The Language of Property: Form, Context, and Audience

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INTRODUCTION

In many areas of the law, the notion of context is more important than ever. The realists and their successors tirelessly have pointed out how older, more "conceptualistic" or "formalist" modes of legal thinking and interpretation obscure the richer reality to which law should respond. Property is one of the main battlegrounds in this struggle. The conventional wisdom that emerged over the course of the twentieth century holds that we should concern ourselves with entitlements—arbitrary bundles of rights, privileges, and the like—and whether we attach the label "property" to any given bundle is a choice that is likewise arbitrary. As long as these choices are arbitrary, entitlements can be designed at will, to any degree of specificity, to further the policymaker's ends. No longer can the owner of Blackacre claim with much force that ownership entails the right to use the resource without interference. As long as the ownership of Blackacre is a bundle of sticks, any given right—say the right to exclude others from a beach—can just as easily be assimilated to anyone's bundle as to the owner's. Thus, the idea that a property right is a right to a thing that avails against the world has been replaced with the idea that a property right is only one possible entitlement plucked from a wide range of equally privileged results.

At first blush, the similarity between a system of entitlements and a language seems to lend further support to this (post) realist position. As is well-known, the relation between words and the things they refer to is arbitrary, the result of conventions that could easily have been different. "Book" could just as easily refer to what "plant" refers to, and vice versa. Nor is how we carve up conceptual space into word meanings completely determined by nature, as can be seen in the cross-linguistic variety of systems of color terms. Moreover, work in the field of linguistic pragmatics—the study of how messages are communicated by using language—has demonstrated the central role of context in the interpretation of utterances. Just as with the bundle-of-rights view of property, bringing in the richness of context has allowed linguists to appreciate language systems' high degree of flexibility. And, as we will see, scholars of linguistic pragmatics and legal realists both define

1. See, e.g., Thomas C. Grey, The Disintegration of Property, in PROPERTY: NOMOS XXII 69 (J. Roland Pennock & John W. Chapman, eds., 1980) (discussing how property rights can be broken down into their constituent parts); Edward L. Rubin, Due Process and the Administrative State, 72 CAL. L. REV. 1044, 1086 (1984) ("[P]roperty is simply a label for whatever 'bundle of sticks' the individual has been granted."); Joan Williams, The Rhetoric of Property, 83 IOWA L. REV. 277, 297 (1998) ("Labeling something as property does not predetermine what rights an owner does or does not have in it."); see also RESTATEMENT OF PROP. §§ 1-4 (1936) (defining particular terms for different kinds of legal relations).

2. Languages split up the spectrum differently, but basic color terms do exhibit some universal features. See BRENT BERLIN & PAUL KAY, BASIC COLOR TERMS: THEIR UNIVERSALITY AND EVOLUTION 7-10 (1969).
themselves in opposition to what they perceive as rigid and overly simplistic “formalism.”

The broadly realist program of paying attention to social context focuses on the benefits of nuance in important ways. For example, splitting up an entitlement into finer bundles can allow specialization, internalization of externalities, and direct assertion of community goals to a greater degree than coarser-grained property rights. The realist program concerns itself with the benefits of detail to and by decisionmakers; and, to the extent realists consider costs, they consider the supply-side costs of writing down rules to delineate the sticks in the bundle, describing the contextual factors relevant to a judgment, and so on. At the same time, realism professes to be concerned with the audience for legally relevant communication. Most often, this takes the form of regarding judges as audiences for communications by various other actors such as contracting parties, legislatures, administrative agencies, or other judges. And part of this court-centric tendency in realism focuses on clearing away obstacles, such as legal formalism, that stand in the way of clear, honest communication by and to judges.

I will argue that this view of property is not wrong but that it tells only one side of a more complex story, and that an investigation of the communicative aspect of property will lead to a more complete view. This Article considers the relationship between context and form, taking into account that the benefits and costs of communication vary with the nature of the audience. Relatively context-sensitive realism and relatively acontextual formalism can be seen as points along a spectrum of methods of striking a tradeoff between communicating a lot to a few or a little to many.

This informational tradeoff points to an unacknowledged tension lurking in the realist project of coupling nuanced decisionmaking with concern for the audience: Not all audiences—especially large and heterogeneous audiences—can process nuanced messages at reasonable cost. The realists and their successors argue that many features traditionally associated with formalism—from literalistic interpretation to standardization of property under the *numerus clausus* principle—are nothing more than archaic relics. Controversy has centered on how far, if at all, the benefits of certainty in the law mitigate the


inevitable incorrect results in some cases—much less the promotion of unattractive and outmoded values.5 But, some of these "formalistic" devices reflect the need to limit the cost of processing messages about legal relations that are broadcast to wide audiences. If everyone in the world is expected to respect an owner's right to Blackacre, the content of that right cannot be too complicated or idiosyncratic without placing a large burden on many third parties. On the other hand, when two parties are deep within an ongoing relationship, their contractual language can be given substantial deference in all its idiosyncrasies. This even extends to a court's enforcing such idiosyncrasies as long as a court's efforts are likely to achieve accuracy at reasonable cost. Various situations fall between these extremes, and the law will accordingly adopt interpretive methods of an intermediate sort.

This Article will argue that much of the structure of property and related law stems from compromises inherent in a system of communication. In both law and linguistics, the less-studied side of communication relates to the audience. Only recently have linguists become sensitive to the differing impacts of addressees, nonaddressee participants, and overhearers on speakers' choice of language style. This adjustment of speaker style according to the nature of the audience is called "audience design,"6 and I will argue that a similar adaptation to audiences occurs in the law. In law, it is often overlooked that information must be processed by those under a duty to respect rights and by those wishing to acquire rights, as well as by those expected to enforce rights. Once the full range of these different audiences and their costs of processing information about rights enter the picture, it is not clear that the detailed picking out of each stick in the bundle is always a good idea.

Because audiences of different types have different abilities to process messages, the nature of the audience has implications for the amount and form of the information communicated. When choosing a mode of communication, the aim is to maximize the net benefits of communication, that is, the excess of the benefits of communication over the costs of production and processing. "Processing costs," in the broad sense in which I use the term, include the costs incurred by a cognitive agent in receiving information from a message.7 Given finite resources, one can communicate a lot to a few or a little to many.

7. Processing can be thought of as converting information into a digital form appropriate to the agent's purposes. See KEITH DEVLIN, LOGIC AND INFORMATION 16-19 (1991) (noting the costs and benefits involved in the process of cognition); FRED I. DRETSKE, KNOWLEDGE AND THE FLOW OF INFORMATION 141-42 (1981) (discussing sensation and cognition). This conversion can be broken down into functions such as filtering for relevancy, accrediting or assessing credibility, decoding, and assimilating. See, e.g., Yochai Benkler, Communications Infrastructure Regulation and the Distribution of Control Over Content, 22 TELECOMM. POL'Y 183, 186-87 (1998).
To be more precise, we need to specify what, from the point of view of processing costs, it means to communicate a lot—and what the relevant characteristics of the audience are. Linguistic semantics is concerned with how various expressions convey information through the conventions of a language. To get a handle on this difficult topic, semantics has traditionally (and fruitfully) borrowed from the study of logic. Both semantics and logic have in turn focused on certain limited but convenient symbolic systems. However, some limitations of this approach have become apparent. One such limitation is that the traditional tools have been so useful that they can disguise the fact that symbols are not the only way to represent information. Recently, a number of mathematicians, philosophers, linguists, and computer scientists have sought to model information independent of representational modes (such as symbols). Representations of all kinds—symbols, diagrams, and even situations in the world—carry information. A first step toward capturing this larger picture is to measure the amount and distribution of information in situations.

For this task, information theory, as developed by Claude Shannon and others from the mid-twentieth century on, is a well-developed tool, and I will borrow its definition of the amount of information. Information theorists concern themselves with the amount of information, and the maximum average flow of information through a given channel—something highly relevant to the early theorists’ focus on applications to telecommunications. This

8. On modeling English using the tools of logic, see, for example, GENNARO CHIERCHIA & SALLY McCONNELL-GINET, MEANING AND GRAMMAR: AN INTRODUCTION TO SEMANTICS (2d ed. 2000); DAVID R. Dowty, ROBERT E. WALL & STANLEY Peters, INTRODUCTION TO MONTAGUE SEMANTICS (1981); BARBARA H. Partee, Alice ter Meulen & Robert E. Wall, MATHEMATICAL METHODS IN LINGUISTICS 317-429 (1990).

9. See, e.g., Jon Barwise & Jerry Seligman, INFORMATION FLOW: THE LOGIC OF DISTRIBUTED SYSTEMS (1997) (developing a mathematical framework for how one medium can carry information about another and applying the framework to problems in philosophy and computer science); Devlin, supra note 7, at 1-13 (discussing the use of logic in understanding information); Dretske, supra note 7, at 3-26 (discussing measurement of the amount of information communicated); Sun-Joo Shin, THE LOGICAL STATUS OF DIAGRAMS (1994) (analyzing the use of diagrams in logic to represent information); Jon Barwise & John Echemendy, Heterogeneous Logic, in DIAGRAMMATIC REASONING: COGNITIVE AND COMPUTATIONAL PERSPECTIVES 211 (Janice Glasgow, N. Hari Narayanan & B. Chandrasekaran eds., 1995) (noting that one must use multiple modes of representation, not search for a universal one); John Perry & David Israel, What is Information?, in INFORMATION, LANGUAGE, AND COGNITION 1 (Philip P. Hanson ed., 1990) (developing a philosophical account of information within situation theory).

10. See infra Part II.A.

11. In communication theory, information content is measured by the minimum number of bits needed to uniquely specify a fact. In using this approach, we are following communication theory in concentrating on the amount of information rather than on the content of the message. See C.E. Shannon, A Mathematical Theory of Communication (pts. 1 & 2), 27 Bell Sys. Technical J. 379 (1948), 27 Bell Sys. Technical J. 623 (1948) (developing a theory of information based on quantity), reprinted as Claude E. Shannon & Warren Weaver, THE MATHEMATICAL THEORY OF COMMUNICATION (1949); see also
quantitative study of information has given us the useful notion of "bits" of information. Thus, if a coin toss can be heads or tails, this can be captured with one binary choice (say "1" for heads and "0" for tails), and is one bit of information. Tossing three coins results in eight possibilities, but can be expressed by three binary digits (hence the name "bits" for the amount of information the binary digits represent); so, if the three coin tosses are heads, tails, and heads, respectively, this can be represented by "101". Here, three binary digits are used to represent one of eight possibilities, the maximum (three bits of information) of which three binary digits are capable. The more improbable the message, the more information it contains, and the longer the shortest corresponding description in a given, explicit language must be. Thus, to take another trivial example, the string \textit{ababab} contains less information than the string \textit{abbaba}. Notice that, given a language of description, the shortest fully explicit description that captures \textit{ababab} would be shorter (something like \textit{"ab} × 3") than the similar description for \textit{abbaba}.

As we will see, a legal message that conforms to an expected general pattern—say a fence around Blackacre, a claim to an approved estate, or a title document in proper recorded form—contains less information than a more idiosyncratic legal claim. In what follows, the key variable will be what I call \textit{information intensiveness}, the amount of information (as just defined) per unit of delineation cost. Consider a hypothetical pair of claims between neighbors over the use of Blackacre, which happen to involve similar levels of delineation cost—an easement and a bilateral contract. The deed granting the easement will typically be more spelled out and will have to conform to the limited menu of easements allowed by property law. The easement is an \textit{in rem} right, which can be enforced against interference by third parties, who will sometimes have to process the information spelled out by the easement-granting deed. The contract, by contrast, can contain more information, and can even use language idiosyncratic to the two parties. This is because, generally speaking, this contract is not relevant to anyone other than the parties (and perhaps their

R.V.L. Hartley, \textit{Transmission of Information}, 7 BELL SYS. TECHNICAL J. 535 (1928) (developing notion of "amount of information"). However, traditional communication theory, concerned as it is with the engineering problem of channel capacity, uses "information" in the sense of average information generated at a source (entropy), whereas we will sometimes be using the notion as applied to individual messages. \textit{See} Dretske, supra note 7, at 3-26 (adapting information theory to individual messages).

12. This corresponds to the fact that \textit{ababab} has more order because it is \textit{ab} three times and the fact that the later parts of the sequence are less surprising than the later parts of the sequence \textit{abbaba}.

13. Easements have been subdivided into affirmative and negative, \textit{see} 2 AMERICAN LAW OF PROPERTY §§ 8.5, .11-.12 (A. James Casner ed., 1952); 4 POWELL ON REAL PROPERTY § 34.02[2][c] (Michael Allan Wolf ed., 2000); 7 THOMPSON ON REAL PROPERTY § 60.02 (David A. Thomas ed., 1994), and into appurtenant and in gross, \textit{see} 2 AMERICAN LAW OF PROPERTY, supra, §§ 8.6, 8.9; 4 POWELL ON REAL PROPERTY, supra, § 34.02[2][d]; 7 THOMPSON ON REAL PROPERTY, supra, § 60.02(f).
successors if it runs with the land).\textsuperscript{14} The contract is more information intensive, but need only be processed by a limited audience. In general, the greater information associated with information intensiveness will require more costly processing, which is central to our concerns. As this hypothetical example suggests, the level of information intensiveness of a given claim can be expected to vary with the size and nature of the audience.

On the audience side, factors directly or indirectly relevant to processing include the audience’s size, background knowledge, heterogeneity, and definiteness. I will call a blend of these factors the \textit{extensiveness} of the audience. Often these factors go together, but they can sometimes point in different directions. Thus, large audiences are often more heterogeneous than small ones. As we will see, these aspects of the audience can likewise be rendered measurable by a focus on (1) the density and multiplexity of the network shared by speaker and audience, and (2) the closeness of the audience physically and psychologically.\textsuperscript{15} As audience size increases, the marginal benefits of intensive communication are likely to decrease and the marginal costs are likely to increase. Thus, to minimize the sum of communication costs, any communication system faces a tradeoff between information intensiveness on the one hand and information extensiveness on the other.

