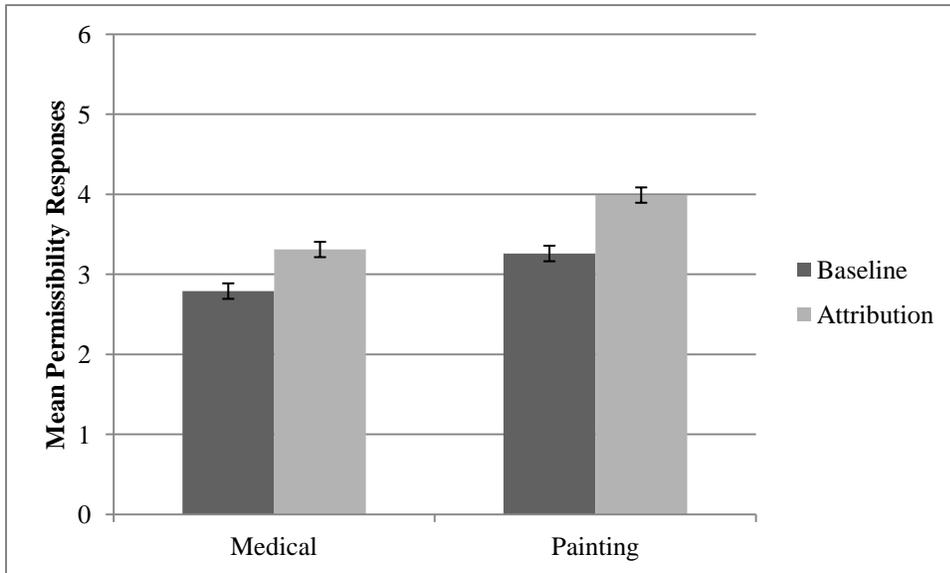
**Indicates significance at $p < .001$.

Figure 1

Interaction Between Scenario and Mitigating Factor Study 1

Note. The figure above displays the interaction between Scenario (Medical vs. Painting) and Mitigating Factor (Baseline vs. Attribution vs. No Compensation vs. Education) for Study 1. Responses to the Attribution item and the No Compensation item were different between scenarios (with participants more likely to say that copying should be allowed in the Painting scenario than the Medical scenario); however, responses to the Baseline and Education items did not differ between scenarios.

Figure 2

Interaction Between Scenario and Mitigating Factor Study 2

Note. The figure above displays the interaction between Scenario (Medical vs. Painting) and Mitigating Factor (Baseline vs. Attribution) for Study 2. Responses to both mitigating factor items were higher for the Painting scenario than the Medical scenario; however, the difference between scenarios is larger for the Attribution item than the Baseline item.

Appendix A

Argument Statements Study 1

1. *Incentives*

Creativity and innovation are very important. We should have intellectual property laws because we value the development and production of creative works and innovative products. These laws serve as a means of *encouraging* creation and innovation by allowing people to profit off of their creations and inventions. Providing an opportunity to profit for creators and innovators with intellectual property laws produces an *incentive* for people to create and innovate.

2. *Natural Rights*

Creativity and innovation are very important. We should have intellectual property laws because we value the insight and effort required to achieve creative works and innovative products. These laws serve as a means of protecting people's inherent, natural rights they are *entitled* to in their creations and inventions. Providing protection for creators and innovators with intellectual property laws protects people's *inherent rights* in their creations and inventions.

3. *Expressive Rights*

Creativity and innovation are very important. We should have intellectual property laws because we value the ability to express and distinguish ourselves in creative works and innovative products. These laws serve as a means of allowing and enabling people to *express* themselves in their creations and inventions. Valuing the opportunity to express oneself with intellectual property laws protects people's ability to express their *identity* creatively and through innovation.

4. *Plagiarism*

Creativity and innovation are very important. We should have intellectual property laws because we value creative works and innovative products. These laws serve as a means of preventing people from *plagiarizing* another person's creation or invention. Protecting creators and innovators with intellectual property laws prevents people from *claiming* another person's creations or inventions as their own.

