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All-Caps

Yonathan A. Arbel
University of Alabama - School of Law, yarbel@law.ua.edu

Andrew Toler
University of Alabama - University of Alabama, School of Law, Students, andrew.toler@law.ua.edu

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YONATHAN A. ARBEL & ANDREW TOLER*

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ABSTRACT

A hallmark of consumer contracts is long blocks of capitalized text. Courts and legislators believe that such "all-caps" clauses improve the quality of consumer consent and thus they will often require the capitalization of certain key terms in consumer contracts. Some of the most important terms in consumer contracts—warranty disclaimers, liability releases, arbitration clauses, and automatic subscriptions—will be enforced only because they appeared in all-caps in the contract.

This Article is the first to empirically examine the effectiveness of all-caps with respect to the quality of consumer consent. Using an experimental methodology, the Article finds that all-caps is significantly harmful to older readers while failing to show any appreciable improvement over regular print for others. We collect evidence from standard form agreements used by America's largest companies and find that, despite—and perhaps because—all-caps is ineffective, it is widely used in nearly three-quarters of consumer contracts. Based on these findings and other evidence reported here, this Article lays out the dangers and risks of continued reliance on all-caps and calls for abandoning all-caps.

Draft comments welcome at yarbel@law.ua.edu

Or anonymously through this link.

* Assistant Professor of Law, University of Alabama Culverhouse School of Law; J.D. Candidate, University of Alabama Culverhouse School of Law. IRB Approval 18-OR-408. We would like to thank Oren Bar-Gill, Hillel Bavli, Shawn Bayern, Omri Ben Shahar, Uri Beonliel, Chris Bradley, Kevin Davis, Shahar Dillbary, Meirav Furth-Matzkin, Robert Hillman, Dave Hoffman, Nancy Kim, Ben McMichael, Mike Pardo, and Steve Shavell for helpful comments. We are also thankful to participants in the American Law & Economics Conference, Conference on Empirical Legal Studies, and Contracts Conference XIV. For research support, we thank Bret Linley, McGavin Brown, and Victoria Moffa.

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INTRODUCTION

All-caps—blocks of fully capitalized text—is a hallmark of modern contracts.[1] Why this is the case, however, is not well-understood. The investigation presented here suggests that all-caps is a deeply misguided and unreflective instance of what Robert Hillman called "contract lore," a set of ungrounded beliefs that are passed on through the generations of lawyers.[2]

One of the deepest problems in contract law is the "no-reading problem.'[3] While consumers are cognizant of certain contractual terms—such as price and quantity—they are often ignorant of the less salient terms found in the fine print of their contracts.[4] As a result, firms can safely tuck oppressive terms in the fine print—onerous charges, liability waivers for wrongful harms, automatically renewing subscription periods, limitations of representations, arbitration provisions, and damages caps. These practices

[1] *See e.g.*, *Warranties and Online Sales*, AMERICAN BAR ASSOCIATION https://www.americanbar.org/groups/business_law/migrated/safeselling/warranties/ (Sept. 26, 2016), (noting the scope of the practice)).

[2] *See generally* Robert A. Hillman, *Contract Lore*, 27 J. CORP. L. 505 (2002).

[3] Ian Ayres & Alan Schwartz, *The No-Reading Problem in Consumer Contract Law*, 66 STAN. L. REV 545 (2014). See also Yanees Bakos, Florencia Marotta-Wurgler & David R. Trossen, *Does Anyone Read the Fine Print? Consumer Attention to Standard Form Contracts*, 43 J. LEGAL STUD. 1 (2014) (providing empirical data that virtually no consumers read End Users License Agreements); Shmuel I. Becher & Esther Unger-Aviram, *The Law of Standard Form Contracts: Misguided Intuitions and Suggestions for Reconstruction*, 8 DEPAUL BUS. & COM. L.J. 199, 206 (2010) (providing empirical data that most consumers are not likely to read contracts ex ante); Clayton P. Gillette, *Rolling Contracts as an Agency Problem*, 2004 WIS. L. REV. 679, 680 (2004) ("[C]ommentators agree that buyers, or the vast majority of them, do not read the terms presented to them by sellers."); Lewis A. Kornhauser, Comment, *Unconscionability in Standard Forms*, 64 CAL. L. REV. 1151, 1163 (1976) ("In general the consumer will not have read any of the clauses, and most will be written in obscure legal terms."). For the formatting of conspicuous disclosures generally, see Mary Beth Beazley, *Hiding in Plain Sight: "Conspicuous Type" Standards in Mandated Communication Statutes*, 40 J. LEGIS. 1, 1–2 (2014).

[4] *See* Eyal Zamir, *Contract Law and Theory: Three Views of the Cathedral*, 81 U. CHI. L. REV. 2077, 2102–03 (""outside of the law-and-economics community, most people would quite confidently say . . . that hardly a soul reads standard-form contracts.").

are deeply problematic, as hidden terms pull the consent rug from under the contracting parties' feet.[5]

A common solution to the no-reading problem is to require the conspicuous display of important terms. If consumers do not read the fine print, the solution is to make the print less fine.[6] Making text conspicuous is believed to increase the quality of consumer consent by signaling the importance of the underlying text,[7] and by making it more accessible.[8] Most famously, the UCC requires that warranty waivers "must be by a writing and conspicuous."[9] The UCC is joined by a legion of other statutes, which incentivize the conspicuous display of information by declining to enforce key terms that are not conspicuously displayed.[10]

[5] Ayres & Schwartz *supra* note 3, 549-50 (discussing attempts to address the no-reading problem).

[6] *See* Richard A. Epstein, *Contract, Not Regulation: UCITA and High-Tech Consumers Meet Their Consumer Protection Critics*, *in* CONSUMER PROTECTION IN THE AGE OF THE 'INFORMATION ECONOMY' 205, 227 (Jane K. Winn ed., 2006) ("It seems clear that most consumers . . . never bother to read these terms anyhow: we . . . adopt a strategy of 'rational ignorance' to economize on the use of our time."); Alleecia M. McDonald & Lorrie F. Cranor, *The Cost of Reading Privacy Policies*, 4 I/S 543, 563–64 (2008) (estimating the time required to read privacy policies at 244 hours per year per consumer).

[7] Bakos, *supra* note 3, at 2 (noting that the use of fine print "may seem unimportant").

[8] The conspicuousness strategy involves an implicit compromise, as highlighting one term means that other terms would appear less important in comparison. *See* Sidney DeLong, *Jacques of All Trades: Derrida, Lacan, and the Commercial Lawyer*, J. LEGAL EDUC. 131 (1995) (noting that conspicuousness is a relative quality of the text). *See also* Regulation Z, 12 C.F.R. § 226.1(b) (2011) (mandating conspicuous disclosure of terms and costs of credit, at the expense of other contractual terms, in order to promote notice to these aspects of the transaction).

[9] U.C.C. § 2-316 (AM. LAW INST. & UNIF. LAW COMM'N AMENDED 2011).

[10] *See e.g.*, CAL. BUS. & PROF. CODE §22577(a)–(b) (West 2004) (A link to privacy policy must appear "in capital letters equal to or greater in size than the surrounding text."), FED. TRADE COMM'N, .COM DISCLOSURES: HOW TO MAKE EFFECTIVE DISCLOSURES IN DIGITAL ADVERTISING 6 (2013), https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-staff-revises-online-advertising-disclosure-guidelines/130312dotcomdisclosures.pdf [hereinafter FTC EFFECTIVE DISCLOSURES] (requiring conspicuous disclosure in advertisements). See also *infra* notes 45-46.

All-caps is a widely endorsed method of making a term conspicuous and thus rendering it enforceable.[11] Courts, legislators, and consumer agencies take capitalized text to be strong evidence, often dispositive, that the text was read and understood by the consumer. As a result, courts will enforce some of the most onerous and demanding terms in consumer contracts based on the sole fact that this term was written in all-caps.[12]

Illustration: *All-Caps*

DISCLAIMER OF FURTHER WARRANTY

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, EXCEPT AS SET FORTH ABOVE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE PRODUCT CONTAINED HEREIN. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF ANTICIPATED PROFITS) IN CONNECTION WITH THE RETAIL PURCHASER'S USE OF THE PRODUCT.

[11] Some statutes outright define conspicuous as "type in boldfaced capital letters". LA. REV. STAT. ANN. § 9:1131.2 *See also* FLA. STAT. ANN. § 718.103 . Sometimes, legislators set language requirements that employ all-caps. *See, e.g.*, 22 NYCRR 208.6, ("The summons shall have prominently displayed at the top thereof the words CONSUMER CREDIT TRANSACTION and the following additional legend or caveat printed in not less than 12-point bold upper case type: IMPORTANT!! YOU ARE BEING SUED!! THIS IS A COURT PAPER--A SUMMONS! DON'T THROW IT AWAY!! TALK TO A LAWYER RIGHT AWAY!! PART OF YOUR PAY CAN BE TAKEN FROM YOU (GARNISHED). . . .IF YOU CAN'T PAY FOR YOUR OWN LAWYER, BRING THESE PAPERS TO THIS COURT RIGHT AWAY. THE CLERK (PERSONAL APPEARANCE) WILL HELP YOU!!"). For enforcement in the courts. *See also* Bluewater Trading LLC v. Fountaine Pajot, S.A., No. 07-61284-CIV, 2008 WL 895705, at 5 (S.D. Fla. Apr. 2, 2008); Brosville Cmty. Fire Dep't, Inc. v. Navistar, Inc., 4:14–cv–9, 2014 WL 7180791, at 4–5 (W.D. Va. Dec. 16, 2014). Disclaimers have been considered conspicuous where "the excluding language [itself was] in larger type" or capitalized. Armco, Inc. v. New Horizon Dev. Co. of Va., Inc., 229 Va. 561, 331 S.E.2d 456, 460 (1985) (citing Va. Code § 8.1–201(10)); *Young*, 1994 WL 506403, at 3 (relying on, albeit not citing, Va. Code § 8.1–201(10)). Hammond–Mitchell, Inc. v. Constr. Materials Co., CL05000082–00, 2008 WL 8200731, at 5–6 (Va. Cir. Ct. Apr. 28, 2008) ("ConRock used the correct differentiating type-all capitals on the reverse side of the delivery receipt which was referred to on the front of the ticket[.]"); Rorick v. Hardi N. Am. Inc., No. 1:14-CV-204, 2016 WL 777575, at 2 (N.D. Ind. Feb. 29, 2016);Lease Acceptance Corp. v. Adams (2006) 724 N.W.2d 724, at 732 272 Mich.App. 209 (enforcing a forum selection clause, in part, because it was "printed entirely in conspicuous capital letters").

[12] *See, e.g.*, Bruni v. Didion, 160 Cal. App. 4th 1272, 1293, 73 Cal. Rptr. 3d 395, 413 (2008), as modified (Mar. 24, 2008) (finding that an arbitration clause was surprising because it was not capitalized).

A natural question is whether all-caps is effective—is it truly the case that capitalization of text improves the quality of consumer consent? All-caps is, after all, a vestige of the days of the typewriter where other forms of highlighting text were unavailable.[13] Surprisingly, despite the venerable legacy of this contract lore, this question was never really studied. Instead, courts and legislators have relied on speculation and intuition.

Admittedly, this question may seem too pedestrian, almost technical; but as Duncan Kennedy argued, the stakes of "merely technical" questions in contract law can be very significant.[14] Consider then a wrongful death case where the court will deprive the family compensation only because the contractual waiver appeared in all-caps.[15] If all-caps does not have the effects attributed to it by courts, this would mean that courts have been erroneously assuming consent where there was none, enforcing onerous terms in myriad cases, and depriving consumers of recourse based illusory consent.[16] The terms that need to be conspicuous are those that contracts and legislatures view as especially important, so enforcing them has particularly acute consequences for consumer welfare. Worse, if it turns out that all-caps is effective in *hiding* meaning, then this would suggest that courts have given their blessing to one of the most common anti-consumer practices.[17]

Part I of this Article offers the necessary background regarding the practice of all-caps. One key finding is that the all-caps practice, despite its reach and significance, is not based on any evidence. Courts and legislators adopted this policy because they believe it prevents surprise and improves

[13] *See* Mark Sableman, *Typographic Legibility: Delivering Your Message Effectively*, 17 SCRIBES J. LEG. WRIT. 9, 9-10 (2017).

[14] Duncan Kennedy, *The Political Stakes in "Merely Technical" Issues of Contract Law*, 19 EUROPEAN REV. PRIVATE L. 7 (2001)

[15] *See e.g.*, Enserch Corp. v. Parker, 794 S.W.2d 2 (Tex. 1990) (requiring conspicuous indemnity language)

[16] On the goals of conspicuousness, see infra notes 45-47 and the accompanying text. It is well understood that actual assent to all terms of the contract may be unwieldy, but many believe that contract law should demand an affirmative showing of consent to material terms. *See* Nancy Kim, *Clicking and Cringing*, 86 OR. L. REV. 797, 800-05 (2008).

[17] *See also* Beazley, *supra* note 3, at 2 (arguing that firms intentionally obfuscate disclaimers); Lauren E. Willis, *Performance-Based Consumer Law*, 82 U. CHI. L. REV. 1309, 1311 (2015) (arguing that firms hamstring the disclosure project through the framing of disclosures).

consent, but this belief is not based on any hard evidence. In fact, the limited evidence that existed when this practice adopted was mostly negative. In particular, psychologists started investigating the effects of different typefaces in the 1930s, and found in a series of studies that it impedes reading speed.[18] Admittedly, these studies are limited; partly because they are dated and did not explore legal texts. And partly because the focus on reading speed may have some positive effects, as it may theoretically invite more careful deliberation. Still, that was the best empirical evidence in existence, and legal doctrine overlooked it. The doctrine also proved robust to growing expressions of skepticism of this practice among some practitioners, judges, officials,[19] and a few scholars.[20]

Part II moves to present evidence on the pervasiveness of all-caps "in the wild." To this end, we collected the standard form contracts of 500 of the most popular consumer companies in the US—companies like Amazon and Uber—and analyzed them. These forms are the basis of hundreds of millions of individual contracts between consumers and these large companies. We use this database to generate the first-ever evidence of the pervasiveness of long blocks of text in consumer contracts; we find that over three-quarters of these contracts (77%) contain at least one all-caps clause.

[18] Miles A. Tinker & Donald G. Paterson, *Influence of Type Form on Speed of Reading*, 12 J. APPLIED PSYCHOL. 359 (1928). *See also* Miles A. Tinker & Donald G. Paterson, *The Effect of Typographical Variations Upon Eye Movement in Reading*, 49 J. EDUC. RES. 171, 181 (1955); Miles A. Tinker, *Prolonged Reading Tasks in Visual Research*, 39 J. APPLIED PSYCHOL. 444 (1955). Some work has also studied the visibility of capital letters from a distance, from a distance, *see* MILES A. TINKER, LEGIBILITY OF PRINT, 33-35, 58-59, but such an investigation is tangential to our purposes here.