I will argue that law and its institutional context widely reflect this tradeoff between the intensiveness and extensiveness of communicated information. In particular, this tradeoff helps explain differences between various modalities of rights. As we will see, rights and other legal relations that are directed at wider and more heterogeneous audiences tend to be less information intensive than similar rights holding between those in a personal relationship. Rights availing against the “rest of the world”—the so-called \textit{in rem} rights—are simply an extreme case of communication between the holder of the right and a broad and heterogeneous audience of dutyholders.\textsuperscript{16} This tradeoff between the intensiveness and extensiveness of information is inherent in any system of communication. Therefore, the tradeoff should turn up both in law and in natural language. Thus, the first part of the argument will be that law and language both reflect the benefits and costs of information intensiveness and

\textsuperscript{14} Covenants that run with the land are subject to limitations, which can be seen as an application of the \textit{numerus clausus} principle in property law. See Merrill & Smith, supra note 4, at 16-17. Recently, the American Law Institute has adopted a more contractual approach to servitudes than the traditional approach. See Restatement (Third) of Prop.: Servitudes Introductory Note to ch. 4 at 494 (2000); see also id. § 4.1-13, (setting up framework for servitudes using intent-based interpretive method and default rather than mandatory rules).

\textsuperscript{15} See infra Part II.B-C.

audience extensiveness. However, I will further argue that the particular devices by which the law shapes communication to reflect the tradeoff between intensiveness and extensiveness of information are very much like devices mediating similar tradeoffs in natural language, and for similar reasons. Indeed, because more is at stake—potential legal liability, at least—many devices that speakers of a natural language use voluntarily to accommodate their audiences are adopted as mandatory rules in the law. Legal intervention, as it turns out, occurs where the communicators of legally relevant information cannot be counted on to internalize the costs imposed on wider audiences.

One set of such devices that mediate this informational tradeoff can be viewed as "formal" or "formalist," and I will be providing a partial functional explanation for these devices as limiting information intensiveness where communication is directed to larger and more impersonal audiences. Because the words "formal" and "formalism" have been used many ways, a word on what is meant by these terms here is in order. I will focus on formalism as the opposite of contextuality. That is, an expression is formal to the extent that its meaning is invariant under changes in context. One of the virtues of this definition, besides its explicitness, is that it captures what is common among a wide variety of types of formalism. Thus, mathematical expressions are deemed formal because their interpretations vary little depending on context, whereas the meanings of expressions in everyday language often are deemed informal because they vary a lot by context. For example, "You're out" can mean one thing in a baseball game, another in poker, and another on the doorstep. But even within these domains, variance with respect to changes in context itself can vary: Much mathematical writing, especially for other mathematicians, is more abbreviated and relies on context for interpretation, while everyday speech also varies in its level of formality. This correlation between levels of formalism and the nature of the audience will be crucial in what follows.

Under this approach, different types of formalism correspond to different types of context. As we will see, conversational English is informal because it requires much background knowledge about context. Thus, to understand "It's cold in here" as a request to close the window requires a knowledge of many things, including the purposes of conversation, the nature of windows, and so on. Formalism, thus, does not "inhere" in expressions. Rather, expressions are formal to the extent that their interpretations do not vary by context. In a communicative system, expressions do not exist in isolation, but are coupled with interpretive rules. Sometimes, dependence on context (antiformalism) is a matter of the meaning of individual words: Expressions containing words like "here" and "this" require some anchor to context, and pronouns like "it" and "they" vary in their reference according to context. These words cause

expressions that contain them to be less formal than expressions containing adverbial phrases ("It's cold in Chicago") or nouns ("John," "Mary"). Further, the rules applying to sentences or larger units of discourse can more or less cause meaning to vary by context, and so contribute to an expression's lack of formalism. Thus, a literal interpretive method would not allow the inference from "It's cold in here" to "Please close the window," but a more contextual one (typical of face-to-face conversation) would allow it. Finally, modes of communication (styles) can be termed formal based on the average formalism of their expressions. And, at the level of whole languages, systems of such expressions and the rules interpreting them can be termed formal or informal according to the general level of formalism (degree of invariance of interpretation under different contexts) of the average or typical expression within them. Thus, a computer language or the language of first-order logic is more formal than everyday English.

This approach will highlight how formalism is not an all-or-nothing affair in either language or law, but is rather a matter of degree—what I call "differential formalism." To be termed "formal" an expression need not be one hundred percent invariant in interpretation with changes in context. Rather it should be near the end of a spectrum of such variability. Interestingly, such variability is not random. In legal (as in everyday) communication, formalism can be expected to vary in strength according to the nature of the audience. More extensive audiences usually call for more formality in communication.

Part I of this Article starts with a particularly dramatic illustration of legal communication with extensive audiences drawn from possession and related law. In making a possessory claim, one is asserting a right against the rest of the world, and the claim must be communicated with the widest audience possible. Not everyone in the world, though, will always interact with the asset in question. Sometimes, only a small well-defined and homogeneous group will likely come into conflict with the possessor. Courts' decisions seem to reflect a concern with the processing burden on the "audience" of dutyholders, who must process rights in order to respect them; and this burden and concern vary according to the nature of the audience. Where assets are in general circulation and the audience is extensive, the law tends to force communication into a simplified, information-unintensive mode. Required background knowledge is kept to a minimum and piggybacks on everyday conventions.

Part II draws an extended analogy between law and natural language and presents a simple model of the tradeoff between information intensiveness and information extensiveness, in situations in which speakers sometimes do not internalize the full costs of an audience's processing of information. In everyday, face-to-face communication, processing costs are usually internalized, because otherwise the audience will not understand what the speaker wants to communicate. As for wider audiences, they usually can

18. See infra Part III.
ignore messages they do not want to deal with. Examples in which significant externalized processing costs exist (but may not be internalized by the speaker) include spam e-mail, junk faxing, and possibly the use of certain difficult-to-interpret marks in the hospital context, such as directions for surgeons as to which limb to operate on. Likewise, in a legal context, someone communicating a claim to a set of dutyholders may cause processing costs for third parties without internalizing the costs. Thus, in the example of the easement versus the contract, an idiosyncratic easement enforceable against third-party interference can cause third parties—such as potential purchasers of this and other property, and potential violators—to be on the lookout for idiosyncratic rights.¹⁹

I offer a simple model of this tradeoff and explain how this externality arises. The Article catalogs costs that are most likely to be externalized and relates them to certain types of audiences, such as tortfeasors and other market participants, who are not in a direct relationship with the creators of rights and who often do not share the same background knowledge. Here, the law relies on a variety of devices to prevent externalization of third-party information costs. Strikingly, these devices bear a close resemblance to those used in natural language on a nonmandatory basis to mediate the similar tradeoff between information intensiveness and extensiveness of the audience that occurs in that context. I do not claim that the amount of third-party processing costs avoided is the optimal one, but I do argue that there are mechanisms by which these devices have made their way into legal doctrine.

Part III applies this theory to several areas of property and related law. First, I argue that the adoption of recording acts and their features reflect all of the devices identified as limiting the burdens of processing on third parties. Second, I show that the correlation between extensiveness of the audience and mandated unintensiveness of legally significant communication holds in a variety of areas beyond land law, including patent law, copyright law, and innovative forms of intellectual property such as that suggested by the approach

¹⁹. It might be thought that, at least in the case of dividing rights, third parties will not care about the way the rights are divided. ↩️ Henry Hansmann & Reinier Kraakman, Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights, 31 J. Legal Stud. S373 (2002). But Hansmann and Kraakman’s own example of artists’ rights shows that this does not follow. Consider a legal system in which an artist can sell a work subject to a right to control the display, where the right is enforceable in damages. As Hansmann and Kraakman note, the level of damages will depend on features of the artist, such as the nature of her other work. If so, then “carving out” the artist’s right from the package of full ownership rights will have a variable effect on outsiders according to the features of the artist. Potential violators will have some incentive to know about particularly easily injured artists, something which under the alternative regime of a numerus clausus forbidding artists’ rights would not be the case. Similarly, in the easement example in the text, if the damages or the ease of getting an injunction depended on features of the rightholder, then idiosyncratic easements could raise more third-party information costs than would a fixed menu of easements.
of the Supreme Court in *International News Service v. Associated Press.* 20 Finally, I show that this correlation holds within contract law itself—an area of the law known for its free customizability. In a dramatic example of differential formalism, courts use more formalistic methods of contractual interpretation precisely where third-party information cost externalities are most likely. These contexts include security interests, real estate, third-party beneficiaries, and offers. In particular, identifying the informational tradeoff and the processing-cost externality provides for an explanation of why the law often adopts differential formalism: The degree of formalism in courts’ reasoning and interpretation is related to the size of otherwise uninternalized third-party processing costs.

I. AUDIENCES IN POSSESSION AND RELATED LAW

The law adopts a number of different modes of communication. These modes will turn out to fit a pattern based on their costs and benefits: The law allows more information to be communicated to small audiences and limits the processing demands on wider, more anonymous audiences. In this Part, I introduce this informational tradeoff. To do so, I examine the law of possession and issues relating to the scope of ownership. I begin with some classics of possession law, the fox and whaling cases, which show a tendency towards simplification where third parties need to process information about claims. I then turn to the related law of manure, which varies greatly according to the nature of the audience. In these areas, courts’ decisions reflect the informational tradeoff by keeping conventions simple and general for the most widespread and anonymous audiences—the audiences who are most likely to lack background knowledge.

The area of property that has been most extensively analyzed as involving communication with varying audiences is the law of possession. A brief look at possession will illustrate the informational implications of audiences of different natures and sizes. The law of possession shows a tendency towards simple solutions when large and heterogeneous groups of people must respect rights.

This tendency is most dramatic in those ordinary situations least likely to result in litigation. The law of possession rests, for the most part, on everyday knowledge about what constitutes a thing and whether the thing is likely to be owned or not. Property rights are good against the world, and the use of a thing as a focal point for the right allows those in a right-duty relationship of potential conflict to interact in an anonymous, informationally unintensive, fashion. 21 If the law of possession piggybacks on nonlegal knowledge about

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21. See, e.g., BRUCE A. ACKERMAN, PRIVATE PROPERTY AND THE CONSTITUTION 116 (1977) ("[M]ost of the time Layman negotiates his way through the complex web of property
things and people's relationships to them, then the communication of those legal rules will come at a lower cost. Furthermore, in both law and norms, we might expect less fine-grained solutions than a pure efficiency (or fairness) solution would dictate if there were no communication costs. 22 For example, the norm of "fencing in" prevails uniformly in Shasta County regardless of whether the legal rule is fencing in or fencing out, and regardless of whether farmers outnumber ranchers or vice versa. 23 Land provides a convenient low-cost anchor for a wide variety of exclusion rights, and assimilating the conflict over cattle trespass to the package of in rem rights in land is a low-cost solution.

The law of trespass itself, with its formalistic, bright-line ad coelum rule also economizes on communication costs to the extent that it accords with widespread nonlegal knowledge about boundaries and does not require extensive knowledge about individual use conflicts. 24 Thus, in many resource conflicts, the benefits of multiple use do not extend to the entire world. Instead, the owner and (possibly) a small group of others have a special advantage to use (or preserve) the resource through specialization, planning, and investing. Thus, as between the owner and the vast majority of others, an exclusionary strategy of "keep off" achieves most of the attainable benefit at low cost. 25


24. The full statement of the maxim is cuius est solum, ejus est usque ad coelum et ad inferos (he who owns the soil owns also to the sky and to the depths). The maxim is routinely followed in resolving issues about ownership of air rights, building encroachments, overhanging tree limbs, mineral rights, and so forth, and is subject to certain limited exceptions for airplane overflights, for example. See Brown v. United States, 73 F.3d 1100, 1103-04 (Fed. Cir. 1996) (holding that the usual rule does not apply in the case of military overflight — Thomas W. Merrill, Trespass, Nuisance, and the Costs of Determining Property Rights, 14 J. LEGAL STUD. 13, 26-35 (1985).

25. See Smith, supra note 16 (setting out theory based on different cost structures along spectrum from rules of exclusive access to governance of use). Cheung divides the rules into three classes—exclusion, regulation, and transferable property rights—which Carol Rose has extended and used to explain the evolution of pollution control regimes. Steven N.S. Cheung, The Structure of a Contract and the Theory of a Non-Exclusive Resource, 13 J.L. & ECON. 49, 64 (1970); Carol M. Rose, Rethinking Environmental
In most ordinary possession situations, an unintensive message is communicated to the widest possible audience. The interactions between in rem rightholders and dutyholders are mediated by a simply defined thing; thus, the rightholders and dutyholders need not possess any information about each other. For example, I know not to take a car parked on the street without knowing anything about its owner (other than it is not me). These everyday situations are usually uncontroversial, and are even hard to notice because chaos in such a basic social institution used by everyone all the time would be extremely costly.