5. *Creative Commons*

Creativity and innovation are very important. Since we value the continuing development of creative works and innovative products, we want to limit intellectual property laws. With fewer intellectual property rights, people are free to build upon other people's creations and innovations to achieve even more advanced works. Through the free sharing of creative works and innovative products with limited intellectual property laws, we allow for an even greater amount and quality of creation and innovation.

6. *Control*

No argument paragraph.

Appendix B

Vignettes

Painting

Charles O'Malley, an Irish artist trained in collage design, gained fame after developing a newspaper based collage technique. O'Malley premiered his newspaper collage style in his piece titled *Spotlight*, which depicts a view from the top of the famous Cliffs of Moher in Ireland. After traveling to Ireland to study Charles O'Malley and view *Spotlight* in person, an aspiring artist named Randall decides to run a computer analysis of the artwork in order to determine the exact paper, collage glue, and angles of lines used in the art, and makes several painstaking replications of *Spotlight*.

Medical

HealthCorps, a pharmaceutical company, comes up with the idea that it might be possible to protect against West Nile Flu, a disease previously thought to be incurable, with a vaccine. HealthCorps develops and obtains a patent on the chemical structure of a West Nile Flu vaccine. A competing company, Everlife, notices the success of HealthCorps's vaccine, purchases one of the vaccines manufactured by HealthCorps, and does a chemical analysis to develop and manufacture duplicate copies of HealthCorps's.

Appendix C

Argument Statements Study 2

1. *Incentives to create/innovate*

Creativity and innovation are very important to society. We have intellectual property laws to *incentivize* people to produce creative works and innovative products. Intellectual property laws provide this incentive because intellectual property rights allow people to profit off of their creations, thus encouraging people to spend more time, effort, and resources on artistic and inventive endeavors.

The Constitution provides Congress with the authority to create intellectual property protection in order to *encourage* authors and inventors to develop new written work, arts, and inventions. Thomas Jefferson famously wrote that the Constitution provides inventors with the “exclusive right to the profits arising from an invention” so that people will invent more “new and useful devices.”

There are many examples of how intellectual property law incentivizes creation and innovation. For example, Thomas Alva Edison, inventor of the incandescent light bulb, movie camera, and many other inventions, received intellectual property protection on his inventions only because the prospect of such rights had given him the incentive to invent in the first place. Similarly, intellectual property law gave the great American author Mark Twain the necessary incentives to write *The Adventures of Tom Sawyer*, *The Adventures of Huck Finn*, and many other books, because Twain knew that intellectual property protection would allow him to profit off his works.

Today, intellectual property laws still provide authors, artists, and inventors with the necessary incentives to continue to innovate. Pharmaceutical companies would not develop new

drugs, musicians would not write new songs, and authors would not write new books without knowing that intellectual property rights will allow them to profit off of their creative efforts.

2. *Natural Rights*

Protecting creators' and inventors' rights are very important to society. We have intellectual property laws because people are morally *entitled* to rights in their creative works and innovative products. Intellectual property laws serve as a means of protecting people's inherent, natural rights in artistic and inventive creations that are produced as a result of the creator's own labor and effort.

The Constitution provides Congress with the authority to create intellectual property protection in order to protect authors' and inventors' *inherent* rights in their new written work, arts, and inventions. Thomas Jefferson famously wrote that the Constitution provides inventors with the "exclusive right to their invention" because people who invent are entitled "to the fruits of their work."

There are many examples of how intellectual property law protects natural rights in creation and innovation. For example, Thomas Alva Edison, inventor of the incandescent light bulb, movie camera, and many other inventions, received intellectual property protection on his inventions only because they were the product of his creative effort. Similarly, intellectual property law gave the great American author Mark Twain the exclusive rights to *The Adventures of Tom Sawyer*, *The Adventures of Huck Finn*, and many other books, because Twain put the time and effort into creating these works.

Today, intellectual property laws still provide authors, artists, and inventors with the morally appropriate protection for innovation. Pharmaceutical companies that develop new drugs, musicians who write new songs, and authors who write new books are all protected by intellectual property rights because these achievements are the result of their creative efforts.