[19] *See e.g.*, In re Bassett, 285 F.3d 882, 886 (9th Cir. 2002); OFFICE OF INV. EDUC. & ASSISTANCE, U.S. SEC. & EXCH. COMM'N, A PLAIN ENGLISH HANDBOOK: HOW TO CREATE CLEAR SEC DISCLOSURE DOCUMENTS 72 (1998) (proposing that text will not be written in all-caps).

[20] *See e.g.*, Beazley, *supra* note 3, at 2; Ruth Anne Robbins, *Painting with Print: Incorporating Concepts of Typographic and Layout Design into the Text of Legal Writing Documents*, 2 J. ASS'N LEGAL WRITING DIRECTORS 108, 127 (2004).

Part III moves to test the effectiveness of these omnipresent all-caps clauses in lab settings which include approximately 570 participants.[21] In our primary experiment, we test the effect of all-caps on the quality of consent. If all-caps clauses have any behavioral effect, then respondents should be able to recall terms better when they are presented in all-caps than when the same terms are presented in normal print.[22] To test this hypothesis, we presented subjects with a detailed contract with multiple paragraphs, adapted from a common consumer contract for online music services. In the control group, the entire contract was written in normal print, which we dub here as "low-caps."[23] The treatment group saw the same contract, with one difference: a single paragraph was in all-caps. We then asked subjects about their obligations under the contract and evaluated the accuracy of their responses.

The evidence shows that *all-caps fails to improve consumer consent in any appreciable manner*.[24] Indeed, we find statistically significant evidence that *all-caps strongly undermines the quality of consent for older readers.* For illustration, respondents over 55 were *29 percentage points* more likely to misunderstand their obligations when the paragraph was capitalized than their age peers who read the paragraph in low-caps. These findings suggest that all-caps may be harmful to older readers and likely fails to improve consent for all other readers.

We then conduct several exploratory studies in Part IV. We find some evidence that all-caps is not helpful even under time pressure; that consumers

[21] Overall, for all of our studies we recruited almost 1,000 respondents; our sample size follows the standard in similar studies. *Cf.*, Meirav Furth-Matzkin and Roseanna Sommers, *Consumer Psychology and the Problem of Fine Print Fraud*, (Forthcoming, STAN. L. REV.) (N=300 in largest study and N=100 in smallest); Tess Wilkinson-Ryan, *Do Liquidated Damages Encourage Breach?*, 108 MICH. L. REV. 633 (2010) (N=100); Wilkinson-Ryan, *infra* note 83, (N=208).

[22] We also consider, and reject, the possibility that all-caps is a signal of worse contract quality.

[23] We use the term low-caps to highlight that we are using standard English grammatical rules which include some capitalization; e.g., in names and the beginning of sentences. The appendix provides the different contracts presented to the parties.

[24] As will be explained, this conclusion is *not* based on failure to reject the null hypothesis, rather, on a non-inferiority test of statistical significance. *See infra* notes 99-101.

consider all-caps more difficult to read; and that all-caps may take longer to read. The potentially negative effect on reading times is consistent with earlier work in psychology that found that reading capitalized blocks of text takes roughly 13% longer than non-capitalized text.[25]

We also tested whether it is possible to improve consumer consent using alternative means. To this end, we tested the effects of three forms of highlighting text relative to low-caps. We found strong evidence that the highlighting of a single line of text using boldface has a considerable positive effect on outcomes. We interpret this finding as suggesting that some forms of disclosure can be highly effective if they are properly designed. The proper design, however, requires close consideration and further experimentation is necessary.

In interpreting these findings and considering their policy implications, a few caveats are important. First, we do not find—nor do we argue—that capitalization is always ineffective. We readily admit that a sufficiently motivated firm or actor might be able to find a combination of capitalization and formatting that would be effective.[26] Our findings and conclusions should be interpreted as suggesting that standard usage of blocks of all-caps text is ineffective and may, indeed, be harmful.

Second, lab experiments are subject to some known limitations. To minimize these concerns, we took special steps to ensure that we only recruited subjects from the US and that subjects were actually engaging with our experiments. To that end, we used a special service that collects the 'digital fingerprints' of participants and uses geolocation; we implemented a number of attention checks; and collected a sample that, with a few differences, represents the general US population.[27] Still, external validity is always a concern, and it should be emphasized that we are not proposing here any specific intervention. We seek to discover whether all-caps has its

[25] *See* Miles A. Tinker & Donald G. Paterson, *Influence of Type Form on Speed of Reading*, 12 J. APPLIED PSYCHOL. 359 (1928).

[26] While capitalization is rare in the marketing context, a point we emphasis throughout, one sometimes finds capitalization in the context of brand logos, such as Pepsi's. *See* Tony Stark, *Pepsi Logo*, LOGASTER (Dec. 16, 2011), https://www.logaster.com/blog/pepsi-logo//.

[27] On MTurk, its benefits, and its limitations, see infra notes 82-83 and 95-98 and accompanying text.

advertised effects, despite the lack of any previous supporting evidence. Even if lab experiments are limited, however, it is important to remember the claim that all-caps supporters endorse. They implicitly claim that all-caps has such strong behavioral effects that it would be justified to disclaim liability for a crippling accident based on capitalization. Strong claims require strong evidence; the limits of the lab notwithstanding.

Third, as we test recall, reading speed, and subjective feeling of difficulty, we do not measure other potential justifications for all-caps.[28] Fuller famously argued that formal requirements could be helpful in providing evidentiary, cautionary, and channeling functions,[29] and one might seek to justify all-caps on the basis of such and other non-behavioral effects.[30] Now, these reasons were never carefully articulated, so it is uncertain that these reasons are coherent or persuasive. It is not even clear how one might test these presumed effects and if so, in what direction they might work. But most significantly, there is a strong normative case against non-behavioral justifications in this context. All-caps is used to show meaningful consent to especially onerous terms that would not be enforced but-for the use of all-caps. If one wants to enforce a disclaimer that prevents the victim of a medical accident coverage only because the term appeared in all-caps, this reason must be especially compelling. We are hard-pressed to find such a compelling reason that is divorced from any behavioral effect.

The results of this study, explored in Part V, carry implications for both current legal policies and the future of disclosure. In terms of current policies, we believe that there is enough evidence to abandon the reliance on all-caps. We base our recommendation in part on the force of the positive

[28] Consistent with these metrics, the FTC, for example, emphasizes that the goal of conspicuous disclosure in online advertising is consumer behavior, not formal notice. FTC EFFECTIVE DISCLOSURES, *supra* note 10, at 6 ("Whether a disclosure [is clear and conspicuous] is measured by its performance–that is, how consumers actually perceive and understand the disclosure within the context of the entire ad"). The UCC emphasizes the prevention of surprise to the consumer and requires special clear language to be used. UCC § 2-316, cmt 1.

[29] Lon L. Fuller, *Consideration and Form*, 41 COLUM. L. REV. 799, 800-801 (1941)

[30] In the UCC, context, courts have taken a more formalistic approach. Stephen E. Friedman, *Text and Circumstance: Warranty Disclaimers in A World of Rolling Contracts*, 46 ARIZ. L. REV. 677, 688 (2004)

evidence presented here, which shows that all-caps is harmful to older readers while not appreciably improving outcomes over normal print. We also base our recommendation on the negative evidence we uncover in our analysis of the case law—showing that there was never any contrary evidence for this longstanding legal practice.[31] Most damning is the observation that in designing marketing materials, where firms have an interest in persuading consumers, the use of all-caps is effectively absent.[32] Similarly, some evidence shows that when firms use their contracts as part of their branding, they shy away from all-caps, suggesting that firms themselves do not consider this method effective.[33]

Future discussions in disclosure law should focus on better alternatives to all-caps. Here, there is cause for optimism—we find that certain interventions can have a large impact on consumer consent. However, we do not advocate any specific policy, and our findings should only be interpreted as undermining the theory of all-caps.

I. CONSPICUOUS DISCLOSURE AND ASYMMETRIC INFORMATION

A. The Problem of Uninformed Contracting

Contracts are based on consent.[34] A recalcitrant problem in contract law, however, is that few consumers actually read the fine print, thus compromising their consent.[35] Inattention to the fine print encourages firms to offer inferior terms because these terms will cut costs while not impacting

[31] *See infra* Part I.

[32] *See e.g.,* ALEXANDER HIAM, MARKETING FOR DUMMIES, at 133 (4th ed, 2014) ("[A]void long stretches of copy set in all caps.")

[33] David A Hoffman, *Relational Contracts of Adhesion*, U. CHI. L. REV. 1395 (2018).

[34] *See* Omri Ben-Shahar, CONTRACTS WITHOUT CONSENT: EXPLORING A NEW BASIS FOR CONTRACTUAL LIABILITY, 152 U. PA. L. REV. 1829 (2004)

[35] Ayres & Schwartz *supra* note 3.

demand.[36] Worse, firms will have an incentive to actively make terms harder to read—i.e., "shroud" them—even in competitive markets..[37]

To deal with consumer mistakes concerning the terms of their transactions, scholars advance several strategies. The dominant approach is the promotion of mandatory disclosures.[38] As Professor Bar-Gill, one of the drafters of the new Restatement of Consumer Contracts, argued: "disclosure mandates should be one of the main regulatory responses to the problem of consumer misperception."[39] Similarly, Professor Sunstein argues that "[p]roperly designed disclosure requirements can significantly improve the operation of markets, leading consumers to make more informed decisions."[40] Proponents of disclosure often use the Truth in Lending Act (TILA) as an exemplar of successful smart disclosure.[41] On the other hand, there is a growing movement that is disillusioned with the disclosure project. Ben-Shahar and Schneider, two of the leaders of this camp, argue that "Mandatory disclosure may be the most common and least successful regulatory technique in American law."[42] They consider TILA to be a "sour

[36] *See, e.g.*, Ayres & Schwartz, *supra* note 3, at 563 (If consumers are uninformed, "the seller has too little incentive to offer good contracts."). Oren Bar-Gill, *The Behavioral Economics of Consumer Contracts*, 92 MINN. L. REV. 749, 774 (2008); Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims its Sails and Why*, 127 HARV. L. REV. 1593, 1644 (2014). There is also some evidence that firms intentionally sabotage disclosure, to exacerbate the problem. Willis, *supra* note 17, at 1322-1326.

[37] Bar-Gill *supra* note 36, at 744; Xavier Gabaix and David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121Q. J. Econ. 505, 510 (2006); OREN BAR-GILL, SEDUCTION BY CONTRACT: LAW, ECONOMICS, AND PSYCHOLOGY IN CONSUMER MARKETS, 19 (2012).

[38] *See e.g.*, Alan Schwartz & Louis Wilde, *Intervening in Markets on the Basis of Imperfect Information: A Legal and Economic Analysis*, 127 U. PA. L. REV. 630, at 673 (1978) (arguing that the chief remedy for market failures due to asymmetric information should be: "to provide consumers with comparative price and term information")

[39] *Id.*

[40] Cass Sunstein, *Empirically Informed Regulation*, 78 U. CHI. L. REV. 1349, at 1356 (2011)

[41] Epstein, *supra* note 6, at 125, 128.

[42] Omri Ben-Shahar & Carl E. Schneider, MORE THAN YOU WANTED TO KNOW, 3 (2014)

accomplishment."[43] What should come instead is a matter of on-going debate.[44]

While scholars are debating the desirability of disclosure, courts and legislators have adopted what can be called a "conspicuousness policy." The idea is simple: make key parts of the contract salient. This way, one could reduce the cognitive strain, reading time, and cost-ineffectiveness of reading the fine print. To encourage firms to use conspicuous disclosure, courts condition the enforcement of certain key terms on their proper formatting. So, for example, a disclaimer of the implied warranty under the UCC "must be conspicuous" to be enforced.[45] Similar requirements apply to disclaimers of warranties under the Magnuson Moss Act, trial periods in consumer contracts, disclosures of loans, and a variety of other contracts.[46] Courts also sometimes employ open-ended contractual doctrines, such as unconscionability, unilateral mistake, and misrepresentation, to promote the inclusion of conspicuous terms in the fine print.[47]

[43] Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 1 JERUSALEM REV. LEG. STUD. 83, at 86 (2015).

[44] *See e.g.,* Oren Bar-Gill, *Defending (Smart) Disclosure: A Comment on More Than You Wanted to Know*, 11 JERUSALEM REV. LEG. STUD. 75–82 (2014) (arguing for simplified disclosures); Willis (performance-based standards); Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 1 JERUSALEM REV. LEG. STUD. 83, 85 (2015) (reviewing alternatives).

[45] U.C.C. § 2-316(2); Melvin A Eisenberg, *Disclosure in Contract Law*, 91 CAL. L. REV. 1645, 1679 (2003).

[46] 15 U.S.C. § 2303 and 16 CFR 700.; CAL. BUS. & PROF. CODE § 17602(a); 15 U.S.C. § 1632 (Truth in Lending Act's requirement that disclosure must be made "clearly and conspicuously"). *See also* ALA. CODE § 8-19D-2(a) ("it shall be unlawful . . . [to imply in mail solicitation] that the person being solicited has won . . . a prize or purported prize unless the qualifying language appears in print that is clear, easily read, and conspicuous."); K.S.A. 50-903 (liability for failure to hold a sufficient quantity of a produce that is advertised as being on sale, "unless the available amount is disclosed fully and conspicuously"); V.T.C.A., BUS. & C. § 8.204; Dias v. Nationwide Life Ins. Co., 700 F. Supp. 2d 1204, 1216 (E.D. Cal. 2010); Spray, Gould & Bowers v. Associated Internat. Ins. Co., 71 Cal.App.4th 1260, 1272, 84 Cal.Rptr.2d 552 (1999); Hadland v. NN Investors Life Ins. Co., 24 Cal.App.4th 1578, 1586, 30 Cal.Rptr.2d 88 (1994).

[47] E. ALLAN FARNSWORTH, CONTRACTS, 248-49 (2004). § 211 R2K ("Where the other party has reason to believe that the party manifesting such assent would not do so if he knew that the writing contained a particular term, the term is not part of the agreement").

While there is no general theory of what amounts to a conspicuous display of information, all-caps play a dominant, and often dispositive, role among both legislatures and courts.[48] Various state laws explicitly mandate that certain disclosures appear in all-caps.[49] Other types of legislation simply declare all-caps as an acceptable method of making text conspicuous.[50] Courts, similarly, enforce terms only because they appear in all-caps.[51] In *Rottner v. AVG*, a consumer argued that software defect led to the loss of information on his hard drive.[52] The defendant argued that implied warranties were disclaimed. The judge summarily noted that "Here, the [contract] presents the disclaimer in capital letters in section 5c. . . . . Consequently, Rottner's claim for any breach of the implied warranty will be dismissed."[53]

[48] *See e.g.,* FLA. ADMIN. CODE r. 2-18.002 (1996), MINN. STAT. ANN. § 559.21(3), N.Y. GEN. BUS. LAW § 653(1), OHIO REV. CODE ANN. §3121.29 (mandating a block of 3 paragraphs of all-caps in child support orders); 18 DEL. ADMIN. CODE 1405-10.0 (2018); ALA. CODE § 8-26B-10(c).