As with most case law, the law of possession tends to focus on marginal cases, but, here too, we can discern the effects of the tradeoff between communicating intensively and reaching an extensive audience. As Carol Rose has pointed out, possession requires a kind of communication: By means of a claim, the possessor communicates with the audience of potentially interested parties. Furthermore, courts deciding possession cases have to choose whose set of symbols—and, correspondingly, which audience—counts. Rose illustrates this point using the famous case of Pierson v. Post. Post, the plaintiff at trial, had long been chasing a fox with hounds upon an unpossessed beach when Pierson suddenly appeared and bagged the fox. The question is what act is required in order to take possession of a wild animal. The majority, after much citing of authorities, decided on the “certain control” test, while the dissent argued for the “hot pursuit” test. The case is usually seen as a tradeoff between the need to encourage fox hunting effort and the need for clarity in the rule. The ability of saucy intruders to snatch the fox is thought to lessen the incentive to chase after foxes (although this is an empirical question, especially if the hunting is recreational). On the other hand, control of the fox might be an easier standard for a court to apply than pursuit: What counts as hot pursuit?

Rose points out that the question can be framed as one of communication: Whose symbols count—only those of the community of fox hunters or those of nonhunters as well? As Rose notes, the latter is certainly a wider audience, but even under the majority’s “certain control” test, “the definition of first

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26. See, e.g., Penner, supra, note 21, at 29 (“Things’, then, whether physical things or states of affairs such as bodily security, mediate between rights in rem and duties in rem, blocking any content which has to do with the specific individuality of particular persons from entering the right-duty relation.”).

27. See, e.g., Penner, supra, note 21, at 29 (“Things’, then, whether physical things or states of affairs such as bodily security, mediate between rights in rem and duties in rem, blocking any content which has to do with the specific individuality of particular persons from entering the right-duty relation.”).

28. Id. at 175.

29. Id. at 175.

30. For a recent example of a law-and-economics analysis focusing on these factors of fox-hunting incentives and enforcement costs, see Dhammika Dharmapala & Rohan Pitchford, An Economic Analysis of ‘Riding to Hounds’: Pierson v. Post Revisited, 18 J.L. ECON. & ORG. 39 (2002).

31. Rose, supra note 27, at 85.
possession depended on a particular audience and its chosen symbolic context; some audiences win, others lose.”32 Also, one aspect of the choice of symbol is whose notion of proper use counts, where proper use can be regarded as important for notice; here, the communicative or consent theory and the labor or reward theory tend to converge.33 As we will see, a major strand in the theory of meaning is based on the idea that people will figure out intent by ascribing rational behavior to a communicative partner.34

But this type of communication requires background knowledge, and resolution of the question of which audience will process acts of possession, and at what cost, depends on what background knowledge we can assume. The choice of whose symbols count implicates information intensiveness and the nature of the audience. One way to frame the question is to note that a rule that control is required for possession is appropriate for a wide audience and for a wide range of cases. It can apply to many resources without relying much on detailed information about those resources; and, because of its lack of detail, the rule is correspondingly easy to communicate to the world. These two reasons—lack of detail and ease of broadcasting—are related in the sense that having one general norm rather than many specific ones reduces what someone who interprets the acts of possession needs to know.35

Now consider Pierson v. Post again. The certain-control rule is naturally addressed to a larger and more anonymous audience, whereas the hot-pursuit rule, with its greater detail, is more appropriate to a small group. The small group has more at stake, and processing more detail is both easier and more worthwhile for them than for the average member of a general audience. Interestingly, Livingston’s dissent, after advocating arbitration by a panel of sportsmen, argued that the result in an arbitration would have “properly disposed” of the fox and would have been consistent with usage and custom “well-known to every votary of Diana.”36 In other words, Livingston not only believed that hunters would reach the correct result but that hunters generally would already know it, thus solving the information problem. To this narrower audience might be contrasted the wide audience implicit in the majority’s approach. Both majority and dissent characterized the sources cited in the majority opinion—from Pufendorf to Grotius to Barbeyrac to Blackstone—as writers on “general principles of law” or “general law.”37 The goal for the majority, then, was not just to achieve certainty, but to achieve it at a low cost to a wide audience, not all of whom are concerned with foxes. Although one could imagine very particularized brightline rules—such as the one cited (quite possibly ironically) by the dissent that pursuit with large dogs and hounds will

32. Id.
33. Id. at 78-82.
34. See infra Part II.A.1-2.
35. See Merrill & Smith, supra note 22, at 388-92.
36. 3 Cai. R. at 180.
37. Id. at 177, 181.
give possession but not pursuit with beagles only—such rules do impose a large processing burden on nonhunters. Thus, particularized brightline rules would not impose high administrative costs on courts but would be costly for individuals in the world attempting to process them.

In other words, the constraint here may be on the processor’s or receiver’s end, rather than on the limited powers of a court to create a detailed rule. It is true, as Richard Epstein argues, that courts, as compared to zoning boards, can only do so much to make rules of possession precise. But this is partly because the audience for a zoning decision is narrower and a zoning board may be able to reach its audience at lower cost. Possession, however, relates to how we define objects for purposes of ownership, which involves the widest set of anonymous interactions among the most heterogeneous audience that the law addresses. What is needed is a determinate rule that will not lead to multiple interpretations, even by those without detailed background knowledge. The occupancy or certain-control test does achieve these goals, as long as the certain control is apparent to the relevant audience, which, in the case of possession, is prototypically the entire world.

Another favorite of possession law makes even more explicit the audience’s burden in terms of the amount and variety of information it can process. In Ghen v. Rich, one Ellis found a fin-back whale washed up on the beach, which had been shot by the plaintiff with a marked bomb-lance seventeen miles away. This particular type of whale swam fast, and so was shot with a bomb-lance, which would cause it to sink to the bottom, and then rise to the surface a few days later. Under a local custom, those fin-back whales that floated to shore should be reported to Provincetown, the port for fin-back whalers, and the owner would come and remove the whale and pay the finder a small fee. Instead, Ellis advertised the whale for sale at an auction and sold it to the defendant. The court noted cases in which the rule for possession of whales differed, and Robert Ellickson has shown that these various rules make sense according to the different nature of various types of whale. In this case, however, Ellickson notes that the rule giving the whale to the one who kills it and a small fee to the finder accords with the opportunity cost of labor and economizes on supervision costs. Crucial to the emergence of the norm was that the community was close-knit enough that off-shore whalers

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38. Id. at 182.
39. See Richard A. Epstein, Possession as the Root of Title, 13 GA. L. REV. 1221, 1222-23 (1979) (arguing that, because of courts’ modest remedial powers, their “definition of rights is therefore apt to be made along certain ‘natural lines’; there will be broad general propositions that can apply to all against all, and there will be no reference to the numbers or formulas . . . that can be generated by direct administrative controls, such as zoning.”).
40. 8 F. 159, 159-60 (D. Mass. 1881).
42. Ellickson, supra note 41, at 93.
could influence beachcombers who were not directly connected to the whaling industry.\textsuperscript{43} One aspect of this interaction is communication: Those likely to find whales on the shore must reasonably be expected to know of the rule. This, in turn, requires that the problem be important enough or the group affected small enough that the advantages of a separate, special rule outweigh the convenience of lumping this situation into larger norms of possession that require “certain control.”\textsuperscript{44} The court addressed this problem directly, noting that the rule was of limited application, could “affect but a few persons,”\textsuperscript{45} and was “not... open to the objection that it is likely to disturb the general understanding of mankind by the interposition of an arbitrary exception.”\textsuperscript{46}

Indeed it is a theme in possession cases, and whale cases in particular, that the “general” common law is at least a strong default—if not immutable—because of the informational problem involved in processing by a wide audience. The common law was regarded as “general” and of wide applicability, and its very wideness was one of its principal advantages. As Justice Story, sitting as Circuit Justice for the United States Court of Appeals for the First Circuit, observed in \textit{The Reeside}:

I own myself no friend to the almost indiscriminate habit of late years, of setting up particular usages or customs in almost all kinds of business and trade, to control, vary, or annul the general liabilities of parties under the common law, as well as under the commercial law. It has long appeared to me, that there is no small danger in admitting such loose and inconclusive usages and customs, often unknown to particular parties, and always liable to great misunderstandings and misinterpretations and abuses, to outweigh [sic] the well-known and well-settled principles of law.\textsuperscript{47}

It is not just that the common law has gravitated to clear rules, but that it provides a very few rules of general application that can be easily used by a general audience.

At first blush, the whaling cases seem to belie the preference for generality in the common law of possession, but, unlike with other possession cases, the customs invoked in the whaling cases are directed to a highly focused and specialized audience (whalers and those in whaling communities). For example, Story’s defense of general rules was quoted but seemingly not followed in another famous whaling case, \textit{Swift v. Gifford}.\textsuperscript{48} In that case, the court held that, as between two ships claiming the same whale, the one that put the first harpoon into the whale would get the whale, even if another ship killed

\begin{itemize}
  \item \textsuperscript{43} \textit{ld}. at 93-94.
  \item \textsuperscript{44} Again, contrast Shasta County, where the audience is wider and the norm is less fine-grained. \textit{See supra} notes 22-23 and accompanying text.
  \item \textsuperscript{45} \textit{Glen}, 8 F. at 162.
  \item \textsuperscript{46} \textit{ld}. (quoting \textit{Swift v. Gifford}, 23 F. Cas. 558, 559-60 (D. Mass. 1872) (No. 13,696)).
  \item \textsuperscript{47} 20 F. Cas. 458, 459 (C.C.D. Mass. 1837) (No. 11,657).
  \item \textsuperscript{48} \textit{Swift}, 23 F. Cas. at 559.
\end{itemize}
the whale first.\textsuperscript{49} This result accords with the prevailing custom among whalers, but not necessarily with the general law of possession. Noting the lack of resonance of Story’s defense of general rules in whaling cases, Epstein argues that the problem is a tradeoff between ease of administration and efficiency of the rule. To this we can add that all the cases also reflect a tradeoff between the intensiveness and extensiveness of information. Thus, in \textit{Swift}, after quoting Story and noting that many similar remarks have been made by eminent judges, Judge Lowell observes:

Principles of law differ in their importance as well as in their origin; and while some of them represent great rules of policy, and are beyond the reach of convention, others may be changed by parties who choose to contract upon a different footing; and some of them may be varied by usage, which, if general and long established, is equivalent to a contract.\textsuperscript{50}

In modern terms, the common law supplies rules ranging from default to mandatory,\textsuperscript{51} and one factor pushing in the direction of mandatoriness is the nature and scope of the informational demand made upon dutyholders. A norm for a group such as whalers would not implicate a wide audience, and the intensity of the whalers’ focus on the problem of whales would call for “greater precision” as among themselves.\textsuperscript{52} In an industry-internal case (whaler versus whaler), custom was easiest to use: The group had a large stake and much background knowledge.\textsuperscript{53} We expect both that the general rule will be a somewhat sticky default and that exceptions will be made, if at all, where the audience is less extensive. It would be very surprising to see an information-intensive rule being adopted for extensive audiences and simpler rules being imposed on smaller, more expert audiences.\textsuperscript{54}

\begin{footnotes}
\item[49] \textit{Id.} at 559-60.
\item[50] \textit{Id.} at 559.
\item[52] \textit{Swift}, 23 F. Cas. at 559-60.
\item[53] Interestingly, Epstein argues that \textit{International News Service v. Associated Press}, 248 U.S. 215 (1918), was rightly decided as long as the Court was correct about the custom in the news business to respect rights to hot news\textsuperscript{Richard A. Epstein, International News Service v. Associated Press: Custom and Law as Sources of Property Rights in News, 78 \textit{Va. L. Rev.} 85 (1992).} Epstein takes Story in \textit{The Reeside} to be making a point about administrative ease, which should give way as long as the court can understand the custom at reasonable cost. \textit{Id.} There is, however, an informational dimension to \textit{INS}, which Tom Merrill and I have argued was the motivation behind Judge Learned Hand’s attempt to cabin \textit{INS} in the case of \textit{Cheney Bros. v. Doris Silk Corp.}, 35 F.2d 279 (2d Cir. 1929); new forms of property are not for courts to create. Merrill & Smith, \textit{supra} note 4, at 19-20. The \textit{INS} case raises concerns not just about administrability; the case would also be troubling to the extent that a special rule for hot news would either place duties on people outside the news business or undermine the expectation that the general common law rules would retain their generality elsewhere. See also \textit{infra} notes 250-51.
\item[54] Thus, the prediction is of the trend, not of the exact level of information intensiveness. Nor does a failure to make an exception for every audience that might count as “expert” count as a counterexample. Thus, the general rules of possession sometimes
\end{footnotes}
As mentioned earlier, one reason a small group that shares background information will tend to have a detailed rule is that its members have a lot at stake. According to the well-known Demsetz hypothesis, we should expect the emergence of more property rights as resource values rise and so more is at stake. Demsetz’s classic example was the emergence of family property in beaver-hunting territories among the Montagnes in eastern Canada with the advent of the fur trade. Ellickson narrows this hypothesis in arguing that close-knit groups will reach efficient norms. Close-knit groups have a variety of advantages including low-cost communication, homogeneity of knowledge, opportunity to monitor, and so on. If we focus on the processing component of communication, a close-knit group has advantages in the Demsetzian creation of detailed rules. From a processing point of view, a very specific rule presents a high processing load on a small group. However, the load can be tailored to the background knowledge that the members of the group share or, conversely, they can develop the background knowledge necessary to support the specific rule. Thus, information intensiveness will increase with a group’s small size and close-knit nature, as well as with the amount at stake.