3. *Expressive Rights*

Protecting creators' and inventors' rights are very important to society. We have intellectual property laws because we value people's ability to express their *identity* in creative works and innovative products. Intellectual property laws serve as a means of enabling people to distinguish themselves in their artistic and inventive endeavors, allowing greater human flourishing and cultural development.

The Constitution provides Congress with the authority to create intellectual property protection in order to protect authors' and inventors' *expressive* rights in their new written work, arts, and inventions. Thomas Jefferson famously wrote that the Constitution provides inventors with the "exclusive right to their invention" because people who invent are entitled "to the expression through their work."

There are many examples of how intellectual property law protects expressive rights in creation and innovation. For example, Thomas Alva Edison, inventor of the incandescent light bulb, movie camera, and many other inventions, received intellectual property protection on his inventions only because he was expressing himself through these inventions. Similarly, intellectual property law gave the great American author Mark Twain the exclusive rights to *The Adventures of Tom Sawyer*, *The Adventures of Huck Finn*, and many other books, because Twain was expressing his personality through these works.

Today, intellectual property laws still enable authors, artists, and inventors to express themselves through innovation. Pharmaceutical companies that develop new drugs, musicians who write new songs, and authors who write new books are all protected by intellectual property rights because they are expressing themselves by their creative efforts.

4. *Plagiarism*

Preventing false claims to creativity and innovation is very important to society. We have intellectual property laws to prevent people from *plagiarizing* another person's creative works or innovations. Intellectual property laws serve as a means of preventing people from dishonestly claiming another person's artistic and inventive creations as their own work.

The Constitution provides Congress with the authority to create intellectual property protection in order to prevent people from *unethically* stating that they achieved someone else's new written work, arts, and inventions. Thomas Jefferson famously wrote that the Constitution provides inventors with the "exclusive right to their invention" because other people should not "claim what is another's as their own."

There are many examples of how intellectual property law prevents plagiarism of creation and innovation. For example, Thomas Alva Edison, inventor of the incandescent light bulb, movie camera, and many other inventions in his first industrial research laboratory received intellectual property protection on his inventions so that others could not claim to have been their inventor. Similarly, intellectual property law stopped other people from stating that they wrote *The Adventures of Tom Sawyer*, *The Adventures of Huck Finn*, and many other books by the great American author Mark Twain.

Today, intellectual property laws still preclude people from claiming to be authors, artists, and inventors if they are not. Pharmaceutical companies that develop new drugs, musicians who write new songs, and authors who write new books are all protected by intellectual property rights so that people cannot falsely misclaim other peoples' creative efforts.

5. *Creative Commons*

Creativity and innovation are very important to society. We have limits on intellectual property laws to free people to build upon others' artistic and inventive endeavors to achieve even more advanced works. Through more *open* sharing of creative works and innovative

products by limiting intellectual property laws, we allow for an even greater amount and quality of creation and innovation.

The Constitution provides Congress with the authority to restrain intellectual property protection in order to promote a strong creative *commons* so that authors and inventors develop new written work, arts, and inventions. Thomas Jefferson famously wrote that the Constitution provides inventors with “open rights for an invention” so that people will invent more “new and useful devices.”

There are many examples of how limiting intellectual property law promotes creation and innovation. For example, Thomas Alva Edison, inventor of the incandescent light bulb, movie camera, and many other inventions, was able to build upon the work of others to achieve his inventions only because other people’s intellectual property rights were weak. Similarly, the great American author Mark Twain had the opportunity to write *The Adventures of Tom Sawyer*, *The Adventures of Huck Finn*, and many other books, because Twain knew that other people’s intellectual property protection did not block his works.

Today, limiting intellectual property laws still provide authors, artists, and inventors with the open creative space to continue to innovate. Pharmaceutical companies would not develop new drugs, musicians would not write new songs, and authors would not write new books if strong intellectual property rights might block them from their creative efforts.

6. *Control*

No argument paragraph.