[49] *See, e.g.*, ALA. CODE § 8-26B-10(c). As noted, there is no generally accepted theory, and some codes use forms without all-caps. *See e.g.,* ALA. CODE § 8-25-2.

[50] U.C.C. § 1-201(b)(10). Note that capitalization is not explicitly mentioned by the UCC for the body of the text.

[51] Sableman, *supra* note 13, at 24 ("courts have generally approved all-uppercase treatments"); Beazley, *supra* note 3, at 8 (noting that "…all caps continues to be interpreted as meeting the standard for 'conspicuous type.'"); Willis, *supra* note 17, at 1349. Some examples include Davis v. LaFontaine Motors, Inc., 719 N.W.2d 890, 895–96 (Mich. App. 2006); Doe v. SexSearch.com, 502 F. Supp. 2d 719 (N.D. Ohio 2007), *aff'd on other grounds*, 551 F.3d 412 (6th Cir. 2008); *Fleming Farms v. Dixie Ag Supply* 631 So. 2d 922 (Ala. 1994); Karr-Bick Kitchens & Bath, Inc. v. Genini Coatings, Inc., 932 S.W.2d 877, 879 (Mo. Ct. App. 1996) ("The language excluding the warranties was written in capitalized letters and was more prominent than the other type on the label. . . . The language thus conformed with the definition of "'conspicuous'"). Perlman 2012 WL 12854876, at *2 (S.D. Fla. Apr. 3, 2012); Walnut Equip. Leasing Co. v Moreno (1994, La App 2d Cir) 643 So 2d 327; Boston Helicopter Charter, Inc. v Agusta Aviation Corp. (1991, DC Mass) 767 F Supp 363.; Potomac Plaza Terraces v QSC Prods., (1994, DC Dist Col) 868 F Supp 346, 26 UCCRS2d 1069.

[52] Rottner v. AVG Techs. USA, Inc., 943 F. Supp. 2d 222 (D. Mass. 2013).

[53] *id* at 232.

There are certain exceptions, but these mostly go to prove the rule.[54] In *Herrera v. First Northern Savings and Loan Association*,[55] the tenth circuit needed to decide whether an interest rate disclosure was "more conspicuous" than other disclosures, as required by the Truth in Lending Act.[56] The court did not find that the APR disclosure met the standard, despite being in all-caps, because more than *thirty other disclosures* in the contract were also in all-caps.[57] Even in this decision and others like it, the court agreed that in principle, all-caps is a mode of making text conspicuous.

Given the centrality of all-caps in legal practice and its social importance, one would expect a large body of supporting evidence. Strikingly, we could not locate *any* empirical support of this policy and only scant theoretical justification.[58] Instead, the evidence is mostly negative. In a series of studies that started in 1928, psychologists generally found negative effects of all-caps on reading speeds, slowing reading by as much as 13%.[59] One reason is that people are less experienced reading all-caps;

[54] Bowdoin v. Showell Growers, Inc., 817 F.2d 1543 (11th Cir. 1987) ("By definition, a post-sale disclaimer is not conspicuous in the full sense of that term because the reasonable person against whom it is intended to operate could not have noticed it before consummation of the transaction."); but see Rinaldi v. Iomega Corp., No. 98C-09-064-RRC, 1999 WL 1442014, at *1 (Del. Super. Ct. Sept. 3, 1999) (finding that language was conspicuous even though the terms were sent along with the packaged item) – or where the all-caps was on the back of the page, see, e.g., Hunt v. Perkins Mach. Co., 352 Mass. 535, 541, 226 N.E.2d 228, 232 (1967) ("[T]he provisions on the back of the order cannot be said to be conspicuous although printed in an adequate size and style of type."); Sierra Diesel, 890 F.2d at 114 (finding capitalization on the back of the page was inconspicuous). But see Roger's Fence, Inc. v. Abele Tractor and Equipment Co., Inc., 26 A.D.3d 788, 809 N.Y.S.2d 712 (4th Dep't 2006) (A clause may still be conspicuous even if on the back of the page and after the transaction if there is a conspicuous notation on the front of the page directing attention to the disclaimer on the back).

[55] 805 F.2d 896 (1986).

[56] *Id.* at 898.

[57] *Id.* at 900.

[58] For a recent review, see Maria Lonsdale, *Typographic Features of Text: Outcomes From Research and Practice*, 48 VISIBLE LANG. 29, 37-40 (2014). *See also* Willis, *supra* note 17, at 1349 (noting the lack of supportive evidence).

[59] *See* Miles A. Tinker & Donald G. Paterson, *Influence of Type Form on Speed of Reading*, 12 J. APPLIED PSYCHOL. 359 (1928). But see Jeremy J. Foster & Margaret Bruce, *Reading Upper and Lower Case on Viewdata*, 13 APPL. ERGON. 145 (1982) (reviewing the evidence and finding no negative effect of all-caps on reading speeds).

another is that all-caps letters lack ascenders and descenders,[60] so that the letters appear more homogenous.[61] While instructive, this body of research leaves much to be desired, as it is focused on non-legal texts and its main finding—slower reading speeds—has ambiguous implications for consumer law. In theory, slower reading could actually improve consumer consent, by giving the consumer more time to reflect on the relevant term.

Among lawyers, all-caps is not commonly discussed—perhaps seeing it as a mere technicality—but those who do, rarely endorse it. A leading textbook on typography for lawyers counsels against the excessive use of all-caps.[62] In a rare decision that adversely remarked on all-caps, Judge Kozinski voiced a strong opposition: "there is nothing magical about capitals," he said; "Lawyers who think their caps lock keys are instant make conspicuous buttons are deluded."[63]

*

Courts and legislatures widely believe that all-caps makes a term conspicuous, thus improving consumer consent. The literature review reveals, however, that this belief has no empirical support. Although all-caps exacts a heavy price from uninformed consumers by enforcing against them especially onerous terms, it rests on speculation alone. We now set out to present the first empirical evidence on all-caps in consumer contracts and their effects on consumer consent.

[60] Robbins, *supra* note 20, at 118-119.

[61] *See* MATTHEW BUTTERICK, TYPOGRAPHY FOR LAWYERS, 202 (2012); Robbins, *supra* note 20.

[62] *See* BUTTERICK, *supra* note 61. *See also* Robbins, *supra* note 20, at 116; Sableman, *supra* note 13, at 9; Bryan A. Garner, *Pay Attention to the Aesthetics of Your Pages*, MICH. B. J. (Mar. 2010), https://www.michbar.org/file/barjournal/article/documents/pdf4article1664.pdf. Cheryl B. Preston, *"Please Note: You Have Waived Everything": Can Notice Redeem Online Contracts?*, 64 AM. U. L. REV. 535, 553 (2015) ("Key sections in wrap contracts are frequently presented in all capital letters, but that does not help."); Beazley, *supra* note 3, at 2.

[63] In re Bassett, 285 F.3d 882, 886 (9th Cir. 2002); OFFICE OF INV. EDUC. & ASSISTANCE, U.S. SEC. & EXCH. COMM'N, A PLAIN ENGLISH HANDBOOK: HOW TO CREATE CLEAR SEC DISCLOSURE DOCUMENTS 72 (1998) (proposing that text will not be written in all-caps).

II. ALL-CAPS IN ACTION: A STUDY OF INDUSTRY PRACTICES

Both casual observation and the caselaw suggest that all-caps provisions are very common in consumer transactions.[64] But how common is very common? While we know that many consumer contracts are liberal with their use of polysyllabic words and difficult, tortured grammatical constructions, we know very little about their formatting.[65] As conspicuousness is ultimately a question of formatting, this gap in our knowledge is troubling. Evaluating the practical importance of all-caps also bears on our standard of proof for their effectiveness; all else equal, the more prevalent they are, the more important it is to verify that they indeed achieve their intended goals.

A.Methodology

To estimate the prevalence of all-caps in practice, we sought to examine various types of common consumer contracts. We report here novel evidence based on the analysis of the standard forms used by 500 of the most popular websites.[66] These forms serve the basis of *hundreds of millions* of individual consumer contracts, as most US consumers have contractual relationships with at least a few of these large firms.

[64] *See, e.g.*, Kelker v. Geneva-Roth Ventures, Inc., 303 P.3d 777, 783 (Mont. 2013) (finding the arbitration clause in a payday loan agreement unconscionable because, *inter alia*, "no bold or capital letters highlight[ed] the arbitration clause"); Mitsch v. General Motors Corp., 833 N.E.2d. 936, 940 (Ill. 2005) (finding the warranty of merchantability disclaimer required under Magnuson-Moss act for the sale of used car conspicuous, even though it did not mention merchantability, because it was "in all capital letters," among other things).

[65] Uri Benoliel & Shmuel I. Becher, *The Duty to Read the Unreadable*, 60 B.C. L. REV. (forthcoming 2019); Michael Rustad & Thomas Koenig, *Wolves of the World Wide Web: Reforming Social Networks' Contracting Practices*, 49 WAKE FOREST L. REV. 1431, 1437 (2014).

[66] The data was collected and generously shared by Uri Benoliel and Shmuel Becher and forms the basis of their article Uri Benoliel & Shmuel I. Becher, *The Duty to Read the Unreadable* 60 BOS. COLL. L. REV. (Forthcoming, 2019). The collection procedure is detailed there.

The selection of the firms was made on the basis of the Alexa Top Sites web service, which collects data on the most visited websites[67] and is widely considered to be a reliable measure.[68] The sites in the sample include household names such as Google, Facebook, Uber, and Amazon. The contracts themselves are wrap contracts, which structure the relationship between the firm and the consumer in relation to the usage of the website.

To analyze these contracts, we developed a script that algorithmically detected the case of words, sentences, paragraphs, and headers.[69] The script counted all instances of a letter being capitalized, and attempted to classify capitalization at the word, sentence, paragraph, and header level. One challenge in this respect is that there is no unique way to identify headers–or even paragraphs. The script defines a header as a sentence lacking a period. Capitalization of a paragraph was defined as a paragraph containing over 80% of its content in uppercase.

B. Findings

Table 1 summarizes the main findings from the case analysis of the contracts:

[67] *See Alexa Top Sites*, AMAZON, https://aws.amazon.com/alexa-top-sites/ (last visited Mar. 1, 2019). The ranking itself is based on a combination of unique visitors and the number of pageviews, per visitor. *See How are Alexa's traffic rankings determined*?, AMAZON, https://support.alexa.com/hc/en-us/articles/200449744 (last visited Mar. 9, 2019).

[68] Joel R. Reidenberg et al., *Disagreeable Privacy Policies: Mismatches Between Meaning and Users' Understanding*, 30 BERKELEY TECH. L.J. 39, 54 (2015) ("Alexa.com [is] the most prominent measurement company for web traffic data."); Arjun Thakur et al., *Quantitative Measurement and Comparison of Effects of Various Search Engine Optimization Parameters on Alexa Traffic Rank*, 26 INT'L J. COMPUTER APPLICATIONS 15, 15 (2011); ("Alexa Traffic Rank is the most popular website traffic measurement unit").

[69] The script uses Python's library "Docx" which allows interaction with Word documents and classifies words, sentences, and paragraphs.

Table 1: Analysis of Capitalization in the Standard Form Contracts

Attribute	Capitalized	All	Ratio
Words	225 973	2 523 251	8.9%
Sentences	6706	101 140	6.6%
Paragraphs	2388	38 614	6.2%
Headers	3621	20 795	17.4 %
At least one capitalized paragraph	386	500	77.2 %

As Table 1 shows, the great majority (~77%) of these contracts have at least one paragraph that is fully capitalized. The use of capitalized headers is also quite frequent, with 17.4% of all the headers formatted in all-caps.[70] Contract drafters will also capitalize certain key terms and names, so we find that roughly 9% of the words in these contracts are capitalized.

Overall, these findings demonstrate that capitalization is very common in practice. In interpreting these results, it is important to bear in mind that most American adults are a party to many of these contracts, which include the contracts of firms such as Facebook, Amazon, Dell, and Uber. During the collection of the contracts, these websites had 10 million *unique* visitors.[71] Hence, these 500 form contracts represent *hundreds of millions* of individual contracts affecting the lives of most American adults. Additionally, the use of capitalization in EULAs is not likely to be unique to online contracts; if anything, the online format permits more formatting opportunities than print contracts.[72] Finally, it is remarkable how pervasive all-caps are in legal texts relative to any other type of text. In marketing

[70] Note, however, that there is no unique way to define headers and paragraphs, so this estimate may be both under- and over-inclusive. We ran a verification analysis by hand and found the script to be generally accurate.

[71] *See* Benoliel & Becher, *supra* note 66.

[72] *See* Sableman, *supra* note 13, at 9-10.

materials—where firms have a monetary incentive to increase comprehension of their messaging—all-caps are rarely used.[73]

III. ALL-CAPS AND CONSUMER CONSENT: EXPERIMENTAL ANALYSIS

Considering the legal and practical importance of all-caps, it becomes critical to know whether this mode of intervention in consumer contracts succeeds in its stated goal of improving consumer consent. Testing the effectiveness of the all-caps theory requires both a clear grasp of how conspicuousness might improve the quality of consent and a clear methodology that controls for the many potential confounders.

Courts have not expounded on why they believe all-caps improves consent; instead, they summarily link all-caps to the prevention of surprise.[74] Trying to trace the link opens a few possibilities. First, it is possible that conspicuous language helps the consumer to economize attention. The conspicuous formatting would indicate to the consumer where she should spend most of her "attention budget," because the terms are most important. This possibility depends on *contrast*, so that conspicuousness is the quality of the term's visible difference from other parts of the text. Another possibility is that conspicuous formatting improves the readability of the text; a larger font type reduces eye strain and highlights letter structure or simply draws attention more effectively.[75] A third possibility is that all-caps acts as a "fire siren"—it doesn't make it easier to read or understand, but its very existence alerts the consumer to the possibility that the contract is especially onerous. A final possibility—and a counterintuitive one—is that conspicuous language is helpful because it *slows* down reading speeds.[76] This is potentially so because capitalized letters are homogenous and lack what typographers call "ascenders" and "descenders," or the parts of letters

[73] *See* HIAM, *supra note* 32 (recommending that all-caps should not be used in marketing materials)

[74] Gatton v. T-Mobile USA, Inc., 152 Cal. App. 4th 571, 581, 61 Cal. Rptr. 3d 344, 352 (2007)

[75] If this is what courts believe, one would expect them to require the capitalization of the entire contract.

[76] *See supra* note 25.

that go above (such as in "b") and below (such as in "p") the line of type.[77] This homogeneity would tend to make reading slower, but also might have the salutary effect of increasing the time consumers reflect on these terms.