This same concern with the intensiveness versus extensiveness of information surfaces not only in possession cases but also in those that deal in a related way with the same resources. Consider the many cases that deal with possession of manure and related matters. The possession aspect comes up in the famous case of Haslem v. Lockwood. In that case, the plaintiff had scraped up manure from the roads, where it was a nuisance, and into piles on the side of the roadway. He left the piles there in the evening intending to remove them the following day, but the next morning the defendant carted off the manure. The court held that gathering up the manure into piles gave the plaintiff a reasonable time to remove it and that the plaintiff was therefore the owner of the manure. Again, exercising labor to increase value is taken as a

hold even in the face of fishing custom, although even here one might worry about nonexperts blundering in. See Young v. Hichens, 115 Eng. Rep. 228 (Q.B. 1844) (holding that partial encircling without actual capture gives no rights of possession). Furthermore, in some more specialized contexts, the law gives tort rights against certain activities, in the nature of unfair competition, rather than ownership of an asset. For examples on the edge of property law, see id.; Keeble v. Hickeringill, 91 Eng. Rep. 659 (K.B. 1707) (holding that plaintiff did not have ownership of ducks, did have a right against malicious interference with access to ducks, and would have no right against competing duck decoy).

56. Id. at 351-53. For a discussion of the controversy surrounding the origins of beaver-hunting territories and an interpretation of this as an example of a “secommons,” Henry E. Smith, Secommon Property Rights and Scattering in the Open Fields, 29 J. LEGAL STUD. 131, 143 (2000).
58. Ellickson, supra note 23, at 177-82.
59. 37 Conn. 500 (1871).
60. Id. at 507.
communicative act about the intent to appropriate.  

So far, this is just another possession case. But the lawyers and the court were both aware that a large jurisprudence of manure had by then developed. This was because manure was both a valuable asset in an agricultural society and did not exactly fit the existing common law categories of incidents to real estate. It was not a fixture, because it was not attached to the land (especially when in piles); and it was not an "emblement," a crop produced through the tenant's labor. This ambiguous status of rights to manure as an incident to property in land prompted leading writers of an earlier era to devote a chapter to manure (in between the chapters on fixtures and emblements).

In this law of manure, too, there seems to be a sensitivity to the informational demands of the rules. For the most general audience, a very general rule applied. There is a background common law rule of long vintage to the effect that manure is a chattel—personal as opposed to real property—a distinction that once mattered even more than it does today. In cases like Haslem, the general rules for possession of personal property apply to manure.

Courts also applied this general common law rule that manure in a heap is personal property when deciding whether manure would come into the hands of the executor as personality of an estate or would go with the land directly to the heir. Here it is difficult to say that there is reliance on the rules, but the context is one in which the parties, especially the executor, cannot be presumed to know of special agricultural rules regarding manure. Sticking to the general common law rule imposes less of an informational burden on such parties.

This rule that manure is personal property came to be subject to several exceptions in more specialized contexts. In numerous nineteenth-century cases, American courts fairly consistently held that, absent an agreement to the contrary, a tenant under an agricultural lease would be under a duty to use good husbandry and to use the manure as fertilizer on the leased land. No such

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61. See Rose, supra note 27, at 78-82 (discussing possession cases from point of view of labor and communication theories).

62. 1 JOHN CHIPMAN GRAY, SELECT CASES AND OTHER AUTHORITIES ON THE LAW OF PROPERTY 641 (1888); 2 H. TIFFANY, TIFFANY ON REAL PROPERTY §§ 627-629 (3d ed. 1939).

63. Carver v. Pierce, 82 Eng. Rep. 534, 539 (K.B. 1647) (holding that an action for slander would lie for uttering, "Thou art a thief, for thou hast stolen my dung" because manure is a chattel, making it theft to take it) (also called Yearworth v. Pierce, 31 Aleyn (K.B. 1647)); 2 TIFFANY, supra note 62, § 629; SAMUEL TOLLER, THE LAW OF EXECUTORS AND ADMINISTRATORS *150 (7th ed. 1838); 11 CHARLES VINER, GENERAL ABRIDGMENT OF LAW AND EQUITY 175, ¶ 32 (2d ed. 1791).

64. Pinkham v. Gear, 3 N.H. 484 (1826); 2 TIFFANY, supra note 62, § 629. But see Fay v. Muzzey, 79 Mass. (13 Gray) 53 (1859). For a contemporaneous exposition of the rule about personality versus royalty going to the executor and the heir, respectively, see JOSEPH R. SWAN, A MANUAL FOR EXECUTORS AND ADMINISTRATORS IN THE SETTLEMENT OF THE ESTATES OF DECEASED PERSONS 23-44 (1843).

65. See, e.g., Lassell v. Reed, 6 Me. 222 (1829); Daniels v. Pond, 38 Mass. (21 Pick.) 367 (1838); Hill v. De Rochemont, 48 N.H. 87 (1868); Middlebrook v. Corwin, 15 Wend. 169 (N.Y. 1836); Lewis v. Jones, 17 Pa. 262 (1851). But see 2 KENT'S COMMENTARIES 346,
duty applied to other nonmanure personal property on the land. This rule of good husbandry was, in turn, fine-tuned to include only manure produced from animals grazing on the land (as opposed to that produced by animals eating feed brought in from outside). The good-husbandry rule in all its detail was addressed to a very experienced audience who could be expected either to be already following it or to be able to learn of it at lower cost than the average member of the public.

Interestingly, in cases that fall somewhere in between the relatively intense personal relationship of landlord and tenant and the relatively less personal or consensual relation of executor and heir, we find an intermediate approach to the manure problem. Most courts went beyond the landlord-tenant context and held that in a sale of agricultural land, the default was that the manure would go with the land despite its status as personalty. Likewise, most, but not all, courts held that a mortgagee lending to an agricultural landowner could not seize manure on the land. Mortgagees probably could be presumed to know about agriculture, but less so than a tenant farmer. Thus, in these cases of semispecialized audiences, courts were somewhat more willing, but still reluctant, to apply the specialized good-husbandry exception to the manure-as-personalty rule.

Generally, in manure cases, what seems to have been a custom became a default rule. This is a familiar story; but, interestingly, the exceptions to this expansion of the special rule occur in situations where the informational burden of a special rule for manure would be cast upon a wider and less expert audience. Two aspects of the case law point to the importance of the informational tradeoff. First, as already noted, there seems to be a tendency to apply the rule more consistently and confidently in the most personal contexts

347 (12th ed. 1884). The major exception is North Carolina, which may have applied the rule that the tenant could remove manure at the end of the term simply because no evidence was presented of a contrary custom. See Smithwick v. Ellison, 24 N.C. (2 Ired.) 326 (1842); see also 2 Kent's Commentaries, supra, at 347. For the English approach, see Needham v. Allison, 24 N.H. 355 (1852).

66. See, e.g., Needham, 24 N.H. 355 (holding that if the manure came from animals housed on the land but not grazing on it, then the rule was held not to apply and the manure was the tenant's personal property).

67. Generally, the law seems to adopt intermediate types of intervention—between defaults and mandatory standardized rules—in situations that present intermediate levels of information cost. See Merrill & Smith, supra note 16.

68. See, e.g., Kittredge v. Woods, 3 N.H. 503 (1826); Goodrich v. Jones, 2 Hill 142 (N.Y. 1841). One often-cited case, Ruckman v. Outwater, 28 N.J. 581 (1860), held that in a sale manure would be treated as personalty and not pass with the land to the grantee, thus applying the general common law rule. The court believed that a buyer could contract around the rule. This begs the question of what the default should be, but note that, in the sale context, it is somewhat less easy to assume that the buyer would treat the manure as belonging to the land and it is less clear than in a lease whether the buyer's purpose is even agricultural.

69. See, e.g., Perry v. Carr, 44 N.H. 118 (1862); Sawyer v. Twiss, 26 N.H. 345 (1853). But see Staples v. Emery, 7 Me. 201 (1831).
where both parties share agricultural background knowledge. Second, the courts clearly believed that the custom of using the manure on the farm was efficient but shied away from applying this rule everywhere it made sense (at least to the courts). To modern eyes, the courts seem very preoccupied with formal rules that seem to make little sense. However, as in the whaling cases, the courts erred on the side of generality, which meant presenting wider audiences with an easier processing task.

One key issue in possession and related cases is the ease of communication and cost of processing by the relevant audience. If the interaction over a given resource involves enough people who are outside the most interested group (e.g., nonhunters versus hunters) and who do not have much of a stake in the relevant resources, then the processing load on those people is relevant. This can also give a partial justification for courts’ heavy reliance on old writers and general common law rules: The use of such sources and rules that are concerned with the general possession problem will lead to less communication intensive rules that are, in turn, more appropriate for a larger, more anonymous audience.

Thus, the ease with which courts applied the special good-husbandry rule in the landlord-tenant context but their increasing reluctance to apply the similar rule in less close-knit contexts does not reflect formalism across the board, but rather a differential degree of formalism that, in turn, reflects the informational problem. One may say that the courts of the day were too formalistic overall. However, the softening of formalism in more personal contexts makes sense from an informational point of view.

As I will argue later, one facet of the choice of symbols and audiences is the tradeoff between the intensiveness and extensiveness of information. The larger and more diverse the target audience, the more courts will intervene to enforce a limit on the intensiveness of information carried by the set of symbols. As we have seen, this tradeoff looms large within the law of possession and incidents to real property; and, as we will see, it can be traced through the law more generally.

II. AN INFORMATIONAL TRADEOFF IN LANGUAGE AND THE LAW

The communication of legal relations is subject to a tradeoff between intensiveness and extensiveness of information: For the same cost, one can communicate a lot to a small, close-knit audience or a little to a large, anonymous audience. Natural language possesses certain features that reflect this tradeoff, features that also appear in the law.

Because the stakes can be quite high in the law, the costs involved in the informational tradeoff sometimes require intervention, so that they may be more fully internalized by those sending messages about legal relations. The types of information that are communicated about the legal relation include the existence and reliability of a right, its scope and its type (e.g., claim, privilege,
etc.), and the remedy for its violation. All dutyholders, including potential violators and purchasers, would be concerned with some or all of this information. Prospective purchasers, in particular, will want to know what they need to do to acquire the rights that they desire and the probability that the present holder has the rights to transfer.70

Law involves communication of information. This communication can be direct, as it sometimes is between lawmakers and those governed by law. However, as we will see, often this communication is indirect, as where lawyers and journalists mediate between legislatures, courts, and agencies on the one hand and between clients and the public on the other. At other times, the law sets up a framework within which people can make legally significant communications to each other. Thus, contract and property law specify how to promise or claim possession in a manner that will obligate others to respect such a claim. In all these cases, the law involves the transfer of information about legal relations.

To be sure, communicating information is not all that the law—or language—does, and there are likely to be parallels between other aspects of legal communication and natural language, such as expressing solidarity and engaging in strategic ambiguity.71 But, the communication of information is sufficiently important that it merits its sometime status as a separate (but nonexclusive) focus of study in both law and linguistics.

In this Part, I will begin with some background on certain aspects of communication. First, I will show that modes of meaning that are more conventionalized are less information intensive in this Article’s terms. Next I will make more precise those features of audiences that are relevant to the cost of processing information. With this background, I then turn to a simple model of the informational tradeoff, between information intensiveness and the extensiveness of the audience. Processing costs are least likely to be internalized in the presence of extensive audiences. Finally, I turn to an inventory of some devices used in the law, which bear a striking similarity to analogous features of natural language and which serve to limit information intensiveness and associated third-party information costs.

A. Information and Intensiveness

I will be arguing that what I call information intensiveness varies according to the nature and extent of the audience. What we are ultimately interested in is a measure that correlates with the cost of processing the information in a message, legal or otherwise. At this point, we can draw on information theory

70. This important aspect of processing communicated information has been called “accrediting” or “verification.” See, e.g., Benkler, supra note 7, at 186-87; Hansmann & Kraakman, supra note 19, at 7-10.
71. See infra notes 89-90 and accompanying text.
to specify a measure of information—information intensiveness—that is both precise and likely to be a proxy for processing cost, particularly for more extensive audiences.

This purely quantitative theory of information defines the amount of information in terms of the reduction of uncertainty or the number of possibilities eliminated. In particular, information can be thought of as reflecting a series of binary decisions between competing alternatives. Consider the common example of eight employees who can be partitioned into classes in the following way. First, four of the employees are tall and four are short. Second, four employees are highly paid (two of these are tall, and two short). And, finally, four (a tall and a short highly paid person, and a tall and a short low-paid person) are new employees and the rest are old employees. For each characteristic, let “1” and “0” denote the choices; “1” can denote tall, highly paid, and new, and “0” otherwise. Then, a sequence of three binary digits (bits) uniquely specifies each one of the employees. Thus, 011 specifies the (only) short, highly paid, new employee. Here, a sequence of three bits specifies the situation uniquely. The amount of information in bits is generally defined as what 2 (for binary choice here) must be raised to in order to get the number of possibilities selected from. And in the most efficient system, three binary digits is the minimum required to represent three bits. Hence, in this example, where there are eight possibilities and $2^3 = 8$, three binary digits are necessary to identify each unique possibility. Equivalently, the amount of information contained in any situation is the length of the shortest ideal, fully explicit description in terms of bits, given the method of specifying classes (e.g., tall/short). In communication, we care both about what information is conveyed, which is the study of semantics, and about how much information is associated with different expressions, which is the application of information theory to language.

For our purposes, information intensiveness denotes the amount of information, as defined above, per unit of delineation cost. Thus, in possession, an information intensive message is one in which the ratio of the amount of information to the cost of sending it is high. Thus, a particular rule about which dogs one may use to gain possession over running foxes may not involve much communicative effort, but it contains a lot of information relative to this low production cost, and so is intensive. A rule about foxes that applies to many other potentially owned objects has a low amount of information relative to the (fairly similar) production cost. On the theory developed in this

72. See, e.g., DRETSKE, supra note 7, at 5-6.
73. That is, $2^n$ possibilities can be uniquely specified by $n$ bits, and the information content ($I$) of a situation or source $(s)$ is the logarithm to the base 2 of a number of the number of equally likely possibilities $(n)$: $I(s) = \log_2 n$. This approach can easily be extended to accommodate possibilities of unequal probability. See DRETSKE, supra note 7, at 7; SHANNON & WEAVER, supra note 11, at 32; Hartley, supra note 11.
74. Even if we had a range of conventions, spanning from more widely and commonly
Article, messages with low information-to-production-cost ratios—low information intensiveness, in my terms—are expected for extensive audiences.

This notion of information intensiveness has potentially wide applicability in law and language, but it acquires much of its interest because it can be applied to the semantics-pragmatics distinction. Roughly, pragmatic inference relies much more heavily on context, and in present terms, is more information intensive. For present purposes, this is important because I will argue that information intensiveness in the law is quite analogous to phenomena in the domain of linguistic pragmatics.

1. Convention and semantic meaning.

Crucial to communication in possession—and in law generally—are conventions. Both the analysis of possession and the analysis of natural language in terms of convention are important, because they help explain how, in the absence of agreement, these striking regularities in behavior could possibly come about in the first place. But in both law and language, not all meaning is conventional; rather, meaning varies in its reliance on convention and discourse context. Various authors in the Humean tradition have emphasized the conventional nature of property. It is tempting to regard mutual respect for property as resting on some kind of agreement, but in most situations it is not plausible that property is based on a current agreement or even that it can be traced back to some actual historical agreement. Normatively, consent-based theories of property have to rely on some form of hypothetical consent, but this does not solve a related but distinct explanatory problem: How do people who have not actually gotten together nevertheless have a coordinated, mutual respect for property? Subsidiary questions include: What objects can be property? What acts give rise to property in those things?

David Hume and those following him look to convention to replace agreement. A convention is a regularity in behavior that is customary, expected, and self-enforcing, in the sense that everyone prefers to follow the pattern as long as most everyone is following it, and everyone is better off conforming as long as everyone else does.75 Conventions can arise because of

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75. See, e.g., David K. Lewis, Convention: A Philosophical Study 78-79 (1969) (presenting a model that uses a number of variables to gauge degrees of conventionality); H. Peyton Young, The Economics of Convention, 10 J. Econ. Persp. 105, 105 (1996) (defining convention as something to which "[e]veryone conforms, everyone expects others to conform, and everyone has good reason to conform because conforming is in each person’s
prior agreement, precedent, or salience. In the problems of social institutions like possession (and language), prior agreement and precedence are less likely to be important than salience. Salience is psychological prominence, and experimental studies show that people are good at coordinating by converging on prominent solutions. In one notable experiment by Thomas Schelling, when asked where they would go if they had to meet someone in New York City tomorrow but could not communicate in the meantime, more than half of the respondents said Grand Central Station and almost all said they would go at noon. This result is striking in light of the huge number of other possible combinations of place and time, which would lead one to expect very low convergence.

The notion of salience may not be easy to pin down; but, for our purposes, what is important is that salience works better when players are more homogeneous in their knowledge, and convention can be more detailed if salience can draw on a larger fund of common knowledge. Hume offers the suggestion that people proceed by gravitating towards solutions that suggest themselves based on prominence—salience, in modern terminology. Which particular solution (convention) will be adopted depends less on reason and public interest than on the imagination. Certain associations of ideas are constant enough across people to form the basis of coordination. Thus, in possession, the nearness relation can be used by extension to form an expectation of who will be owner of a thing: Often the nearest actor will be considered to possess the thing. Robert Sugden, using the notion of salience, gives a game-theoretic interpretation of Hume’s account.

Given a best interest when everyone else plans to conform”).

76. For a discussion and summary of the literature, including the disagreement among theorists over the extent to which the emergence of focal points can be the product of fully rational reasoning, → Richard H. McAdams, A Focal Point Theory of Expressive Law, 86 VA. L. REV. 1649, 1659-63 (2000).


79. David Hume, A Treatise of Human Nature 504 n.1 (L.A. Selby-Bigge ed., 2d ed. 1978) (“There are, no doubt, motives of public interest for most of the rules, which determine property; but still I suspect, that these rules are principally fix’d by the imagination.”).

80. Id. (“The conventions that are best able to spread are those that are most general... and most fertile.... The idea that disputes are settled in favour of possessors seems to be particularly fertile and general.”).


82. Id. at 31-33. Although it will not concern us, Sugden’s definition of convention requires that it be a stable equilibrium, not necessarily of a coordination game, and that there are other stable equilibria. Id. at 32. Lewis requires a coordination equilibrium (which by definition requires at least two stable equilibria), and also requires that everyone is happier if
situation in which people could fight or defer when in conflict over a resource, the convention of fighting when one is in possession (e.g., occupying a territory) and deferring when one is intruding and challenged by an occupant, has a high degree of salience.83 Thus, this notion of salience can be traced back through Schelling to Hume, who argued that certain solutions to what we would call coordination problems have more prominence than others.84 To Hume, that a current possessor will, on average, value the thing possessed more than will nonpossessors reinforces the salience of this solution.85

Interestingly, very similar questions arise in the case of natural language. On one level, language appears to work as if everyone had gotten together and agreed on a method of communication. However, language is not plausibly based on an actual agreement. Instead, acoustic pulses (and later graphic marks) are associated with meanings by way of conventions. David Lewis analyzes meaning in natural language as based on convention; and others have shown how little common knowledge is required to get the system off the ground.86

Strictly semantic meaning is meaning based on linguistic conventions. A word such as “book” is associated by the semantic conventions of the English language with its meaning, which might be identified with or modeled by the set of all books. The study of semantics usually involves the study of the conventional meaning of words and how they systematically contribute to the meaning of larger units, up to the sentence level. However, what people call “meaning” is not exhausted by semantic meaning; meaning comes in less conventionalized forms, which also play a key role in both law and language as communication systems.

(nearly) everyone follows the regularity. LEWIS, supra note 75, at 58; SUGDEN, supra note 81, at 33.

83. Id. at 92-97.

84. HUME, supra note 80, at 503-04 (claiming that because we tend to prefer that which we already possess, “men wou’d easily acquiesce in this expedient, that every one continue to enjoy what he is at present possess’d of”); SCHELLING, supra note 78, at 54-58.

85. HUME, supra note 80, at 503 (“What has long lain under our eye, and has often been employ’d to our advantage, that we are always the most unwilling to part with; but can easily live without possessions, which we never have enjoy’d, and are not accustom’d to.”). Although Hume emphasizes the psychological element over utility, he does note that the benefits of such a convention also argue for its salience: Efficient solutions have some salience because they are efficient, as long as the participants know this.

86. See LEWIS, supra note 75, at 3 (introducing his book as an attempt to “explain[] what you must have had in mind when you said that language... is governed by conventions”); BRIAN SKYRMS, EVOLUTION OF THE SOCIAL CONTRACT 80-104 (1996) (examining “The Evolution of Meaning” from the earliest stages of communication).
2. Nonconventional or pragmatic meaning and principles of conversation.

Participants in more personal contexts with a great deal of background knowledge will tend to rely less on systematic, conventional, or semantic meaning. To make this more precise, we can use notions introduced by Paul Grice that have developed into a major subfield of linguistic pragmatics. Pragmatics embraces the study of the structure of conversation and is often based on some version of Grice’s Cooperative Principle: “Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.” As many have noted, the Gricean approach explains conversation as the interaction of rational agents cooperating to maximize the gains from information exchange. Language (and law) are not solely aimed at (or shaped by) the transmission of information, and for other types of communication, other, more complex goals must be introduced. Moreover, Gricean notions must be used with care in the legal context, because Grice assumed cooperative communication, whereas much of law involves a notably higher degree of conflict. Nonetheless, the role of background knowledge in facilitating short, easily produced messages that leave much implicit is one of the most important implications of the Gricean approach and has proven very fruitful.

More can be communicated than what is explicitly said, and this can occur by means of conversational implicature. To take a well-known example, it is very common to say something like, “It’s cold,” in order to get someone standing near an open window to close it, rather than to say something like, “I hereby request that you, being closer to the window than I, please close the window.” Of course, in addressing someone who had never seen a window before, the longer version might be more effective.

87. PAUL GRICE, Logic and Conversation, in STUDIES IN THE WAYS OF WORDS 22, 26 (1989).
88. See, e.g., Jay David Atlas & Stephen C. Levinson, It-Clefts, Informativeness, and Logical Form: Radical Pragmatics (Revised Standard Version), in RADICAL PRAGMATICS I (Peter Cole ed., 1981); Richard Craswell, Do Trade Customs Exist?, in THE JURISPRUDENTIAL FOUNDATIONS OF CORPORATE AND COMMERCIAL LAW 132 (Jody S. Kraus & Steven D. Walt eds., 2000) [hereinafter JURISPRUDENTIAL FOUNDATIONS] (noting that “the Cooperative Principle itself... could be thought of as a commitment to maximizing the expected value of the parties’ conversations, just as economists speak of maximizing the expected value of a transaction”).
89. Grice himself noted that the effective exchange of information is not the only purpose of talk exchange but is a special and primary purpose of talk (and talk exchange); further maxims of an aesthetic, social, or moral character would be necessary to capture other aspects of talk. See GRICE, supra note 87, at 28. Grice’s purpose was not to explain all of conversation this way but to show that this approach could handle aspects of language that previously defied rigorous analysis.
Whether or not to use more explicit semantic meaning or more implicit pragmatic meaning can be thought of, in this Article’s terms, as reflecting the informational tradeoff between intensiveness and extensiveness. The shorter message is cheaper to produce; but, depending on the nature of the audience, the shorter message could be either cheaper or more costly to process. The greater the common knowledge between speaker and hearer, the more likely the short version is to be cheaper overall. Consider one of Grice’s famous examples, in which Person A says, “I am out of petrol,” and Person B responds, “There is a garage round the corner.”91 Here, the relevant background knowledge is that Person A is out of gas and looking for a gas station; because of this knowledge and the requirement under the Cooperative Principle that B’s response be relevant, B is “implicating” that the gas station is open.92 Person B need not add to the length of the utterance by stating so explicitly. Generally, the amount of information that can be recovered from a signal depends in part on the information that the recipient already has.93 For example, if A knows that someone lives in Illinois, but B does not know, then the message that the person lives in Springfield tells A, but not B, where the person lives.94 The information carried by a signal often exceeds the conventional meaning of the signal, and will tend to do so with greater information intensiveness the greater the background knowledge shared by sender and receiver.

Also relevant to information intensiveness is that such a pragmatic implicature is defeasible, unlike a semantic or logical implication. In natural language, some inferences are defeasible, and some are not.95 For example, if one says “It’s cold here” then the inference “It is not warm here” is a logical implication and is nondefeasible. Logical entailments are not cancelable; as long as words like “here” are not changing referent in midstream, denying the implication contradicts the original statement in the same manner as would one’s following the statement, “It’s cold here,” with “But it is warm here.” By contrast, a defeasible inference is provisional and cancelable. The inference from “It’s cold here” to “Please close the window” is cancelable; there is no contradiction in saying, “It’s cold here, but please don’t close the window; I like the cold.”96 Such pragmatic inferences are typically (for some,

91. GRICE, supra note 87, at 32.
92. Id.
93. See DRETSKE, supra note 7, at 43 (“What one learns, or can learn, from a signal . . . and hence the information carried by that signal, depends in part on what one already knows about the alternative possibilities.”).
94. Id. (illustrating this point using Madison and Wisconsin).
95. In semantics, a distinction is often made between implications that depend only on linguistic meaning and those that require further nonlinguistic (and defeasible) premises. Entailments and Grice’s conventionalized implicatures belong to the first group while Grice’s conversational implicatures (examples of which I discuss in the text) belong to the second. See generally CHIERCHIA & MCCONNELL-GINET, supra note 8, at 25-27 (discussing implicature and defeasibility).
96. This is an example of explicit cancelability. Contextual cancelability arises when
definitionally) said to be defeasible; they are only provisional and can be canceled without contradiction. Similarly, in Grice's gas station example, where A says, "I am out of petrol," and B says, "There is a garage round the corner," B implicates that the garage is open (because of the background knowledge that A is looking for gas and the conversational principle that B's response should be relevant). But, if B then adds, "But it's closed," the implicature that the garage is open is canceled.97 There is no contradiction, as there would be if B said, "There is a garage round the corner but there is no garage there." According to Grice, cancelability is a test for pragmatic implicature, as opposed to strictly semantic meaning.98

Along with defeasibility goes a large reliance on context. The reliance on context is far greater in pragmatic inferences, such as in the window and gas station examples, than in logical inferences, such as concluding that a room is not warm from the fact that it is cold.99 But, as we will see, there are times when a communicator may not fully internalize the costs of communication to a single, wide, anonymous audience, and this problem is only compounded when a heterogeneous audience (or multiple audiences) comes into play.

B. Audience Design and Extensiveness

Communication involves effort by both the sender and receiver of a message. For reasons to which we will return, linguists traditionally have paid little attention to explaining language in terms of the costs involved in its use. Relatedly, in many areas, linguists have been slower to pay attention to the impact of the audience on the nature of a communication than to features of the speaker.100

Sociolinguistics and pragmatics provide the audience-based factors that will be of most relevance to us. Sociolinguists have long recognized that speech varies along a style spectrum from formal to informal (sometimes misleadingly called "elaborated" versus "restricted"), and that formal style is

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"one can find situations in which the utterance of the form of words would simply not carry implicature." Grice, supra note 87, at 44.

97. Id.; see also supra note 95 and accompanying text. Note that someone might say, "There is a garage around the corner but it is closed" consistently with Grice's maxims: For example, if both speaker and hearer share the knowledge that gas stations are spread out, then, if a nearby one is closed, further search in the neighborhood is futile.