Whichever of these possibilities is correct, they all point in the way of a similar testable hypothesis: other things being equal, the consumer would have better recall of the conspicuous term than if the term was inconspicuous. As we have already noted the absence of any supporting evidence, we should also note that there is a reason to suspect the effectiveness of all-caps. As noted, all-caps letters are homogenous and lack what typographers call "ascenders" and "descenders," or the parts of letters that go above (such as in "b") and below (such as in "p") the line of type.[78] In addition, the capitalization of entire blocks of text makes the key terms less conspicuous, as the conspicuousness of text may consist of contrast.[79]

Admittedly, one might hold a non-functional view of conspicuous language. It is possible that courts think that posting a conspicuous sign is enough to shift the burden to the consumer, or that they view all-caps as a formality that serves other, non-consumer-oriented ends.[80] Such theories, however, have little in the way of support. Why should the mere act of capitalization suddenly overcome the difficulty posed by consumers not reading the fine print? If all-caps have no empirically discernible impact on consumer consent, what normative force do they carry? And because we could find no one making these arguments, much less justifying them, we can restrict attention to the possibilities explored above, which relate conspicuousness to informed consent.

Our position is that unless one can show that all-caps has a *meaningful* impact on the quality of consent, all-caps should not be held to satisfy the conspicuousness requirement at all. This is because the error cost of this intervention—the enforcement of onerous but unknown terms on consumers—can be very high. To bar a wrongful death lawsuit simply because a clause in a contract was capitalized, one must have significant

[77] *See* BUTTERICK, *supra* note 61, Robbins, *supra* note 20.

[78] *See* BUTTERICK, *supra* note 61, Robbins, *supra* note 20.

[79] On this view, low-caps would be conspicuous in a sea of all-caps text.

[80] *See generally* Fuller, *supra* note Lon L. Fuller, *Consideration and Form*, 41 COLUM. L. REV. 799, 800-801 (1941).

confidence that this method is indeed effective at improving consumer consent.

A.Methodology

We are interested in seeing whether all-caps has any measurable impact on consumer consent. The most direct measure would be the quality of consumer consent "in the field," but regrettably such an investigation presents many difficulties and is fraught with a host of potential confounders. To see whether the consumer read the contract at all one would have to monitor the consumer closely from the early stages to the consummation of the transaction. To evaluate whether the consumer's understanding is due to the contract or some other factor, one would also need to monitor the consumer's interactions with other consumers, the salespeople, or online materials. There are also considerable variations in the way salespeople communicate and treat different consumers,[81] which could further confound the analysis. These challenges make field research exceedingly difficult and uncertain.

Randomized control trials, and in particular, lab experiments present a rigorous method of evaluating the relevant factors. In the lab, it is possible to control for all variation between the contracts, negotiations, and products. Thus, when the researcher finds a variation in outcomes, he can attribute it more directly to the treatment rather than some external factor.

We recruited American respondents through the popular online platform Amazon's Mechanical Turk (MTurk), a common staple of similar work.[82] This platform "has been studied extensively at this point. Its advantages are that populations recruited via [MTurk] are more representative of the national population than convenience samples (e.g., undergraduates) and that a variety of experimental findings have been replicated using MTurk."[83] While not perfect, MTurk is a standard way of

[81] *See e.g.*, Ian Ayres, *Fair Driving: Gender and Race Discrimination in Retail Car Negotiations*, 104 HARV. L. REV. 817 (1991) (finding, in a field experiment, that salespeople offered worse terms to minorities)

[82] *See e.g.*, Furth-Matzkin & Sommers, *supra* note 21.

[83] Tess Wilkinson-Ryan, *The Perverse Behavioral Economics of Disclosing Standard Terms*, 103 CORNELL L. REV. 117, 150 n. 162 (2017) (internal citations omitted).

ensuring greater subject variability than the leading alternative of recruiting undergraduates.[84]

We recruited, overall, 570 respondents. This sample size is larger than comparable studies and power analysis shows that it is sufficiently large to capture meaningful differences.[85] The demographics of the sample, relative to the general US population (in parentheses), are: 44.6% female (50.8%), median age 38 (38), 75% white (60.4%), a median household income of $52,000 ($57,652), and college degree or higher education 62.8% (30.9%).[86] Relative to the general population, we find a general match, with the sample skewing slightly male, white, and less wealthy. A robustness check did not show any statistical differences along these dimensions. Nor did we have any theoretical reason to expect that the race of participants will affect results in any particular direction. A larger relevant skew is with respect to education, although even here two points are worth remembering. First, this skew is actually much smaller than that of common alternative recruitment methods, most clearly, in undergraduate students.[87] Moreover, some of this skew would likely bias results in favor of all-caps, as more educated readers might be, on average, more informed of the legal requirement to highlight key terms in contracts using conspicuous language. Again, we did not find any meaningful differences based on these factors.

Before delving into the description of the experimental design itself, it is worth highlighting the basic challenge posed by testing the quality of consent and our approach to overcoming it. Testing consent is not an easy

[84] *See generally* Hillel J Bavli & Reagan Mozer, *The Effects of Comparable Case Guidance on Awards for Pain and Suffering and Punitive Damages: Evidence from a Randomized Controlled Trial*, 37 YALE L. POL'Y REV. 405, 453 (Citing "numerous studies" that show tht "MTurk worker population is relatively representative of the general population—and certainly more representative than traditional pools for surveys and experimentation").

[85] *See supra* note 21. The power analysis is based on the non-inferiority testing, as described in Shein-Chung Chow et al., SAMPLE SIZE CALCULATIONS IN CLINICAL RESEARCH, 76-82 (3d ed., 2018). Assuming proportions of 50% correct in both groups, a non-inferiority margin (δ) of -0.1 and a sampling ratio of 1, the sample size for $\alpha = 0.05, 1 - \beta = 0.95$ is 538.

[86] United States Census, https://www.census.gov/quickfacts/fact/table/US/LFE046217 (last visited July 31, 2019)

[87] Joseph Henrich et al., *The Weirdest People in the World?*, 33 BEHAV. & BRAIN SCI. 61,at 63 (2010) (Finding that 67 percent of American subjects in psychology studies rely on college students and that this population is often "at the extreme end of the distribution.").

task, which may be the reason behind the paucity of research in this area.[88] The key parameter of interest, in our estimation, is whether the consumer can respond correctly to a question regarding the obligations they just incurred.[89] However, in testing this, one runs into the problem that consumers may guess based on background information they have from past exposure—rather than engagement with the actual contract. Consequently, even if there is a difference in the effect of different designs, it may be obscured by consumers relying on past experience to respond rather than the contract itself. Our novel solution to these problems, as developed below, was to draft an arrangement that defies past expectations, presents multiple plausible options, and is also sufficiently complex.

The design for this study uses a contract inspired by Spotify's end user license agreement.[90] Such agreements are common among providers of both online and offline services, who offer a free trial period that converts automatically into a subscription-based service after the trial period lapses.[91] Consumer agencies consider such agreements to have potential pernicious effects due to their stickiness, as the consumer may unwittingly pay for an unwanted subscription.[92] Most courts and legislatures, however, are willing to enforce such charges—so long as they are made in all-caps in the consumer agreement—under the theory that such disclosure is conspicuous.[93] This study is a test, then, of whether the inclusion of such clauses indeed improves the quality of consumer consent.

[88] *See supra* notes 58-61 and accompanying text.

[89] *See* discussion of this point see *supra* Introduction.

[90] *Spotify Terms and Conditions of Use*, SPOTIFY, https://www.spotify.com/us/legal/end-user-agreement/ (last modified Feb. 7, 2019) (For an example of an automatic billing disclosure, see § 3.3 of the Terms and Conditions of Use).

[91] *"Free" Trial Offers*? FED. TRADE. COMM'N, https://www.consumer.ftc.gov/articles/0101-free-trial-offers (last visited Feb. 9, 2019).

[92] Koren Grinshpoon, *License to Bill: The Validity of Coupling Automatic Subscription Renewals with Free Trial Offers by Online Services*, 28 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 301, 303 (2018); *"Free" Trial Offers?*, *supra* note 91.

[93] Grinshpoon, *supra* note 92, at 320–28 (Explaining that under California's Automatic Purchase Renewals Statute, for example, automatic billing terms must be disclosed "clearly and conspicuously," which is defined as, *inter alia*, "in larger type than the surrounding text;"); 322 n.106 (listing many states that have adopted this requirement and definition). See also Laura Koweler Marion and Leita Walker, *Automatic Renewal Laws in all 50 States*,

The respondents were told that they were simulating a free-trial sign up for a new music streaming service called "TideTunes." They were then given and asked to read a two-page contract for the service, which consisted of 15 paragraphs. Respondents were asked to spend as much time reading this contract as they would read any similar contract outside the experiment.

Subjects were randomly split among two groups, control and treatment.[94] In the former group, the entire contract appeared in low-caps, i.e., normal formatting. In the treatment group, a test paragraph appeared in all caps. The test paragraph for this study is as follows:

> TERMS OF FREE TRIAL.
> BY SIGNING UP FOR THIS FREE TRIAL, YOU ARE SIGNING UP FOR MEMBERSHIP WITH TIDETUNES. YOUR MEMBERSHIP WILL CONTINUE UNTIL YOU MANUALLY CANCEL IT. MEMBERSHIP INCLUDES AUTOMATIC BILLING OF THE CARD WE HAVE ON FILE AT THE END OF THE MONTH FOR THAT PERIOD. THE TERMS OF MEMBERSHIP APPLY TO THE FREE TRIAL. BY PROVIDING YOUR PAYMENT DETAILS, YOU AGREE TO THE TERMS OF AUTOMATIC BILLING. THE FREE TRIAL CANNOT BE TERMINATED PRIOR TO THE END OF THE TRIAL. IF YOU DO NOT WISH TO BE CHARGED ON A RECURRING MONTHLY BASIS, YOU MUST TERMINATE YOUR PAID SUBSCRIPTION THROUGH YOUR USER ACCOUNT OR TERMINATE YOUR ACCOUNT BEFORE THE END OF THE RECURRING MONTHLY PERIOD.

After being presented with the contract, respondents were moved to a new page, from which they could not go back, and were asked: "Imagine that you have signed up for a trial with TideTunes. When can you cancel your trial?". The options (presented in random order) were: (1) At any time; (2) After the trial period (3) After seven days (4) After three months (5) After fourteen days. The correct answer is number (2).

Before analyzing the responses, we should highlight that many studies run the risk that respondents may use guesswork to respond to questions, meaning that the responses are not affected by the stimuli presented to the subject by the researcher. We used several measures to safeguard against this risk.

Faegre, Baker, Daniels, available online at https://www.faeghttps//www.faegrebd.com/webfiles/50-State%20Survey%20Automatic%20Renewal%20Laws.pdfrebd.com/webfiles/50-State%20Survey%20Automatic%20Renewal%20Laws.pdf

[94] The covariates are well balanced between the two groups.

First, respondents on MTurk are incentivized to be attentive and "[t]here is also evidence, both systematic and anecdotal, that Turk subjects are particularly attentive, perhaps due to the formal mechanisms available for giving them feedback that affect reputation ratings".[95] As a result, many view this as a reliable tool of measurement.[96]

To enhance the quality of MTurk responses, we used a new special service, called Positly, which adds a screening layer to MTurk.[97] This service allowed us to verify that all respondents were unique (i.e., that there was no overlap between subjects in the studies), came from the US, and were within the relevant age range. Importantly, the website uses several quality metrics and attention and quality checks to screen out non-engaged users. Quite tellingly, users on Positly are given an opportunity to respond to the survey, and many complained that the content was boring and that it took them a long time to slog through the entire contract.[98]

Third, we measured—behind the scenes—how long subjects spent on reading the contracts. The average time to read (102 seconds) showed a non-trivial level of engagement with the text. Fourth, we presented subjects with as many as five possibilities to choose from, in order to reduce the effect of guesses. Finally, the fact that other experiments, reported below, produced large differences also suggested that respondents were reacting to the stimuli.

[95] Wilkinson-Ryan, *supra* note 83, at 150 n. 162.

[96] On the reliability of MTurk, see Kristin Firth, David A. Hoffman, & Tess Wilkinson-Ryan, *Law and Psychology Grows Up, Goes Online, and Replicates*, J. EMPIRICAL LEG. STUDIES (2017) (concluding that MTurk samples replicate well across testing platforms).

[97] https://www.positly.com/participants/. Positly enhances the quality of respondents along several dimensions: It aggregates data from independent researchers to screen out low-quality participants; it conducts attentions checks; it screens duplicate responses by the same individual; it uses a digital fingerprint technology to uniquely identify participants; and, it uses IP addresses for geolocation. While none of these methods is perfect, it increases the reliability of the baseline MTurk service and avoids some of its shortcomings.

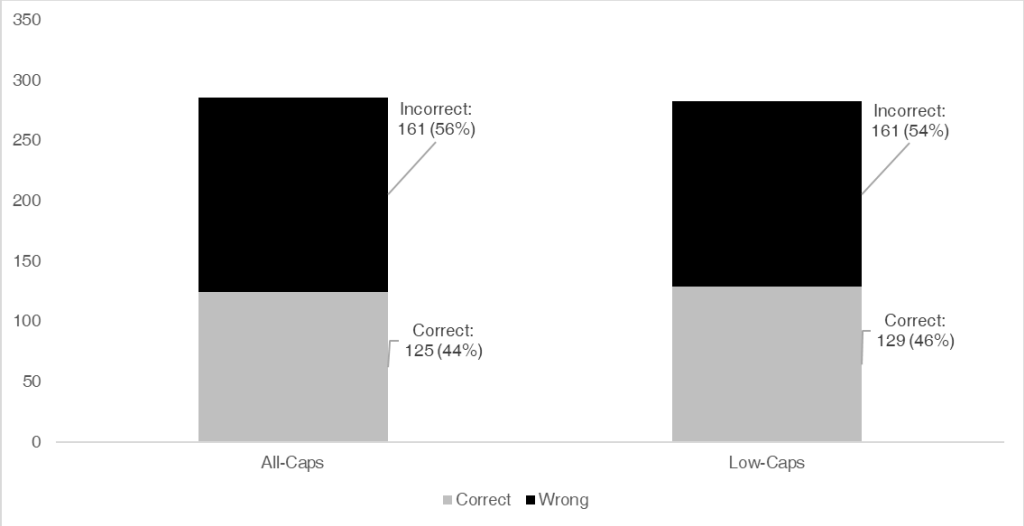
[98] Some complaints include: "[the contract] was a bit long and not that easy to answer the main question without the agreement in front of me."; "I was afraid I would have to return this survey without pay since I couldn't remember certain verbiage from the contact." "The contract was difficult to understand"; "a lot of reading and it does not explain whether I was right or wrong;" "[n]one of the contracts gave me enough time to read " (with respect to Study 5). These complaints suggest that subjects were attentive and their complaints suggest that they seriously attempted to respond to the questions at hand.