99. This is not to say that context is not important here: At least to determine the meaning of a word like "here," one would have to resort to context. Adverbs like "here" and pronouns are among words termed "indexicals." See, e.g., Chierchia & McConnell-Ginet, supra note 8, at 263-80; M.J. Cresswell, Logics and Languages 173-85 (1973); Georgia M. Green, Pragmatics and Natural Language Understanding 17-35 (2d ed. 1996).

100. This is true of pragmatics and sociolinguistics, the areas that we will be most concerned with here. It may also be true even of areas such as phonetics (articulatory phonetics preceded acoustic phonetics).
characterized by more pausing, more editing, and greater explicitness—all features that increase production costs.\(^{101}\) Despite these costs, formal style is appropriate where other information channels (such as gesture) and background knowledge cannot be relied upon to fill out implicit parts of the message.

To make these notions precise, we need to be able to measure audience characteristics on the one hand and style on the other. As for the former, one can borrow on network theory in anthropology to analyze a speaker’s style: The level of density and multiplexity of the network in which the speaker tends to communicate can be shown to correlate with style features such as accent and word choice.\(^{102}\)

Even more strikingly, a given speaker’s style can be shown to vary by audience. In his classic article on style as audience design, Allan Bell argues that speakers adjust to different types of audience members in predictable ways.\(^{103}\) He usefully classifies audience members into adressesees, auditors, overhearsers, and eavesdroppers. An addressee is a person to whom the familiar speech acts—assertions, promises, apologies, and so on—are directed. An auditor is like an addressee in that he is known to the speaker and has his participation approved (“ratified”), but he is not directly addressed. An overhearer is known but not ratified or addressed. An eavesdropper is not even known. Based on the definitions, one can conceive of the audience as becoming larger and more distant from the speaker—usually both physically and psychologically—as features are dropped and we move from addressee to auditor to overhearer to eavesdropper. Bell shows that speakers shift their style in terms of accent, word choice, and the like more for audience members falling closer to the speaker in this spectrum.\(^{104}\) Furthermore, if adjustment is made for any type of audience member, it is also made for any closer type.\(^{105}\) Finally, given these patterns, the choice of code can also be seen as “creating” the audience in the sense that it designates who is an addressee or an auditor as opposed to an (unratified) overhearer.

\(^{101}\) See, e.g., Paul Kay, Language Evolution and Speech Style, in Sociocultural Dimensions of Language Change 21 (Ben G. Blount & Mary Sanches eds., 1977); see also Basil Bernstein, Elaborated and Restricted Codes: Their Social Origins and Some Consequences, 66 Am. Anthropologist 55 (1964).

\(^{102}\) See, e.g., Lesley Milroy, Language and Social Networks 139-44 (1980); James Milroy & Lesley Milroy, Mechanisms of Change in Urban Dialects: The Role of Class, Social Network and Gender, in 1 The Sociolinguistics Reader: Multilingualism and Variation 179 (Peter Trudgill & Jenny Cheshire eds., 1998).

\(^{103}\) Bell, supra note 6, at 145; Herbert H. Clark & Thomas B. Carlson, Hearers and Speech Acts, 58 Language 332 (1982).

\(^{104}\) Bell, supra note 103, at 158-61.

\(^{105}\) Id. at 160. Although more adjustment seems to be made for closer participants, the scope of the adjustments we should expect is somewhat unclear. “Style” has proved a very elusive concept. Labov proposed that style be measured by attentiveness to speech, William Labov, Sociolinguistic Patterns 208 (1972), but this has fallen out of favor.
In the following discussion, what will be most interesting are the hints in
the literature that adjustment to more distant audience members takes the form
of a lesser degree of information intensiveness (in my terms) and a greater
degree of formalism. This requires a precise notion, not only of audience, but
also of formal versus informal style. Jean-Marc Dewaele seems to be moving
in this direction when he notices that two factors—implicitness versus
explicitness on the one hand, and complexity on the other—seem to account for
the variation in speech in a range of situations from informal to formal:

The speaker who chooses a style near the implicit end of the continuum
assumes that the interlocutor shares his knowledge of the world and of the
context in which the exchange takes place. . . . In formal situations, speakers
rely less on knowledge shared with the interlocutor and make fewer
intertextual and contextual references. They seem to prefer exact, precise
information: nouns and modifiers are repeated rather than being referred back
to with pronouns.106

In more formal contexts, speech is more explicit than implicit. For example,
formal speech includes proportionately more nouns, determiners, and
prepositions than does informal speech. In informal speech, pronouns, adverbs,
and verbs are proportionately more common, and pronouns and adverbs (at
least the most common ones) are, on average, more spatio-temporally context-
dependent than are the other word classes. The relative reliance on modifiers,
nouns, and prepositions versus pronouns, verbs, and adverbs can be measured
and accounts for a large part of intraspeaker variation.107 Formal speech calls
forth the use of infrequently used nouns and other devices to avoid ambiguity.
Informal speech, by contrast, is more elliptical and relies more on context and
nonverbal communication, in part because miscommunication can be remedied
quickly by feedback and restatement.108 In short, speech relies less on
context—it is more formal—the more it is directed to audiences that share less
background knowledge or are less personal.

Crucially, formalism in language, and, I will argue, in law, is a matter of
degree. Levels of features such as those identified by Dewaele can be
measured. And, as we have already seen, formalism in a wide variety of areas
can be identified with the degree of invariance of meaning under changes of

106. Jean-Marc Dewaele, How to Measure Formality in Speech: A Model of
Synchronic Variation, in APPROACHES TO SECOND LANGUAGE ACQUISITION (Kari Sajavaara
& Courtney Fairweather eds., 1996) [hereinafter Dewaele, How to Measure]; see also Jean-
Marc Dewaele, Style-Shift in Oral Interlanguage: Quantification and Definition, in THE
CURRENT STATE OF INTERLANGUAGE: STUDIES IN HONOR OF WILLIAM E. RUTHERFORD 241
(Lynn Eubank, Larry Selinker & Michael Sharwood Smith eds., 1995); Heylighen, supra
note 17, at 49-53. For an earlier forerunner of this approach that does not attempt to measure
explicitness, see Joseph A. DeVito, Psychogrammatical Factors in Oral and Written
Discourse by Skilled Communicators, 33 SPEECH MONOGRAPHS, Mar. 1966, at 73.


108. Formal speech is more cognitively demanding (in other words, uses more
complex syntax) but this means that it is more demanding per linguistic unit, which is
compatible with the theory presented herein.
context. Thus, in the example above, “It’s cold” is a less formal way of making the request for a closed window than “I hereby request that you, being closer to the window than I, please close the window.” The former statement will vary more in interpretation across the range of possible contexts in which it could be uttered than will the latter, more formal statement. Further, while it is usually (some would say, always) possible to come up with a context that renders a statement ambiguous, it is an empirical proposition whether, given a statement, people will reach one interpretation or another, or how easily they will reach a given interpretation (e.g., in terms of reaction time).

In natural language, most of this adjustment to audience is spontaneous and does not involve organized enforcement. Studies of natural language typically assume that communication is a cooperative enterprise. Pragmatics has focused first and foremost on situations in which information is conveyed. Thus, it is natural to focus on two-party interactions and to assume that each person is trying to maximize the joint returns from the “exchange.” Communication that involves conflicting interests, such as deceptive speech, has received less attention. Correspondingly, Robert Cooter has identified two strands in the literature on bargaining. On the one hand, an optimistic view of contracting behavior, which Cooter associates with the Coasean tradition, emphasizes the tendency to reach bargains in the presence of potential gains from trade. On the other hand, a tradition Cooter associates with Hobbes sees exchange as rife with conflict over division of gains and consequent strategic behavior.

What both the optimistic and pessimistic views of two-party exchanges tend to leave out is the influence of third parties. As already noted, there is evidence that speakers do make some effort to tailor their utterances to audiences. In particular, speakers are more explicit in more anonymous, communicative settings. Crucially, being explicit seems to come at some extra

109. See Heylighen, supra note 106, at 26-28; see also supra notes 17-18 and accompanying text.

110. Put differently, such contexts for interpretation will be more or less available, ranging from the almost automatic to the far-fetched. Under this probabilistic version of formalism, the degree of formalism is inversely proportional to the variance in interpretations one would get in an audience survey.

111. See sources cited supra note 88.


113. See Robert Cooter, The Cost of Coase, 11 J. LEGAL STUD. 1, 17-18 (1982) (noting that “[t]he bargaining version of the Coase Theorem takes an optimistic attitude toward the ability of people to solve this problem of distribution [of the stakes of an exchange],” in contrast to a “pessimistic approach,” an (older) view associated with Thomas Hobbes, which “assumes that people cannot solve the distribution problem, even if there are no costs to bargaining”); see also R.H. COASE, THE FIRM, THE MARKET, AND THE LAW 161-62 (1988) (arguing for implausibility of consistent failure to reach wealth-maximizing agreements where transaction costs are low).
cost to the speaker: Using words rather than relying on implicit background knowledge and body language requires more effort in the production of speech. This even extends to the phonetic level, where there is a tradeoff between clear articulation, which is costly to the speaker, and ease of understanding, which reflects audience processing costs. Where interaction is less face-to-face, the balance is typically struck in favor of more production cost and greater explicitness. In many interactions, the speaker’s incentives to strike this balance are assumed to align with the overall welfare; speakers have as much interest in being understood as hearers have in understanding. But the question remains why speakers do not unilaterally place more of the cost of communication on hearers. Part of the explanation resides in the fact that most people are speakers and hearers, and a speaker who consistently imposes costs on hearers will find himself without conversational partners.

Where the speaker is least likely to internalize the costs of processing is in widespread and anonymous interaction. Spam e-mail is a prominent example where audience costs of various sorts are not internalized by the speaker. If the spam attracts buyers and bothers or offends people who would not buy anyway, the speaker imposes costs on those bothered.\textsuperscript{114} Telemarketing and junk faxing are similar examples, where the costs to noncustomers are not fully internalized by the advertiser.\textsuperscript{115} Indeed, a theme in the regulation of telemarketing and junk faxing is that, when the ratio of cost to the advertiser to the cost to the receiver is low, intervention is more likely.\textsuperscript{116} For example, in the absence of technological fixes or regulation, fax machines could be rendered largely useless by junk faxing.\textsuperscript{117} In our terms, the size of the externality from information extensiveness is large relative to the benefits, and the overall stakes are large. How much the government can intervene raises First Amendment

\textsuperscript{114} I will be emphasizing the need to process the information. In the case of spam, one has to read enough to know that the e-mail is not important. Other possible costs to widespread audiences include offense or aesthetic aversion.


\textsuperscript{116} Michael A. Fisher, The Right to Spam? Regulating Electronic Junk Mail, 23 COLUM.-VLA J.L. & ARTS 363, 381 (2000) (“In every area of marketing discussed so far, including fax solicitation, a critical parameter has been the ratio of the solicitor’s expense to that of the consumer. When this ratio is extremely small, as it is for machine-based marketing, the courts have upheld total bans, whereas when the ratio is not as small, only “opt-out” restrictions are generally accepted as constitutional.”).

\textsuperscript{117} Id. (“There is little doubt that, if left unchecked, marketers could, with minimal cost to themselves, subject nearly every fax machine in the country to a barrage of unsolicited advertisements, thereby rendering the machines useless for any other purpose.”).
issues, but for present purposes it is enough to note that such externalities have to be rather large—larger than they are in ordinary speech—before intervention is in order.

In natural language, the other contexts in which private or government standards seek to shape the individual’s decision of how explicitly to speak are ones of high stakes. In air traffic control or aboard oil tankers, the potential costs of a misunderstanding are sufficiently great that the decision is partially taken out of the speaker’s hands. But there are other linguistic situations in which stakes are high and some actor intervenes to make the message simple. One example is the use of hockey socks in hospitals to cover the limb that is not supposed to be operated on. Mistakes involving operations on the wrong side of a patient are all too common, and marking the limb for operation (say, by writing “yes” on it) often does not work well. The problem is that the mark requires more search or more common knowledge than other methods of communicating the same information; if the drape mistakenly goes over the correct limb for surgery, then the wrong limb is exposed without any message. This is fine if the surgeon is looking for a “yes” mark or always checks both limbs, but this requires more effort or common knowledge, which apparently can be lacking even in the hospital context. The solution adopted by some hospitals is to mark the limb not to be operated on, either by writing “no” on it or putting something like a red hockey sock over it. If one accepted the often-heard argument that notice cures all, one would think that writing “yes” on the correct limb would be at least as good as writing “no” on the wrong limb, but it turns out that the “no” designation requires less context and background knowledge in order to work.

Furthermore, in this high-stakes context, there is increasing recognition that standardization may help, although no solution seems to have yet gained universal acceptance. If some surgeons use an “X” to mark the surgery site while others use “X” to mark the site of no surgery, things become confusing (and dangerous). Even if most marked “no” on the no-surgery site, surgeons

118. See, e.g., Van Bergen v. Minnesota, 59 F.3d 1541, 1556 (8th Cir. 1995) (acknowledging that a Minnesota regulation on the use of automatic dialing-announcing devices triggers First Amendment review but upholding the law as a legitimate time, place, or manner regulation); Radner, supra note 115 (examining First Amendment protection of commercial speech and the limitations it places on regulation of electronically generated phone call and fax solicitations).

119. Merrill & Smith, supra note 4, at 49 (noting that “the law mandates one standard language or use of a shared language in certain contexts where impediments to communication can be especially costly, as in airplane cockpits or aboard oil tankers”).


121. For a discussion of notice cures all, see Merrill & Smith, supra note 4, at 43-45.

marking the correct site with their initials (a common alternative system) could introduce confusion. If some people are using initials, then double-checking for this possibility may become necessary. Thus, devices range along a spectrum according to the demands they make on the interpreter in terms of background knowledge and use of context; from high to low context-dependence, we have the use of an “X” mark, the use of initials, the use of a “yes” mark, and the use of a “no” mark. And adding a nonstandard message to the mix of messages can raise the processing costs for all messages.

I will argue that communication about legal relations shares the features of both these types of contexts; they are often widespread and anonymous, like the spam and junk faxing situations, and they involve high stakes like the air traffic control and surgery examples. For this reason, we would expect to find more intervention in the tradeoff between the intensiveness and extensiveness of information in these areas than in the everyday use of natural language in conversation.

C. Levels of Information Costs of Legal Relations by Audience Type

Actors who communicate about legal relations will sometimes face the full costs of the communication, but often they will not. Before turning to a theory of the law’s response to communication costs, it will be useful to classify these costs. I will not be treating the privately beneficial, socially costly signaling that the literature has mostly focused on. For example, employees spend a lot to signal their productivity (e.g., by obtaining an education that is difficult for low-productivity employees to obtain), but, it is argued, it might be better if no such signaling took place. However, sometimes the information developed may be worth the cost after all, and even where this is not true there are a variety of mechanisms that may serve to limit information gathering in these circumstances. In any event, this type of costly signaling, to the extent that it occurs, would be a problem even in the absence of audience processing costs.

123. A doctor’s initials could be “N.O.,” as pointed out by Lori Bartholomew at the Physician Insurers Association. Id. ¶ 17.


125. That signaling is privately beneficial but socially wasteful (rather than cost-effectively informative) is a theoretical possibility in many two-party transactions. See, e.g., Philippe Aghion & Benjamin Hermalin, Legal Restrictions on Private Contracts Can Enhance Efficiency, 6 J.L. Econ. & Org. 381 (1990) (describing signaling in the context of an informed entrepreneur and uninformed investor) → Ian Ayres & Robert Gertner, Strategic Contractual Inefficiency and the Optimal Choice of Legal Rules, 101 Yale L.J. 729, 733 (1992) (suggesting that, while some default and immutable contract rules are theoretically
Instead, I will be focusing on the costs of delineating rights that involve communicating these rights to dutyholders. This relates to the problem of applying the psychology of information-processing to questions of consumer product and risk regulation: More information may not always be better, and additional information may add more than trivially to processing costs. Where the benefit from this communication to its producer exceeds the cost of producing the message, the producer will sometimes ignore the full cost of processing the message. This divergence between the private and social cost of communication will serve as the basis of the theory of the next section.

The total cost of communication includes the costs of producing the message and the costs of processing it. For example, in the case of an utterance, there are production costs (the costs of formulating and articulating the utterance) and processing costs (the costs of listening to and understanding the utterance). Similarly, the owner’s claim to Blackacre involves production costs (the costs of erecting a fence and filing title documents) and processing costs (the costs of viewing and respecting the fence and searching and reading the title documents). The goal of the owner is to minimize the private costs of the message. These private costs will include production costs and the component of audience processing costs that is reflected in a lowering of the price the owner can charge vendees. For example, if the title documents are unclear, this will make the property less marketable, and the owner will feel this cost directly. However, this cost will not be fully borne by the owner as sender of the message about the property right in three types of situations. First, the lack of clarity might confuse a publicly subsidized court. Second, the difficulty of processing by dutyholders might lead to a fully compensatory judgment against a hapless violator (or alternatively might raise the potential violator’s costs of avoidance). And third, a confusing right might lead to confusion about titles in general, because everyone will have more potential features to be on the lookout for and to evaluate.

efficient, it is very difficult to “divine the efficient rule in practice”); sources cited supra note 124. Whether a given example of signaling is wasteful is difficult to tell. ‘’→ Alan Schwartz, Taking the Analysis of Security Seriously, 80 VA. L. REV. 2073, 2085 (1994). The tendency has been to overestimate the waste associated with information costs where markets encourage devices to reduce wasteful information production. ‘’→ Yoram Barzel, Some Fallacies in the Interpretation of Information Costs, 20 J.L. & ECON. 291 (1977).

126. On the psychology of information processing and regulation, see, for example, Wesley A. Magat & W. Kip Viscusi, INFORMATIONAL APPROACHES TO REGULATION (199 → Howard Beales, Richard Craswell & Steven C. Salop, The Efficient Regulation of Consumer Information, 24 J.L. & ECON. 491 (1981).

127. How recipients respond to a message that is costly to process is an empirical question. Recipients may ignore extra information (if they can tell what is extra), engage in costly evaluation, invest in acquiring background knowledge, and so on. Some have even claimed that extra information can decrease information use or degrade decisionmaking in the consumer context, but it is not clear to what extent, if at all, this “information overload” is a real problem. See infra note 223 and accompanying text.
It will be most useful to focus on the processing by the audience for two reasons. First, the degree of internalization of cost to the speaker will differ by type of audience: audiences range along a spectrum from small and close-knit to large and indefinite. Thus, if the law tends to intervene where internalization of cost is low and internalization is low where audiences are extensive, then the type of audience will in turn help to explain the law’s approach to communicating information about legal relations. Second, in many situations, the additional cost of sending more information-intensive (e.g., more complicated or more idiosyncratic) messages is low from the sender’s point of view. The real difference between a highly information-intensive and a less information-intensive message will be in the processing. This turns the focus (again) to the types of audiences and their abilities to process.

The audience for messages about legal relations can be classified in terms of an extended notion of privity. Where there is a closer relationship between the creator of the rights and the audience, the creator will be more likely to face the costs of processing by members of the audience. Types of audiences range from purchasers of the property rights in question, to successors in interest to those rights, to courts or other third-party enforcers, to potential violators of the rights, to purchasers of other rights not connected to the creator of the rights in question.

1. Purchasers.

In the case of purchasers, processing costs are no different from other costs that sellers may, superficially at least, impose on buyers. For example, in any sale, there is a question of who will measure the value of the asset and who will bear the buyer’s search costs. This is a subtle question, but recent work, to be discussed shortly, has suggested that it is not always the case that individual sellers fully internalize buyers’ costs of contracting by having to charge a lower asset price. To be sure, if there were one seller, the seller would be able to charge a monopoly price, and this price would be lower if the seller raised the cost of the sale itself. How much of the increase fell on the seller would depend on the elasticities of supply and demand. At the other extreme, with multiple buyers and sellers in a perfectly competitive market, there is no incentive for a seller to cause the costs of dealing with that seller to rise. Buyers are perfectly informed, do not face transaction costs, and can simply go elsewhere. Equivalently, in a perfectly competitive market with homogenous

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commodities, trading is anonymous in the sense that a buyer is indifferent to the identity of the seller.130

Things become more complicated when search costs are positive.131 In general, if a cost falls squarely on someone who is certain to purchase the asset and the buyer is aware of this cost, the seller has an incentive to minimize the cost. Measuring the asset to be sold may be privately beneficial to the buyer but wasteful overall; for example, if searching through a batch of fruit is costly and only serves to appropriate unpriced value, the seller will incur cost in avoiding the information-gathering up to the point where marginal cost equals marginal benefit.132 The seller may use opaque bags and expend resources to convince consumers that a bag has average-quality fruit.133 Or the seller may offer a warranty to reduce search behavior if the warranty costs less than the search.134 Some of this behavior will involve communication, and the seller has every reason to make the communication less costly for the buyer to process.

However, many costs involved in processing a seller’s communication are not focused on the certain buyer. Sellers may impose costs on third parties in order to make a sale. For example, if the probability of phone solicitations resulting in a sale is high enough, it makes sense for the seller to call even though, by calling, the seller imposes costs on people who do not want to be solicited.

2. Successors in interest.

One difference between the typical contract right and the typical property right is that the latter will last much longer. This durability of property rights means that the communication of the right has as its audience people far in the future. Successors in interest to the original owner are one component of this audience.

Some have argued that the durability of property explains its greater reliance on mandatory forms than other areas of law, such as contract.135 The


133. Id. at 37-39.

134. Id. at 32-34.

135. See Carol M. Rose, What Government Can Do for Property (and Vice Versa), in THE FUNDAMENTAL INTERRELATIONSHIPS BETWEEN GOVERNMENT AND PROPERTY 214-15
idea is that the law intervenes to make sure that the message is not garbled across time. Processing costs will be high for those in the future. This problem of remote processing costs is related to the argument that fragmentation has high future costs, because property is easier to fragment than to reassemble later.136 Excessive fragmentation can also result in an anticommons where too many stakeholders have a veto over use and transfer. A wide variety of rules in property law can be regarded as preventing excessive fragmentation of several types, such as excessively powerful coownership interests, excessively small parcels, or excessively numerous use rights over a given asset.137 These doctrines range from partition to the changed-circumstances doctrine, the rule against perpetuities to eminent domain.

Arguments based on what will happen subsequently to a given asset must deal with the question of capitalization. If O is deciding whether to create complicated or fragmented rights, O will take into account the rights' durability.138 The unattractiveness of the complexity or the fragmentation of property will be reflected in a lower selling price to someone down the road; and this, discounted to present value, will be reflected in the price that the property will fetch right now. Thus, to the extent that O can foresee the types of problems that the durability of fragmentation presents, O will fully face the costs of those problems and may weigh them against the benefits of complicating or fragmenting the rights. Indeed, it is precisely the durability of rights that gives us confidence that an owner has the right incentives to maximize the value of the owned resource.139

Furthermore, the mere failure to recombine rights when they are no longer "efficiently" fragmented does not tell us much unless we know a lot about costs. One supposed problem with property is the one-way ratchet of complexity: It is easier to fragment property rights than to reassemble them later.140 But, in any given instance, what looks like an unfortunate tendency

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138. See, e.g., Richard A. Epstein, Notice and Freedom of Contract in the Law of Servitudes, 55 S. CAL. L. REV. 1353, 1360 (1982) (pointing out that a seller who insists on a covenant that works to a purchaser's disadvantage will have to accept a lower purchase price); Merrill & Smith, supra note 4, at 29-31, 44.

139. Demsetz, supra note 55, at 355 (“In effect, an owner of a private right to use land acts as a broker whose wealth depends on how well he takes into account the competing claims of the present and the future.”).

140. Heller, supra note 137, at 1165-66; see also, e.g., Uriel Reichman, Toward a
may reflect sunk costs rather than frustrated gains. Because the "costs" of any system of property rights include upfront capital costs in addition to ongoing marginal costs, we should expect rights to persist past the point at which one would no longer be motivated to set them up anew: Once the costs of setting up the system have been incurred, they are sunk costs. Only ongoing marginal costs are relevant to the decision to maintain a property system. The sunk start-up costs mean that it is not necessarily a reflection of high transaction costs when parties fail to recombine the rights now. It may not even be undesirable to have created the rights in the first place. A one-way ratchet of complexity—including fragmentation—in property rights may well reflect transaction costs and an anticommons, or it might reflect a low ratio of operating to capital costs.

Of course, the owner may fail to anticipate problems at the time of the creation of the complicated or fragmented interest. Whether this is relevant to the design of a legal intervention will depend on whether the owner's errors are systematic and cost-effectively remediable by court adjudication or other legal intervention. One can imagine many intermediate degrees of intervention, such as default rules against complication and fragmentation or changed circumstances doctrines, to adjust matters long after the creation of the rights.

3. Third-party enforcers.

Complication of property rights also impacts a very familiar audience: third-party enforcers. It is conventional wisdom that formalities benefit courts in their efforts to enforce rights. So, too, is the idea that the partial subsidization of courts by the public leaves parties with an incentive to overuse

Unified Concept of Servitudes, 55 S. CAL. L. REV. 1177, 1233 (1982) (arguing that the "touch and concern" test allows court to "fix" some inefficient servitudes); Jeffrey E. Stake, Darwin, Donations, and the Illusion of Dead Hand Control, 64 TUL. L. REV. 705, 718-20 (1990) (contending that the Rule Against Perpetuities makes an asset easier to purchase by reducing the number of persons holding interests in the asset); Stewart E. Sterk, Freedom from Freedom of Contract: The Enduring Value of Servitude Restrictions, 70 IOWA L. REV. 615, 619-20, 624-34 (1985) (describing numerous costs in removing a servitude, such as drafting, bargaining, free riding, and holdouts).

141. On capital costs of setting up rights and marginal costs of holding them in further periods, David D. Haddock & Lynne Kiesling, The Black Death and Property Rights, 31 J. LEGAL STUD. S545 (2002).

142. See Merrill & Smith, supra note 4, at 30-31 (arguing that legal intervention will not be required in most cases).

143. Given that complication and fragmentation do carry with them potential benefits such as increased specialization (think of a commercial landlord) and that officials will not easily measure these benefits, one would expect that the law would offer a default menu. One could choose fragmentation with rigidity through time or fragmentation with a strong changed circumstances doctrine that would allow courts to put the pieces back together again. What we would not normally expect is that, because complication and fragmentation have costs, the law would intervene to stop it altogether up front.
them. Someone who puts a high informational burden on a court to figure out a novel structure of rights is not facing the full costs of the determination. Formalities have what Lon Fuller called a "channeling function": They force the parties' actions into a format that courts can easily interpret.144

There is, however, little reason to believe that ease of processing by the enforcer is what leads courts to deny enforcement altogether for certain rights. First, it is not clear that a court bears the cost of parties' lack of clarity: Courts might simply put in the same effort but make errors, the cost of which the parties themselves will have to bear.145 Further, penalty defaults rather than mandatory rules are expected where the problem is generating information for courts.146 Finally, in many contexts, parties have ample reason to standardize: The network benefits from doing the same thing as others may dominate the advantages of special forms.147

Moreover, courts' need for explicit information does little to distinguish different kinds of rights. The channeling theory was first articulated in the contracts context, although it has been well understood that clarity in property too was partly for the benefit of courts. Of course, to the extent that property rights are more durable than contract rights, courts are somewhat in the position of successors in interest: An audience far in the future is likely to need more help in deciphering the rights.148 This may argue for a different approach to property than to contract, or at least a different approach to old property and

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144. Lon L. Fuller, Consideration and Form, 41 COLUM. L. REV. 799, 801-03 (1941); see also 2 JEREMY BENTHAM, RATIONALE OF JUDICIAL EVIDENCE, SPECIALY APPLIED TO ENGLISH PRACTICE 454-55 (1827) (describing benefits of requiring specific evidence of contracts); id. at 470 (arguing against refusing enforcement of contracts on grounds of failure to comply with formality requirement); Ayres & Gertner, supra note 51, at 124-25 (arguing that penalty default rules can sort contracting parties into classes perceivable by courts).