B. Findings

The main question of interest was how well consumers understand that they can only cancel their trial after the end of the trial period. As noted, the contract only permits the consumer to opt-out at the end of the trial period ("THE FREE TRIAL CANNOT BE TERMINATED PRIOR TO THE END OF THE TRIAL.")

If all-caps improves noticeability and recall of hidden terms, we would expect consumers in the all-caps group to answer this question correctly more often than consumers in the low-caps group. Figure 1 summarizes the findings.

Figure 1 Accuracy in All-Caps vs. Low-Caps



The key finding here is that respondents in the all-caps treatment failed to show any improvement relative to the control. In fact, there were no differences at all between the groups, and respondents in the all-caps group were precisely as likely to respond correctly (or incorrectly) as respondents in the low-caps group.

These findings allow us to reject, with high *statistical significance*, the possibility that all-caps improves outcomes in a contractually meaningful

way.[99] A non-inferiority test is a common method used to evaluate whether one form of treatment is not worse than another. This is often applied in drug trials, where the question is whether a new drug is at least as good as the drug that is currently in use.[100] By defining clinical significance, the researcher can thus statistically evaluate whether the effects of the new drug are not inferior to the current drug that is in use. Based on this method, we can test whether low-caps is non-inferior to all-caps. Admittedly, there is no neutral way to define contractual significance, but given the high error costs that we noted—i.e., enforcement of especially onerous terms on the basis of the false belief in their effectiveness—we believe that all-caps should be able to show a meaningful improvement over low-caps before they should be approved. If we adopt a ten percentage-point improvement benchmark (which indeed may be too low for some), the data allows us to reject the hypothesis that low-caps is worse than all-caps.[101]

It is important to observe that while we do not test for noticeability directly, these findings bear on this issue. The test contract includes 15 paragraphs and remembering all of its content is not easy. If all-caps makes text conspicuous, it should draw attention to its existence. Psychological studies show that people tend to overly focus on salient features.[102] We would expect, then, that salience would reflect itself in better recall. The failure of all-caps to improve on low-caps undermines the existence of a positive notice effect.

The "fire siren" theory suggests that, even without reading, the existence of all-caps would suggest to the consumer that the contract is especially onerous. The data, however, allows us to reject this hypothesis.

[99] To be clear, we do not conclude lack of effect on the basis of rejection of the null hypothesis, but rather we test here the non-inferiority of the low-caps treatment.

[100] *See* Chow et al., *supra* note 85, at 8. Gisela Tunes de Dilva et al., *Methods for Equibalence and Noninferiority Testing*, 15 BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION 120 (2009).

[101] With $\delta = 0.1$, we can reject the hypothesis that $H_0: p_{LC} - p_{AC} < -\delta$ (where p is the % correct for each subscript category): $z = 2.85, p < 0.01$. For proportion, this δ is equivalent to having 138 instead of 125 correct responses in the all caps group, out of 283 participants. For a lower $\delta = 0.05$ we can reject the inferiority hypothesis with $p = 0.1$.

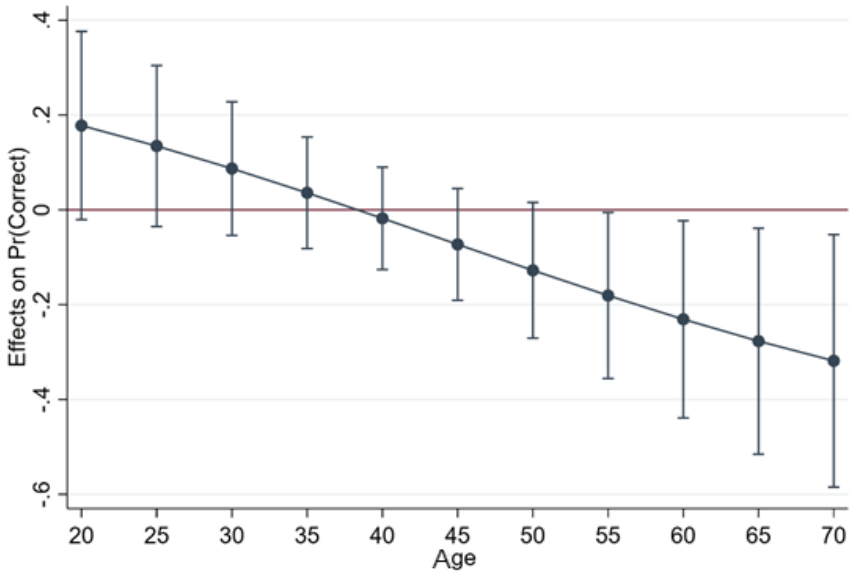
[102] *See e.g.*, Joseph W. Alba & Amitava Chattopadhyay, *Salience Effects in Brand Recall*, 23 J. MKT. RES. 363 (1986)

The subjects were asked to answer a question with four potential answers. The answers can be roughly ranked as being most lenient to the most stringent, from cancellation at any time to cancellation after three months. If the fire siren hypothesis were true, it would make subjects to opt for the stricter options. But in fact, there were very few people—in each group—who opted for either of the stricter options, and the great majority of people chose one of the two more lax options. And in-between these two options, all-caps respondents were less likely to choose the strictest one. Overall, then, we do not find a fire-siren effect.

We then examine how age and all-caps interact. It is possible that the all-caps intervention would provide value to certain age groups or that it might harm others, as differences in generational norms, attention span, eyesight, and so on might lead to different effects among age groups. To test the age hypothesis, we estimated a logistic regression model where the dependent variable was accuracy and the independent variable was age. We controlled for race, education, and income.[103] The following Figure reports the results of the regression:

[103] The results are unchanged even without the controls.

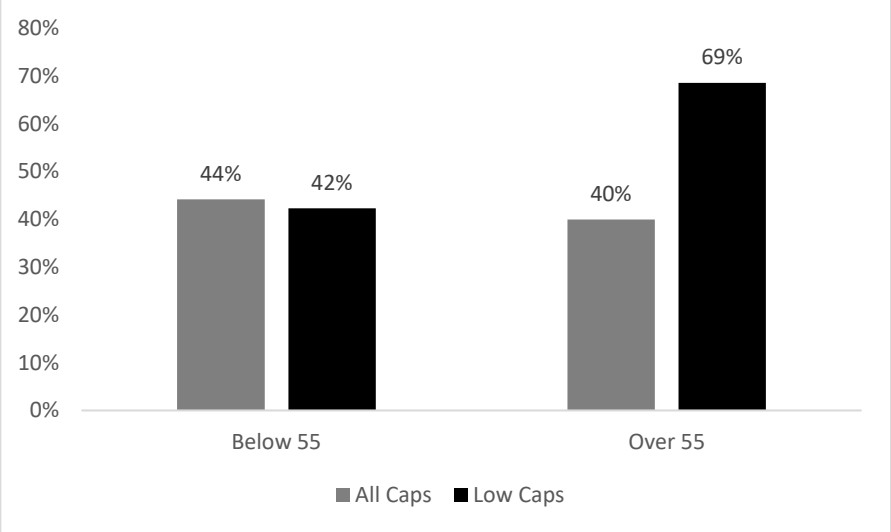
Figure 2 Average Marginal Effects of All-Caps with 99% Confidence Intervals



The horizontal line is the benchmark, i.e., low-caps. The points show changes in accuracy as a result of the all-caps treatment across different age groups, ranging from 20 to 70. The bars around the points are the 99% confidence intervals. As the figure shows, all-caps has a strong negative effect on older readers.[104] The older the reader, the more harmful the effect all-caps has on their ability to answer the test question correctly. This is notwithstanding a general trend in the data where older readers tended to be significantly more likely to answer the questions accurately. To provide a sense of the strength of this effect, the next figure splits the respondents into two age groups:

[104] $p < 0.01$. Note that for younger readers the apparent positive effect of all-caps lacks statistical significance.

Figure 3 Percentage of Accuracy in Different Age Groups



As Figure 3 illustrates, the difference in accuracy among younger respondents is negligible. But for older audiences, the difference can be quite stark. In respondents over 55, 60% were wrong in the all-caps group, relative to only 31% in the low-caps group. This is a very large effect, effectively doubling the error rate, and it is practically important given the stakes of mistakes regarding all-caps clauses.

What might explain the tendency of older respondents to commit more mistakes in the all-caps group than in the low-caps group? Impatience, lack of motivation, and differential stakes of charges are all possibilities. An additional explanation is that the use of all-caps is the formatting equivalent of yelling or otherwise communicating anger.[105] Thus, reading all-caps would be an emotionally negative experience, which may lead older respondents to avoid it more than younger respondents. What we find most plausible is the explanation that all-caps impede reading because they

[105] *See* Alice Robb, *How Capital Letters Became Internet Code for Yelling*, THE NEW REPUBLIC (Apr. 17, 2014) https://newrepublic.com/article/117390/netiquette-capitalization-how-caps-became-code-yelling; *All Caps*, PRACTICAL TYPOGRAPHY https://practicaltypography.com/all-caps.html (last visited Feb. 9, 2019).

homogenize letter size, making it harder to distinguish between letters on the basis of their ascenders and descenders.[106]

*

This study shows that the common practice of formatting certain contractual terms in all-caps fails to improve outcomes for participants in a meaningful way and that the practice in fact harms older readers. As we emphasize throughout, the stakes of errors with the enforcement of all-caps are high; these are some of the most consequential terms in consumer contracts. Enforcing these clauses without evidence of their effectiveness was always questionable; now we show positive evidence that this practice is actually harmful. While caution is always prudent with lab experiments, we believe that these findings are sufficiently clear to—at the very least—shift the burden of proof. We will return to discuss these findings after exploring some other aspects of all-caps.

IV. EXPLORING ALTERNATIVE JUSTIFICATIONS AND INTERVENTIONS

Our analysis so far has established that all-caps are very common in practice, but that they lack any empirical support. Further, the evidence presented here suggests that they fail to bear the burden of showing any significant improvement over standard formatting. We now turn to a series of exploratory studies that extend these results and test them under various settings. We first check to see how all-caps performs under time pressure, then we evaluate whether consumers may nonetheless show a preference for all-caps, and finally, we look at whether some other modes of highlighting text can be more helpful.

A.All-Caps under Time Pressure

1. Methodology

We have just seen that all-caps does not improve the quality of consent in any meaningful way and impedes it among older readers. One limitation of the primary experiment is the lack of any time limit. Subjects could spend as much time as they saw fit on reading and reading the contract very closely might diminish the usefulness of all-caps. In practice, however, time

[106] BUTTERICK, supra note 61; Robbins, *supra* note 20.

pressures are ubiquitous, and one study found that as many as 65% of respondents reported not reading the fine print because they were "in a hurry."[107]

Recall that under one theory, all-caps is useful in that it helps consumers direct attention to the most important aspects of the transaction. Under this theory, the positive effects of capitalization would be most noticeable under time pressure, for then the consumer has to make an active choice where to focus her attention. On the other hand, one might worry that if capitalization results in text that is harder to read—a point we explore in the next study—consumers may spend less time on this activity.

To test the effect of all-caps under time pressure, we designed an exploratory series of three shorter contracts that were presented to readers under a strict time limit. When reading the contract, the subject saw a timer moving, noting the number of remaining seconds; once the time lapsed, the subject was moved to the next page with the test questions. Each short contract—described in the appendix—was followed by a multiple-choice question that measured the reader's recall of a specific term in the contract. The term appeared in the test paragraph, which was either ordinary low-caps (control) or all-caps (treatment). That is, the control group had no way of knowing which paragraph contains the term paragraph, but the treatment group could infer this on this basis of the use of all-caps used in this specific paragraph alone.

We administered the test to 81 respondents, receiving 240 responses overall (as there were three tests per respondents). The demographics of the sample, (relative to the demographics of the general US population, in brackets), are: 46% female (50.8%), median age 34 (38), 65% white (60.4%), college degree or higher education 47% (30.9%), median household income $50,000 ($57,652).[108] The sample skews somewhat male, younger, white, and poor, and significantly more educated. We do not have any theoretical

[107] Robert Hillman, *Online Consumer Standard Form Contracting Practices: A Survey and Discussion of Legal Implications*, *in* IS CONSUMER PROTECTION AN ANACHRONISM IN THE INFORMATION ECONOMY?, 293 (2006) .

[108] United States Census, https://www.census.gov/quickfacts/fact/table/US/LFE046217 (last visited July 31, 2019)

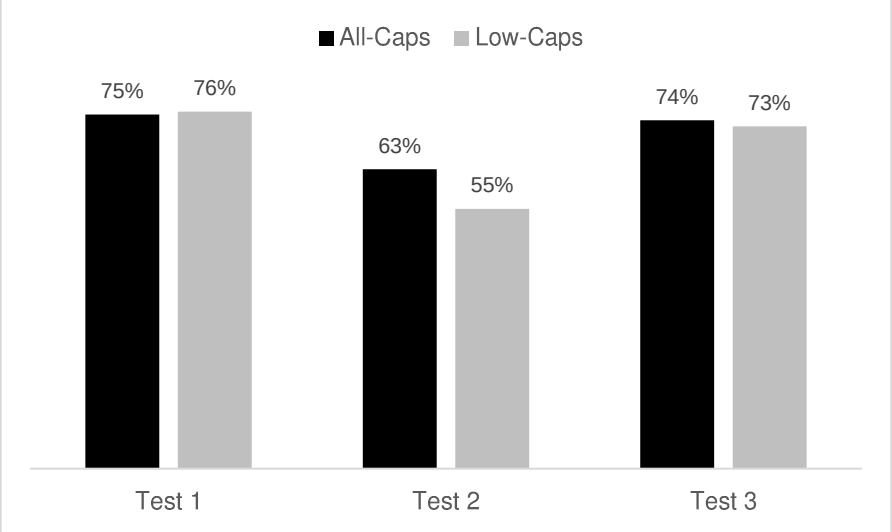
reason to expect this skew to point in any specific direction, but, coupled with the small sample size, these findings should be interpreted with caution.

To determine what time limit to use, we first administered the test to a small pilot group without a time limit. We measured the average time to read for the test group and imposed an increasingly lower limit for each test. Subjects were given 23 seconds to read test 1, 20 seconds to read test 2, and only 15 seconds to read test 3. As can be seen by reviewing the contracts in the appendix, these time limits are fairly challenging. The responses of the pilot group were not included in the analysis.

2. Findings

Figure 3 summarizes our findings regarding the inaccuracy of responses with the inclusion of the timer:

Figure 4 % of Mistakes under Time Pressure



As can be seen, subjects in the all-caps group failed to show any improvement under time pressure. In fact, as we increased the time pressure in tests 2 and 3, we see the low-caps group performing better, with slightly higher accuracy rates, although only the second result approached statistical

significance.[109] In Tests 1 and 3, respondents were also presented with the option to respond "I don't remember". In both tests, the rates of failure to remember were very similar—43.9% (low caps) vs 40% (all caps) in test 1 and 43% (low caps) and 43% (all caps) in test 3.

We see here, as in our primary experiment, that all-caps fails to improve reader recall. The important feature of this variation was the use of a timer with a strict deadline. The timer added both a physical and a psychological constraint—reading long and complex texts within a short time is difficult and the existence of a countdown timer can also impose stress. This is arguably similar to a situation where the customer is reading a contract in the dealership or at mortgage closing with the agent looking at them, expecting them to sign the agreement. While lacking statistical significance, the results are indicative that even under these fairly realistic constraints, all-caps does not seem to improve outcomes.

The results of this study are noteworthy for those who believe all-caps increases salience. If the use of all-caps is increasing the salience of the text—indicating to the reader that this part of the text is not standard boilerplate but rather an important part of the agreement—we would expect readers to focus more attention on these clauses under time pressure. The large text would indicate to them that this term, rather than any other, is worth focusing one's attention on. These initial findings, however, weigh against the plausibility of the salience theory.

B. Subjective Sense of Difficulty & Reading Speeds

1. Methodology

What is the effect of all-caps on the consumer experience? Under one theory noted above, capitalization helps consumers by increasing the font size and, arguably, by using a typeface that is more cognitively efficient. Unlike the theory of salience by contrast, this theory holds that capitalization is important for making the text more accessible. If this theory is true, we would expect at least one of the following hypotheses to be true. One, consumers would tend to rate all-caps as easier to read and understand; two,

[109] Based on noninferiority test, with $\delta = 0.1$, the results of the hypothesis testing for the three tests are, respectively, $p_1 = 0.25, p_2 = 0.1, p_3 = 0.2$. Note that these results may be related to the small sample size.

consumers would tend to spend less time reading a contract where the key parts are effectively highlighted.

In the following exploratory variant of the study, we present 102 subjects with a version of the contract used for the primary study. The demographics of the sample (relative to the demographics of the general US population, in brackets), are: 45% female (50.8%), median age 36 (38), 84% white (60.4%), median household income $56,277 ($57,652).[110] This sample skews considerably white, but otherwise has low skew. Again, this is an exploratory study and it should be interpreted in this context.

Subjects were split among two groups, control and treatment. In the control group, the entire contract appeared in low-caps. In the treatment group, the contract was fully capitalized. Invisible to the participants, we set a clock to measure the time from the moment the participant first saw the contract until they clicked to the next page. Reading times were sufficiently long to indicate engagement and we used attention checks and other quality controls to verify engagement. [111] We also asked subjects to rate their own sense of the difficulty of understanding the contract they read on a sliding scale of 1-100, where 100 indicates the greatest difficulty.

2.Findings

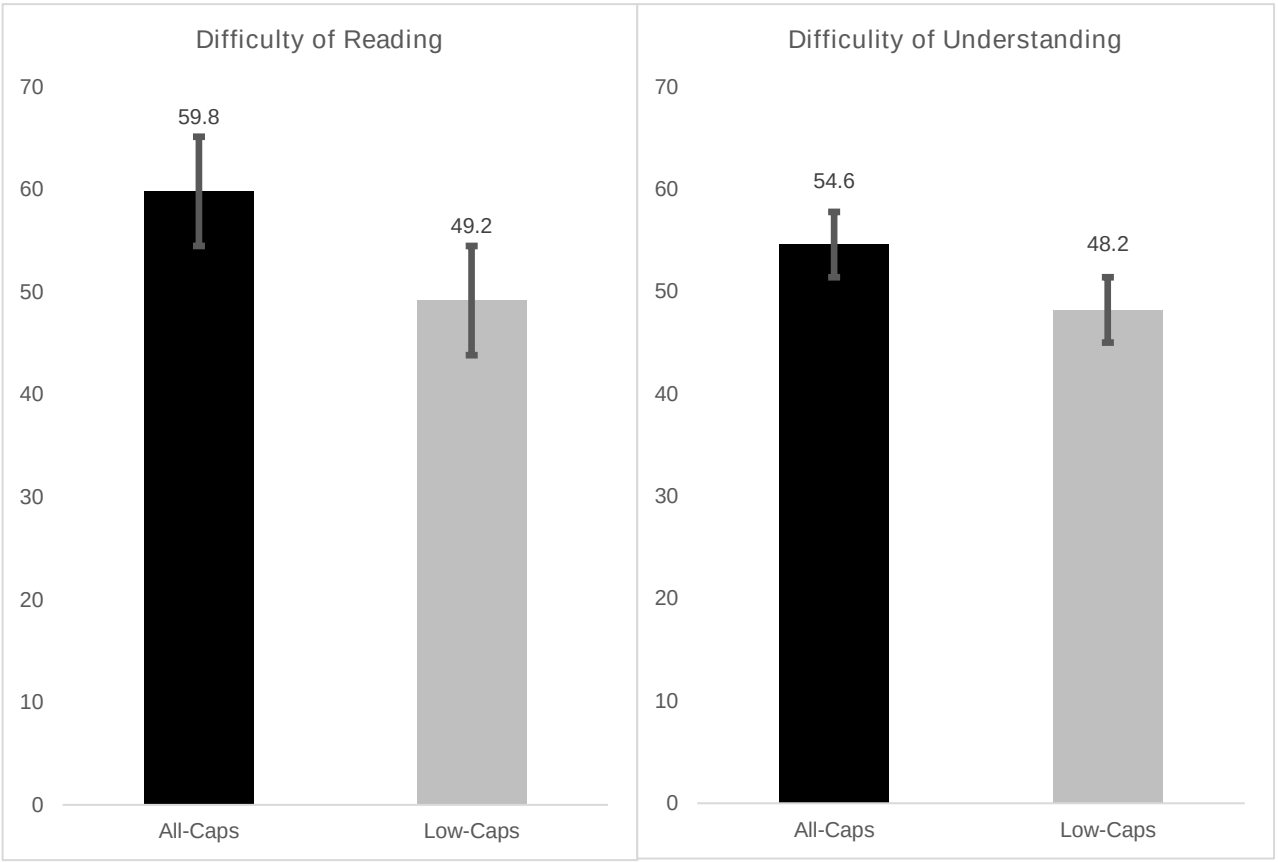
The following Figure details the average ranking of the difficulty of reading and understanding the text for subjects in both groups.

[110] United States Census, https://www.census.gov/quickfacts/fact/table/US/LFE046217 (last visited July 31, 2019).

[111] As a reminder, by low-caps we mean the standard English convention, with letters opening a sentence and names being capitalized.

Figure 5 Self-Reported Difficulty of Reading & Understanding the Contract

Panel A **Panel B**



As the Figure shows, respondents rated reading and understanding the capitalized contract as being considerably harder than respondents rated reading and understanding of the low-caps contract. In terms of difficulty of reading (Panel A), the capitalization treatment resulted in a rating of difficulty that was roughly 22% harder. Understanding was also rated as harder (Panel B), roughly 13% more in the capitalization group. The difference in the difficulty of reading was statistically significant, suggesting that all-caps did not make reading easier.[112] The difference in the difficulty

[112] $t(99) = 2.088, p < 0.05$

of understanding was not statistically significant (although it also was in the same direction).[113]

This finding indicates that capitalization may result in a greater sense of difficulty in reading the text and, to a lesser extent, understanding it. This finding puts pressure on the theory that capitalization increases the accessibility of legal texts, at least inasmuch as consumer preferences are indicative of accessibility.

Some may doubt the validity of self-reported subjective rankings of difficulty, but one should be cautious about dismissing this metric out of hand; the negative valence of the experience of reading capitalized text—whether or not it affects other metrics—may well dissuade consumers further from reading contracts. It is also worth noting that consumers were not ranking the contracts comparatively, i.e. not comparing the same contract to another that is capitalized. Instead, the respondents reported their own sense of difficulty regarding the single contract they saw. This suggests, in our view, greater validity to the relative sense of confidence among the two groups.

In terms of reading speeds, we found that members of the all-caps group took longer to read the contract. The all-caps group averaged 94.7 seconds relative to 83.4 seconds in the low-caps group. This difference (13%) was not statistically significant, presumably due to the large variance in reading times between members in each group or the smaller sample size.[114] An additional confounding factor is that members of the all-caps group, who found the text more difficult to read, may have made less effort to read the contract carefully.[115] Still, it is remarkable that this is the exact same effect size as previous work identified in non-legal contexts.[116]

We summarize this study as presenting early evidence against the capitalization-as-accessibility theory. The capitalization of text resulted in a

[113] $t(99) = 1.21, p = 0.11$

[114] $t(99) = 0.78. p = 0.22$

[115] We note that in both groups, recall rates were similar, meaning that the increased reading time did not result in higher likelihood to remember the content.

[116] *See* Miles A. Tinker & Donald G. Paterson, *Influence of Type Form on Speed of Reading*, 12 J. APPLIED PSYCHOL. 359 (1928).

greater sense of difficulty reading the text and failed to improve the sense of improved understanding of the text. Moreover, capitalization resulted in a negative effect on reading times: not statistically significant, but potentially large in practice. . The caveats presented above also apply here: Different contracts may elicit different consumer responses, and it may be possible that in other settings, consumers will not prefer a low-cap contracts, or that some combination of formatting and content would make all-caps easier to read. Still, our findings present the first empirical evidence on this issue and they suggest the ineffectiveness of all-caps.

C.Taking the Con out of Conspicuous

1.Methodology

Our findings so far cast doubt on the idea that all-caps improves the quality of consumer consent and suggest that, in some cases, all-caps undermine it. In this study, we examine whether it is possible to improve the quality of consumer consent through other means. Before we proceed to describe this exploratory study, a preliminary comment is in order. Designing communications is a difficult undertaking, conducted by professionals who devote their careers to text design, marketing, and copywriting. Our goal is not to argue that a single mode of communication is always superior. Nor are we particularly interested here in discovering a single mode of improving consent. Instead, we are interested in what mathematicians sometimes call an "existence theorem;" i.e., discovering whether it is possible, in principle, to improve contractual communications. Such an inquiry is very timely, as many today are starting to abandon the hope that consumers can read and understand contracts.[117] If it is possible to improve readability, perhaps not all hope is lost.

Overall, we recruited 241 respondents. The demographics of the sample (relative to the demographics of the general US population, in brackets) are: 40% female (50.8%), median age 34 (38), 76% white (60.4%), median

[117] *See e.g.*, Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Disclosure*, 83 JERUSALEM REV. LEG. STUD. (2015); Ian Ayres & Alan Schwartz, *The No-Reading Problem in Consumer Contract Law*, 66 STAN. L. REV 545 (2014).

household income $47,500 ($57,652).[118] The sample skews somewhat male, younger, and poorer, and significantly more white. We do not have any theoretical reason to expect this skew to point in any specific direction, but it is advisable to bear this in mind when interpreting our findings.

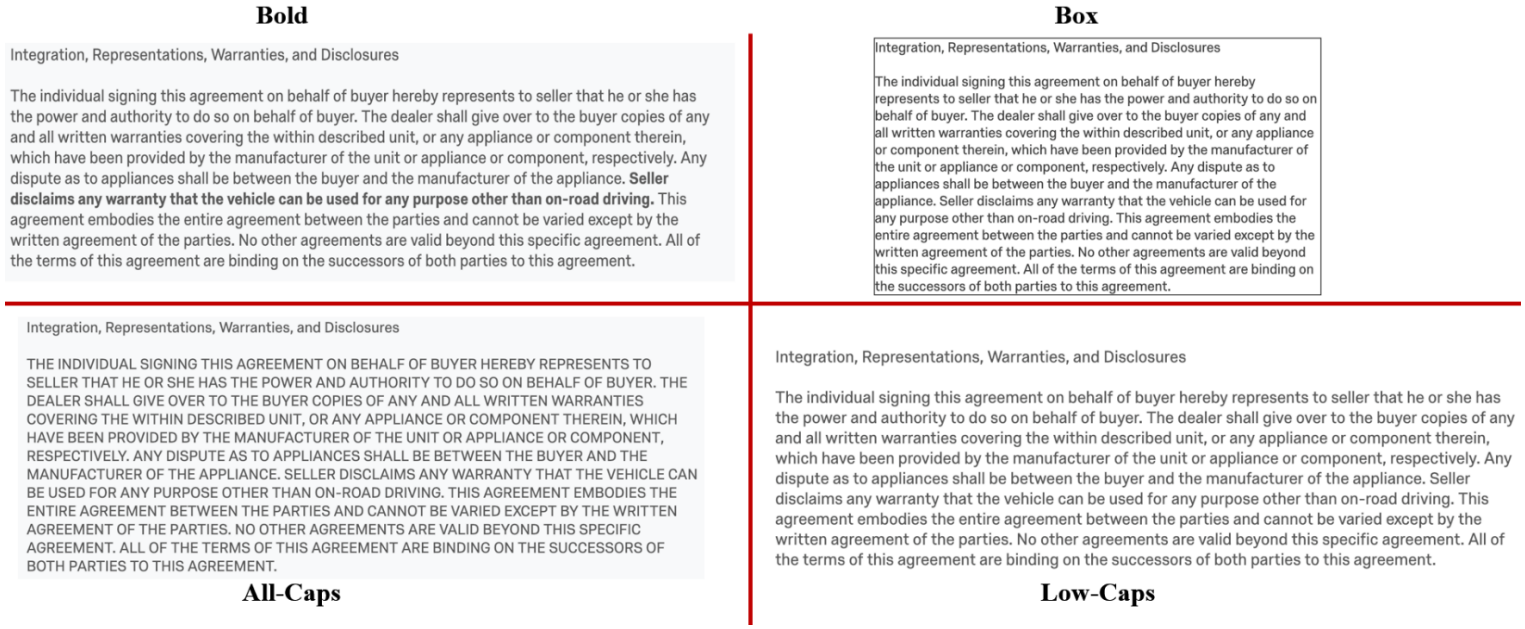
In this study, we presented respondents with a contract for the sale of an RV, which included a liability disclaimer. The key paragraph, reproduced below, was a disclaimer clause. The disclaimer waived liability for almost all uses of the RV, but the seller *assumed liability* when the RV is driven on the road. Respondents were allocated, randomly, to one of four groups, illustrated in Figure 6 below. The control, as always, was the group where the key paragraph was in low-caps. One treatment was all-caps. Another treatment involved the use of a box, as suggested by some courts and legislators, such as in the context of TILA.[119] The last treatment was "bold"—where we presented the contract in low-caps, but used boldface formatting in a single key sentence. This treatment combines both boldface and the selective highlighting of a single sentence.[120] Note that given these differences, this study is not a "horse-race" between boldface and capitalization, because our concern is not with capitalization per-se, but with blocks of capitalized text (i.e., all-caps).

[118] United States Census, https://www.census.gov/quickfacts/fact/table/US/LFE046217 (last visited July 31, 2019).

[119] Regulation Z, *supra* note 8. Bennett v. Matt Gay Chevrolet Oldsmobile, Inc., 408 S.E.2d 111, 114 (Ga. Ct. App. 1991).

[120] As the last treatment involves changes—selective highlighting and boldface—it is not possible to disentangle which of the two changes is more important. Our intention here, however, is not to detect the best method of communication, but rather to see if any interventions can be helpful. We leave the more nuanced analysis of design to future work.

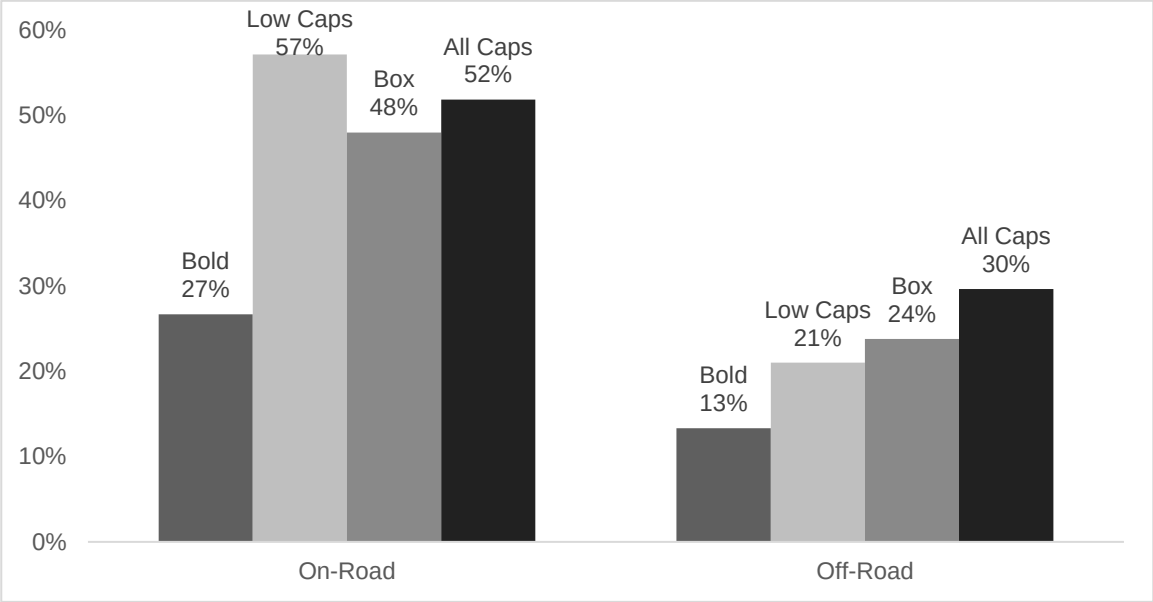
Figure 6 % Four Design Choices



2. Findings

We measured the respondent's answers to two test questions: whether they can bring a lawsuit if the RV does not drive well off-road (the correct answer is 'No'), and whether they can bring a lawsuit if the RV does not drive well on-road (the correct answer is 'Yes'). The next figure describes the error rates among the different interactions.

Figure 7 Error Rates, Four Treatment Groups



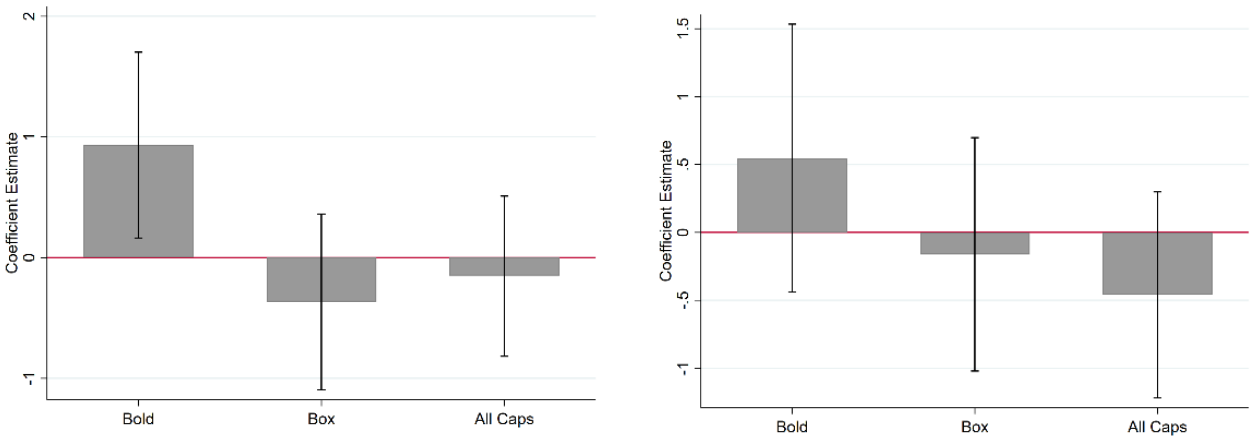
As these figures show, the bold treatment performed considerably better than any other method of intervention. Focusing on the on-road question, the use of bold text had a wrong answer rate of 27% relative to 57% (low-caps), 52% (all-caps), and 48% (box). In the off-road question, bold was again associated with a low error rate (13%), followed again by low-caps (21%); this time box did only marginally better (24%) and came ahead of all-caps (30%).

To test the statistical significance of these differences, we estimated a logistic regression model of the probability of accurately answering the

question with controls for the four different treatments. The following Figure summarizes our findings:

Figure 8 Coefficient Estimate of Treatment Differences

Panel A: Off-Road **Panel B: On-Road**



In these figures, the horizontal line represents the baseline—low-caps—and the bars the effectiveness of these interventions relative to this baseline with a 95% confidence interval. As can be seen in Panel A, the Bold treatment had a large, positive, and statistically significant in the off-road question and a large, positive, but statistically insignificant effect in the on-road question (Panel B).[121] The other treatments had a negative, but statistically insignificant, effect relative to the baseline. The lack of a statistically significant effect may well result from the absence of such a difference, but also from the relatively small size of each of these groups.

These findings, first and foremost, support the possibility that some methods of intervention can improve the ability of consumers to recall the terms of their agreements. The success of the Bold approach suggests that consumers readily react to communicative interventions, and their recall can be significantly enhanced by designing interventions in a targeted manner. This finding is consistent with early research done by psychologists who

[121] $\Pr(correct) = F(\beta_0 + \beta_1 Bold + \beta_2 Box + \beta_3 AC + \epsilon). p < 0.05.$

found that readers prefer boldface over other types of emphasis.[122] Still, our goal here is not to design effective interventions. It is possible that other variations would have been even more effective (including, perhaps, using capitalization for just the key sentence). All we show here is that it is possible that some well-designed interventions will have a large positive effect. Another implication of this finding is that it validates the idea that subjects in our studies are not engaging in guesswork, as their responses are sensitive to the type of intervention.

Any optimism regarding the methods of intervention should be tempered with the observation that other plausible interventions (all-caps and box) failed to improve upon the benchmark of low-caps. These negative findings highlight the difficulty of designing effective disclosure. Note, however, that we cannot definitely say whether this is because these interventions have no positive effect or because the difference did not register given the sample size.

We noted above the fire-siren effect of all-caps and it is worth revisiting it now. In the off-road question, the correct response was lack of a right; in the on-road action, the correct response was that a right did exist. If the fire-siren effect is real, we would expect the all-caps participants to believe that a right does not exist in both cases at much higher rates than participants in the low-caps group. The findings, again, cast doubt on the fire-siren effect, as the response rates were fairly similar in both groups.

V. THE CASE AGAINST UPPERCASE

This paper studies one of the distinguishing markers of the legal genre: The use of blocks of capitalized text known as all-caps. Courts and legislators advance a deeply misguided policy whereby all-caps improve consumer consent. Here we lay out the case against this policy and consider several implications.

[122] TINKER, *supra* note 18, 62.

A.Abolishing All-Caps

In the first part of the study, we showed the legal carte-blanche given to all-caps. Courts are enforcing otherwise unenforceable terms *because* these terms appear in all-caps. As such, consumers are locked into obligations in a variety of contexts: wrongful death, liability for property damages, arbitration agreements, waiver of implied warranties to name but a few. Claire Donhau is a case in point.[123] Her rock-climbing instructor gave her, allegedly, wrongful instruction which led to her fall and the fracture of her tibia in four different places. The Alaska Supreme Court upheld summary judgment against her because the release form she signed "emphasized language with simple words and capital letters."[124] As this case vividly illustrates, courts will deny compensation from victims because of the all-caps formatting of the consumer contract—linking all-caps and consent. Similarly, in a recent case, the Court of Appeals for the Eleventh Circuit heard an appeal filed by homeowners against a shingles manufacturer that sold allegedly defective and low-quality shingles that resulted in the early deterioration of the homeowners' roofs. The homeowners wanted to file a class-action, against the objection that an arbitration agreement that was printed on the wrapper of the shingles prevented them from doing so. The homeowners protested that they did not notice this provision, but the court found persuasive the fact that the clause was written in all-caps.[125] Thus, the court denied the appeal and the homeowners were sent back to individually arbitrate their cases.

Legislators not only permit the use of all-caps, they often mandate it. In various settings, legislators require that certain disclosures will appear in all-caps; in others, legislators just list all-caps as a preferred mode of disclosure.[126] In either case, a firm that uses the statutory form immunizes itself from later claims by consumers. Through this nexus of legislative and

[123] Donahue v. Ledgends, Inc., 331 P.3d 342 (Alaska 2014)

[124] *Id.*

[125] Dye v. Tamko Bldg. Prod., Inc., 908 F.3d 675, 678 (11th Cir. 2018) ("[a]s particularly relevant to this appeal, [the] limited warranty contains a mandatory-arbitration clause—which, significantly, is also printed in its entirety, and in all caps, on the outside of every shingle wrapper.")

[126] *See supra* Part I.B.

judicial policies, consumers are locked into some of the most onerous terms for no other reason but their capitalization: *Caps-Lock*.

Firms react to this permissive legal environment in predictable ways. In our analysis of the standard forms of 500 leading firms—forms which are the basis of hundreds of millions of consumer contracts—we found that over 77% include at least one all-caps paragraph. This finding naturally leads one to question the firms' motives. Are firms naïve? Do firms genuinely believe that using all-caps would promote consumer understanding? Or—worse—do firms take advantage of the naïve judicial policy to hide some of the most offensive, onerous, and costly terms in plain sight by using all-caps? The latter option suggests a vicious dynamic. Not only do courts not protect consumer interest by favoring all-caps, they invite abuse.

Our data cannot speak directly on this point, but we do think there is some highly suggestive evidence that sheds light on these questions. The legal context is but one of many where firms communicate with consumers. When firms want to sell to consumers, they have every incentive to design effective communications; indeed, this is the service provided by the multi-billion dollar advertising industry. When looking at marketing materials, one finds a rich, creative mix of text sizes, colors, typefaces, and backgrounds. What one never finds is blocks of capitalized text, i.e., all-caps. Sure enough, some individual words, and maybe even the occasional sentence, will be capitalized. But blocks of homogenous capitalized text are all but absent. This harkens back to the observation made at the outset; all-caps is a hallmark of legal texts precisely because there is little reason to use all-caps elsewhere. Moreover, there is some evidence that firms try to affirmatively sabotage disclosure, making it less readable.[127] Whatever is one's view of firms' motivations, it should be clear that the legal system is permitting, encouraging, and often outright mandating the use of all-caps.

It is against this background that our findings should be interpreted. The primary experiment analyzed the responses of 570 people and demonstrated that all-caps fails to improve consent within a reasonable margin of effectiveness. Worse, the findings show that all-caps is harmful to older readers. Readers over 55 were shown to understand their agreements

[127] Willis, *supra* note 17, at 1322-26.

significantly worse when presented with all-caps text rather than standard low-caps text. Importantly, our experimental design involved a simple question—one that is relatively easy to answer correctly even on a quick skim. Even with this simple metric, the older group answered incorrectly at rates almost double than that of their same-age peers in the control group.

The findings also allow us to reject the "fire-siren" theory of all-caps. Under this theory, all-caps is like a fire-siren in that one can easily hear it but can hardly listen to it. As such, the very existence of all-caps would be a signal of a contractually onerous term, even if the consumer does not understand exactly what it might be. In fact, however, respondents did not think however that the all-caps was more onerous than the low-caps one. Even as a fire-siren, then, all-caps fails.

The interpretation of these findings can be informed by cognitive research that suggests that the use of all-caps homogenizes the difference between letter types, making it harder to read the fully capitalized text.[128] The findings are also in line with common practical advice given by lawyers.[129] Another possibility is that the choice of typeface does more than altering the form, but also changes the substance. Form, in language, is itself a mode of communication. In the past, the usage of all-caps was meant to designate "grandeur," "pomposity," or "aesthetic seriousness;" today, there is a growing convention that all-caps is similar in effect to yelling.[130] The negative emotional valence associated with all-caps might make reading more difficult or less appealing.

While exploratory in nature, this paper also tested the theory that all-caps would prove more beneficial in the presence of time-pressure. When one has limited time, prioritizing attention becomes critical. If all-caps does anything, performance under time-pressure would be the time for all-caps to shine. We again could not detect any advantage provided by all-caps, but our

[128] BUTTERICK, supra note 61; Robbins, *supra* note 20.

[129] *See* BUTTERICK, *supra* note 61.

[130] *See* Alice Robb, *How Capital Letters Became Internet Code for Yelling*, THE NEW REPUBLIC (Apr. 17, 2014), https://newrepublic.com/article/117390/netiquette-capitalization-how-caps-became-code-yelling; *All Caps*, PRACTICAL TYPOGRAPHY https://practicaltypography.com/all-caps.html (last visited Feb. 9, 2019).

sample size in this specific experiment was fairly small and so our conclusions are tentative.

It is also revealing that when people are asked to rate the difficulty of reading, they rank all-caps as harder to read. Comparing the subjective assessment of difficulty between individuals who read a contract containing all-caps and those who read a contract in full low-caps, we found statistically significant evidence that all-caps is harder to read. Individuals also rated the all-caps contract as more difficult to understand, and although this finding lacked statistical significance, it was in a similar direction—suggesting a potential link between reading difficulty and understanding. Similarly, we found evidence that reading times were longer under all-caps, but despite its large magnitude (13%), this finding was not statistically significant. We hypothesize that the longer reading times were counteracted by skimming, as (presumably) subjects wanted to end the difficult experience faster.

Taken together, our empirical findings suggest the failure of caps-lock, one of the most common and onerous consumer policies in the US.

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We believe that there is a compelling reason to abolish judicial reliance on caps-lock. Courts should no longer give *any* weight to the use of all-caps in contracts. In fact, there may be a reason to treat all-caps with suspicion, but we limit ourselves to calling for the renouncement of caps-lock.

In reaching this conclusion, we are well aware of the limitations of this, or any other, lab study in terms of generalization, replicability, and external validity. Our conclusion, however, rests on several mutually-enforcing arguments that outweigh such concerns. First, our analysis of the literature shows that the hypothesis that all-caps would improve consumer consent was never validated; all-caps is instead an exercise in armchair theory. Courts might have had a reason to think that all-caps could be effective, but resting the full weight of such an onerous policy on an untested theory is deeply misguided. Worse, the evidence in psychology that did exist at the time that courts adopted this policy was negative: it showed that all-caps impeded reading speeds.[131] In evaluating all-caps, then, our starting position should

[131] *See* Tinker & Paterson *supra* note 25.

be the general skepticism about any intervention that is supposed to easily and dramatically increase the level of consumer consent.

Second, our findings suggest the practical failure of all-caps in legal texts. Not only is all-caps not improving consumer consent, it actively harms older audiences who in some settings may be the most vulnerable. Consumers could identify their obligations no better under all-caps than under normal print—and older readers did much worse. In light of this, it is not surprising to find a consumer dislike of all-caps. Our evaluation of subjective sense of difficulty, shows that individuals rank reading as much harder when presented with text in all-caps. All-caps thus seems to be violating the basic Hippocratic precept: first do no harm.

None of these weaknesses would have mattered much if the stakes were low. But the stakes of error in this context are especially high. If a court decides to enforce a liability waiver in the event of wrongful death because the judge believes that putting the waiver in all-caps truly informed the consumer, then all-caps has a series of unwanted effects. The consumer is deprived of redress and compensation, which the consumer believed were available to them. Indeed, the consumer may have even paid more under this misguided belief and enforcing the waiver would deprive them of the benefit of the bargain. From the firm's perspective, the enforcement of the release would leave a deterrence shortfall. For these reasons, the costs of error in this context can be very high. Given that, to prove that the all-caps intervention indeed improves consent, the bar should be set high. Exactly how high is a matter of debate, but at the very least, we can agree that speculation is an insufficient ground.

Fourth, we think there is a good *a priori* reason to approach all-caps with great suspicion. As we noted above, the world around us is replete with text that is meant to persuade consumers to buy products, text which is designed by ingenious copywriters and shrewd advertisers. Yet, when firms have a personal stake in the success of consumer communications, they almost never employ large blocks of capitalized text in their brochures, advertisements, and flyers. When these firms want to make attractive features conspicuous, they use myriad design choices that have no resemblance to the texts they use to obligate and bind consumers. As

Professor Hoffman showed, when firms have skin in the game, they can even design fun and easy to read contracts.[132]

Taken together, then, we think the case against all-caps is compelling.

Of course, this study is not without limitations—the samples only roughly represented the general US populations, we did not study many possible formatting possibilities, did not test a large range of possible contracts, and we were limited to responses in the lab. Still, we believe that given the evidence presented here, courts and legislators should abandon the preference given to all-caps. In the diverse contexts where conspicuousness is required, courts should no longer accept all-caps as presumptively conspicuous and thus retreat from a century-long jurisprudence in disclaimers, waivers, arbitration clauses, choice of law provisions, and many more. We are aware that legal traditions die hard. Yet, the stakes of this specific legal tradition are extremely high and come at a severe cost to consumers. If we care at all about informed consent, all-caps must be abolished.

B.Stairway to Haven

Not all that is capitalized is conspicuous. Today, courts provide an effective safe haven to firms that employ all-caps in their contracts. We explained some of the dangers inherent in this practice, as consumers are bound by terms they find hard to read and understand, and it encourages their usage, irrespective of the effects of all-caps on consumers. Hence, the use of a save-haven for all-caps appears ill-advised.

One might think that perhaps a different safe-haven is warranted, a different mode of highlighting that firms can simply use to ensure enforcement of the fine print. However, our central findings regarding the failure of all-caps do not augur well for alternative safe-havens that are built on mechanical, bright-line rules. It is not clear that it is possible to create hard rules with broad applicability for human communications, which is a subtle, complex, and context-dependent practice. This is especially problematic, as sophisticated parties may learn to manipulate safe havens to

[132] David A Hoffman, *Relational Contracts of Adhesion*, U. CHI. L. REV. 1395 (2018).

their advantage and we already noted that some firms are strategically making disclosures less readable .[133]

There is, however, a more optimistic lesson here. We studied four potential interventions in consumer contracts, including all-caps, low-caps, a box around the text, and the use of boldface to highlight a specific key sentence. The effect of correctly designed interventions is quite striking. Subjects in the boldface group gave responses that were highly accurate, responding correctly to one of the questions 73% of the time, relative to only 48% in the all-caps group. The success of boldface matches the findings of early research done by psychologists that demonstrates that readers prefer boldface to other types of emphasis.[134] A 73% accuracy on a question involving a long legal text—especially one that employs legal concepts—is quite remarkable. This finding suggests that interventions can be quite impactful if they are targeted and well-designed.

Tempering this optimism is the difficulty of employing this intervention on a large scale. It is sometimes very difficult to condense the key terms to a single sentence, and repeated use of this technique may have quickly diminishing returns. Most critically, it is not clear that firms will even have an incentive to properly design their communications, a point we return to soon. These considerations, in combination with the limitations of results from any lab study, suggest caution.

Still, Congress, regulators, and the courts will sometimes sacrifice accuracy in favor of the certainty of bright-line rules, so there may be practical pressure to offer such rules.[135] With this in mind, one possibility for future save havens is that courts will clearly distinguish between salience of the paragraph for purposes of notice and its formatting for purposes of reading. To increase notice, parties may be able to use a variety of signals of importance—and may even include capitalization of the heading (as the UCC itself suggests).[136] With respect to salience markers, courts should be permissive. At the same time, these markers should not extend to the text

[133] Willis, *supra* note 17, at 1322-26.

[134] TINKER, *supra* note 18, 62.

[135] *See* Willis, *supra* note 17, at 1348-49 (noting the preference for hard, mechanical rules in consumer law)

[136] UCC § 1-201(10).

itself. Low-caps outperforms all-caps, at least among older readers, and if the consumer's attention is drawn effectively to the term there is no need to alter the shape of the text. We recognize here, however, that setting a box around the text written in low-caps did not prove itself effective in our study. This again underscores the difficulty of setting hard rules, the importance of experimentation, and the necessity to provide firms with an incentive to improve communications. In the next subpart we describe an approach that may, over time, coalesce into practices that might offer more robust safe havens.

C.The Future of Disclosure

We are at a special moment in the life of consumer law. The new Draft of the Restatement of Consumer Contracts has led to a heated debate among scholars on whether courts should enforce terms in the fine print.[137] One group of scholars believes that market pressures, the existence of an informed minority, and reputational pressures would lead firms to offer efficient terms, and therefore courts should enforce the boilerplate.[138] Another group believes that fine print terms should be presumptively unenforceable absent a showing of informed consent.[139] The Reporters of the Restatement have taken the intermediate view that courts should be permissive in questions relating to contract formation, but at the same time, less permissive with enforcing these terms, seeing fine print terms as potentially procedurally unconscionable.[140]

[137] *See* Adi Robertson, *A Contentious Legal Debate Over User Agreements Has Been Delayed After Elizabeth Warren Called It 'Dangerous',* The Verge (May 22, 2019).

[138] Alan Schwartz and Louis L. Wilde, *Imperfect Information in Markets for Contract Terms: The Examples of Warranties and Security Interests*, 69 VA. L. REV. 1387, 1462 (1983).

[139] Dee Pridgen, ALI's Proposed Restatement of Consumer Contracts – Perpetuating a Legal Fiction, Consumer Law & Policy Blog (June 8th, 2016); Levitin et al., *The Faulty Foundation of the Draft Restatement of Consumer Contracts*, 36 YALE J. REG. 447, 450 (2019) (Noting the existence of disagreement on the "normative approach" of the new restatement). See also Letter to ALI Council, *Reject Council Draft No. 5 of the Restatement of Consumer Contracts* (Sept. 19, 2018) (calling for greater policing of contractual terms by the courts). https://consumerfed.org/wp-content/uploads/2019/01/letter-opposing-council-draft-consumer-contracts.pdf

[140] RESTATEMENT OF CONSUMER CONTRACTS (Preliminary Draft No. 3, October 26, 2017), 77.

The findings here are relevant to both sides of this debate. The failure of all-caps, the most prominent form of smart disclosure, supports skepticism about the meaning of consent to the fine print. The conspicuousness policy is built on the idea that it is possible to avert or mitigate some of the no-reading problem by highlighting key terms. The consumer would read more, it is thought, if reading was made accessible. In practice, however, reading of all-caps seemingly takes longer, the subjective feeling of understanding falls, and recall does not improve over standard print and actually falls for older readers. If a leading form of smart disclosure is ineffective, the justification for the enforcement of fine print terms founders.

On the other hand, the success of some interventions is also quite encouraging. In particular, we draw optimism from the finding that the majority of consumers understood a legal disclaimer when it was presented in an accessible form (the "bold" intervention).[141] This suggests two distinct avenues for future research and policymaking. First, it is possible to effectively highlight information in a way that improves retention and recall. Second, it is possible, at least in lab settings, to reach arguably satisfactory levels of consumer understanding, even with jargon and text filled paragraphs. To the extent such findings carry over to the world beyond the lab, they should inspire some optimism about the possibility of designing better forms of disclosure. Of course, whether consumers *would* read more accessible disclosure is an open question; further, whether consumers *should* read, especially when they lack the power to negotiate terms, is a normative question.

An alternative approach is the use of performance-based contracts, at least as an intermediary process. Performance-based contracts draw from Lauren Willis' powerful proposal that various consumer laws should be based on proof of their effectiveness.[142] That is, courts and regulators should

[141] Consumer advocates may care more about the uninformed minority than any strict majority of readers, while others would note that if a sufficient number of consumers understand contracts, market pressure would lead to more favorable terms for all. *See generally* Schwartz & Wilde, *supra* note 138.

[142] Willis., *supra* note 17. For earlier discussions of this idea, see Howard Beales et al., *The Efficient Regulation of Consumer Information*, 24 J.L. & ECON. 491, 530 (1981) (arguing that

move their "focus from firms' actions to the effects of those actions on consumers."[143] Under a somewhat modified version of her proposal, the application of a performance-based approach would entail that courts should by default hold key terms in the fine print unenforceable unless the firm can affirmatively substantiate its claim that the term was made conspicuous.[144] While one might worry that this will involve a large expense or expenditure of time, we draw some optimism from the limited budget allotted to the Article at hand.[145] The research budget allocated to academics cannot hope to compete with that devoted to marketing. Firms routinely engage in large market research, known as A/B testing, where they test the slightest variations in their marketing communications, sometimes using complex statistical models. These are models, budgets, and techniques that can easily be channeled to support consumer communications.[146]

Performance-based conspicuousness standards have a few important advantages. First and foremost, they channel some of the genius that powers advertising to the copywriting and design of the fine print. "Comprehension standards allow firms to bring the full force of Madison Avenue to consumer education in a way that is not possible for the government."[147] Designing disclosure is hard, and currently, firms have very little motivation to do so. Performance-based standards thus give firms some stake in informed consent, because if their key terms cannot be shown to be effectively communicated, those terms will not be enforced.

firms are best situated to design communications than regulators). *See also* Jeff Sovern, *Preventing Future Economic Crises through Consumer Protection Law or How the Truth in Lending Act Failed the Subprime Borrowers*, 71 OHIO ST. L.J. 761, 821 (2010) (suggesting that lenders should affirmatively demonstrate that "a significant proportion of their borrowers understood the terms of their loans"); M. Ryan Calo, *Against Notice Skepticism in Privacy (and Elsewhere)*, 87 NOTRE DAME L. REV. 1027, 1067 (2012) (proposing comprehension standards for privacy disclosures.).

[143] Willis, *supra* note 17, at 1314.

[144] Here, conspicuous may be understood more broadly, as according with the consumer's expectation rather than comprehensible in isolation.

[145] *See also* Willis, *supra* note 17, at 1366 (arguing that "inexpensive, painless, objective testing of consumer factual knowledge could be surprisingly powerful").

[146] Ron Kohavi and Stefan Thomke, *The Surprising Power of Online Experiments*, HARV. BUS. REV. (2017).

[147] Willis, *supra* note 17, at 1337.

Second, and relatedly, all-caps safe havens have been stifling much-needed creativity in this area. It is quite striking how little the informed consent technology has progressed since the days of the typewriters. The safe-haven approach is arguably the bottleneck and removing it could lead to much-needed innovation. A third point builds on this insight. It is not improbable that effectiveness-based standards are only an interim measure. It is quite possible—almost inevitable—that best practices would quickly evolve once firms have skin in the disclosure game. After all, the marketing industry has certainly developed standards and common practices.

Given the goals and limits of this Article, the full case for performance-based conspicuousness will have to wait for another day. But we believe that our findings here should support this project: It is quite possible to dramatically increase consumer comprehension, although the design of such interventions is not trivial and involves experimentation and cost. The future of disclosure depends on engagement with the ideas of performance-based conspicuousness.

Finally, we should emphasize that the effects of disclosure are heterogeneous and one must be highly cognizant of their effect on vulnerable groups. In our primary experiment, we highlighted how all-caps especially harms older respondents. This is an important conclusion to bear in mind when thinking about the future of disclosure, as the goal may not be to maximize understanding across the board but may well be to minimize misunderstanding across relevant parameters.

VI. CONCLUSION

An old anecdote tells of Niels Bohr, the Nobel-winning physicist, whose door was adorned by a horseshoe. When asked by an incredulous guest whether he believed in such superstition, Bohr replied that "I've been told that it works even if you don't believe in it."[148]

This study explores the common practice of using all-caps in consumer contracts and finds that the belief in their power borders on the superstitious. Courts and legislators endorse this practice as a means of improving consumer consent, given the lack of attention consumers pay to the fine print. In reality, however, all-caps relies on no empirical support and the evidence produced here suggests that all-caps is actively harmful to older readers. The fact that all-caps is so widespread suggests that the stakes of this superstition are significant even for those who do not believe in it. In myriad cases, courts have been enforcing terms against consumers which they erroneously thought consumers notice and understand.

Based on the evidence produced and collected here, we believe that there is a robust case against uppercase. Courts should abandon their reliance on all-caps as a proxy for quality consumer consent and consider other, perhaps more contextual factors.

What may come next is best left to the genius of copywriters and the prudence of lawyers. That courts have given a safe haven to firms that use all-caps has stalled much innovation in this field, but there is great potential for developments of new standards. As this Article demonstrated, the targeted highlighting of key obligations has a strong and significant effect on consumer consent. There are many other possible interventions, but none will emerge so long as uppercase has the upper hand. We trust that this article will help shift the burden of proof back to firms and help prevent future caps-lock.

[148] *I Understand It Brings You Luck, Whether You Believe in It or Not*, QUOTE INVESTIGATOR (Oct. 9, 2013), https://quoteinvestigator.com/2013/10/09/horseshoe-luck//.