146. Ayres & Gertner, supra note 51, at 95-97 (analyzing U.C.C. § 2-201(1)'s zero-quantity default as a penalty default to generate information for courts); see also Posner, supra note 145, at 1984 (arguing that formality of writing should not be an immutable rule, but that parties somehow should articulate their desire for legal enforcement).


contract rights as opposed to more recent ones. In any case, the audience separated in time from the sender of the message is a subcase of the extensive, indefinite audience, which is likely not to share as much background knowledge as would a contemporaneous audience. Thus, the need for courts to interpret rights and the great durability of certain rights have information cost implications.

Courts are not the only potential enforcers of rights. Many norms and some laws may be designed to facilitate informal enforcement by members of society. An actor may have some incentive to facilitate such enforcement, at least as far as this concerns the right the actor holds. Nevertheless, actors may have a desire for idiosyncrasies that increase the processing load for informal third-party enforcers. For example, allowing full customizability of marriage would raise the cost of bringing social disapproval to bear on those violating their vows.149 In this example, informal third-party enforcers face processing costs not fully internalized by those who would like to customize their legal relations.

4. Potential violators.

Another audience for property rights consists of the dutyholders. Dutyholders need to know what rules (or rights) not to violate. Each dutyholder will engage in measurement up to the point where the additional benefit in expected liability saved equals the additional cost of measurement. However, most property rights are protected with sanctions rather than prices, so that many potential violators will not be in equipoise; consequently, a small decrease in the sanction would not affect behavior.150 If rights become too difficult to process, violation and liability might be the better choice.151 Furthermore, more complicated rights will sometimes require more measurement in order to avoid the violation.

Will a creator of a right—the one sending the message—internalize the costs to potential violators? The answer is "no" if the potential violator would engage in more measurement but no greater violation, or if the violation leads to full compensation to the owner. Additional complication of the right would lead to more measurement or damage awards, but this would not be

149. See, e.g., ERIC A. POSNER, LAW AND SOCIAL NORMS 79-80 (2000) (arguing that "[t]he problem is that the existence of multiple or idiosyncratic relationships might be so confusing to the members of the community that community enforcement becomes impossible" and discussing the example of marriage — William Bishop, 'Is He Married?': Marriage as Information, 34 U. TORONTO L.J. 245, 252-54 (1984) (presenting signaling model of marriage in which standardization of marriage relation allows third parties to deter misbehavior).


151. Louis Kaplow, A Model of the Optimal Complexity of Legal Rules, 11 J.L. ECON. & ORG. 150 (1995) (arguing that rules will not affect behavior where they are complex enough that costs of following them exceed liability for violations).
internalized by the owner. Nor can an owner bargain with the large and indefinite class of potential violators to achieve the optimal level of information load. Thus, the information costs will not be borne by the owner absent some social or legal intervention.

It is easily overlooked that potential violators’ information costs bear on the design of the law. Property presents a simple message to the outside world. As J.E. Penner notes, the dutyholder only needs to know that he does not own the asset in order to know that he must keep out. This keeps informational demands on the dutyholder to a minimum. Contrast this with a hypothetical property right that allowed twice the punishment on odd-numbered days and none on even-numbered days, or an easement in people wearing hats. Potential entrants would have a lot of inquiring to do before entering—or even following a crowd onto—any piece of property. The costs of dealing with this asset and with assets in general would increase.

5. Market participants in general.

In general, actions that make informational demands may make measurement costs for dutyholders increase across the board with respect to all assets, not just the one in question. The original creator of the right will not fully bear these general confusion costs.

In such situations, sellers may find it worthwhile to take actions that impose costs on buyers and that are socially costly overall. For example, where many shoppers prefer a good other than the one for sale, and the goods are close substitutes, a seller may engage in bait and switch. In this scenario, the seller falsely advertises good A, but when the buyer arrives, only good B is on sale and the costs of arriving at the store are sunk. If a high enough proportion of such buyers then buy good B, bait and switch is worthwhile to the seller. However, the possibility of bait and switch behavior will discourage some buyers from searching in the first place, causing an overall social loss. Similarly, Victor Goldberg has shown that an individual seller will bear the full portion of precontractual costs only under very restrictive circumstances.

152. See sources cited supra note 21.
153. PENNER, supra note 21, at 29.
154. For example, things are often marked visually in property. See Carol Rose, Seeing Property, in PROPERTY AND PERSUASION: ESSAYS ON THE HISTORY, THEORY, AND RHETORIC OF OWNERSHIP 267 (1994). What one sees is heavily dependent on background knowledge. See id. at 294-97. Even notions such as salience, see supra note 78, may well turn out to be partly culture-specific and partly biologically determined.
155. Another example is artists’ rights. See supra note 19.
157. Victor P. Goldberg, The Gold Ring Problem, 47 U. TORONTO L.J. 469, 475-81 (1997) (discussing a model of French and McCormick in which sellers do bear precontractual costs, but which assumes a first-price, sealed-bid auction, no collusion by bidders, fixed costs of bidder participation, infinite number of potential bidders,
Goldberg points out that in many other situations, a seller may be tempted to freeride; whereas a sole seller would have a full incentive to develop an innovation that would cost-effectively lower bidders’ costs, one of a group of sellers in Goldberg’s model would not be able to capture the full benefit of the innovation and would be tempted to freeride. This insufficient incentive to innovate is similar to the problem of contractual innovation in the presence of network effects; if network benefits not capturable by the innovating proposer accrue to future adopters, the innovator will have a less than optimal incentive to develop the innovation.

We, however, are concerned here with the mirror-image of this problem. The seller may communicate in such a way that the communication benefits the seller but introduces a complication that will be borne in all transactions. Bait and switch is one example. Another is the use of “pound” to mean a measure that is particularly suited to one’s own business, where the possibility of using everyday terms without notice forces all buyers to inquire into the nature of the “pound” that any seller is using. Sellers as a class (or society) may be worse off, but the one who uses the idiosyncratic pound will only bear a fraction of such costs. This type of confusion should come as little surprise because it forms the basis for the doctrine of trademark confusion: If two marks are sufficiently close, then consumers will either forego the product information associated with the brand or they will have to make inquiries at a cost that could be avoided with more clearly separated marks. That is, closeness of marks raises the costs of audience members’ processing. The wider the audience to which the message is broadcast, the less shared, specialized background knowledge will be available to the average audience member to help make the message less ambiguous.

D. A Model of the Communicative Tradeoff

If we keep in mind that total communication costs involve both production and processing costs, then the nature of the audience becomes an important factor on the cost side. The cost of a message will depend both on its length and on the cost of deciphering it. As we have seen, one could send a long message that does not require much inference or background knowledge or one could send a short message that makes heavy demands on the receiver.

homogeneous valuation, variance reduction by additional information, and a competitive market with zero economic profit).

158. Id. at 480.

159. See sources cited supra note 147.

In less formal contexts, we expect information per unit of production cost to be higher than in more formal contexts. Increasing explicitness and formality will achieve the benefit of less variance between the interpretations of audience members at the cost of less information per unit of production cost. Very roughly, more words carry a more stable and certain meaning, but will convey less information per word.

Consider a contract. One may use terms that have developed a special meaning for the speaker or use longer, more explicit clauses. When common knowledge can be presumed, and when courts can be trusted to discover the parties' meanings, shorter forms might be preferred. Similarly, familiar forms will require less processing. In the absence of common knowledge, longer locutions can be used, but then the nonwriting party has to search through them for possible traps.\(^\text{161}\) To solve this problem, less information could be sent (by omitting detail), or standardized terms could be used. Again, the more impersonal the audience, the less personal, trust-based assurance there is that traps are not present. Further, the larger the amount of background knowledge required to discover traps, the higher the cost of discovering them.

In order to understand the tradeoff between intensiveness and extensiveness of information, we must compare these concepts to a baseline. This requires forming an expectation of how much information cost to incur in delineating and processing rights to an asset. Generally, we expect assets of higher value to be subject to regimes of rights that involve greater delineation and greater information costs. That greater asset value calls forth more informational effort can be seen as an application of the Demsetz thesis: As resource values increase, it becomes worthwhile to take more actions to internalize externalities.\(^\text{162}\) Of course, some assets are easier to defend or to steal, but holding that constant, we expect a greater willingness to incur information costs as the stakes involved become higher. Thus, although land may be the subject of title registration both because it is stationary (easy to record) and valuable, value seems to be a main reason why people incur much higher information costs to keep track of the ownership of paintings and other artwork, as opposed to other types of less valuable personal property.\(^\text{163}\)

Given that asset value is an important consideration in expending information costs, there is still the question of whether the information costs per audience member should be relatively high or low. More precisely, we would expect greater delineation efforts in the case of valuable assets or high-stakes resource conflicts, but this delineation can rely on different informational strategies. These strategies range along a spectrum from very personal contexts characterized by intensive information all the way to

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161. See Rasmusen, supra note 128.
162. Demsetz, supra note 55, at 350.
163. For particularly famous artworks, much of the information is already well-known, especially to dealers, making it easier to keep track of the object.
impersonal contexts characterized by extensive information. The more impersonal contexts will require greater formality, so that the typical audience member will not incur large processing costs.

By focusing on the foregoing aspects of audiences and messages, we can focus the model on measurable quantities. The rate of information is the amount of information per unit of delineation cost. The amount of information content can in principle be measured, for example, by the length of the shortest description in an agreed upon language. Delineation cost is in principle measurable too, especially if all that is required is a comparison of delineation costs and their changes over time. A high ratio of amount of information to delineation cost (information intensiveness) can reflect a strategy that relies on a high quantity of information (relative to the other components of delineation). Alternatively, it can reflect the compacting, through reliance on context, of a large amount of information per unit of information-production cost. Further, the processing cost of the audience is likely to increase more than linearly with rate of information: The audience members most interested in the information will be the best equipped to extract it (with specialized skills and experience, along with background knowledge), but the marginal cost of each additional audience member (who will be less expert) will rise. At the same time, the marginal benefit of reaching additional audience members will fall.

Consider property versus contract. Because many audience members have to process in rem rights, there is reason to standardize and simplify property rights, leading to a lower rate of information. Moreover, large audiences for in rem rights cannot process implicit context-dependent messages at low cost, and this means that the amount of information per unit of delineation cost must be kept low (i.e., by ensuring that a message will come in an explicit, formal package). By contrast, with more personal rights, greater amounts of information can be processed by the few, and greater reliance on context allows more information content to be achieved through less delineation (and delineation cost). Thus, if the information rate is best regarded as the ratio of amount of information to delineation cost, in personam and in rem contexts represent opposite ways of striking a tradeoff. In the former, high intensity case, adding additional audience members who are expected to process a large amount of information causes costs to mount quickly. In the latter, low intensity case, additional audience members can be added at low cost.

164. See, e.g., Ming Li & Paul Vitányi, An Introduction to Kolmogorov Complexity and Its Applications (2d ed. 1997); see also supra notes 11-73 and accompanying text.


166. These modest assumptions suffice for the present model. For a preliminary discussion of the value of information under different assumptions about utility functions, see Kenneth J. Arrow, The Value of and Demand for Information, in Decision and Organization: A Volume in Honor of Jacob Marschak 131 (C.B. McGuire & Roy Radner eds., 2d ed. 1986).
Therefore, we expect high information rates to be associated with small audiences (information intensiveness) and we expect low information rates to tend to be associated with larger audiences (information extensiveness).

Different assets call for different levels of information overall and for different mixes of information intensiveness and extensiveness. Consider for a moment the world of zero transaction costs (including processing costs), in which everyone could have a contractual duty to the owner of Blackacre to stay off and this duty could be tailored individually to each right-duty relationship holding between O and every other member of society. At the other extreme, O might decide just to keep everyone off and use Blackacre by himself. This requires everyone else simply to keep off what they do not own—a principle that applies not only to all nonowners of Blackacre but also to all nonowners of most owned assets. These two approaches would cost the same (nothing) in a zero-transaction-cost world. But, in the world of positive transaction costs, the tradeoff between intensiveness and extensiveness of information does matter. For rights to assets that can elicit value from a small number of people having special access, it makes sense for the rights involving those few to be *in personam* and of high information content relative to delineation cost (and to the value of the asset). For the audience of people who can contribute to output by simply staying away from the asset, we would expect an *in rem* duty of low information content relative to delineation cost and asset value.

Thus, relative to the cost of producing a message, one can communicate at a high information rate, but this will require a smaller audience in order to keep communication costs down. In other words, there is an *isocost* reflecting the tradeoff in communication between average information rate and numbers of hearers: Points along the line connecting the two axes in Figure 1 all represent different combinations of information rate and audience size that are equally costly. Additional isocost lines to the northeast in Figure 1, not drawn here, would involve a greater level of cost. In Figure 1, this is illustrated with information rate \( r \) on the \( y \)-axis and audience size \( n \) on the \( x \)-axis. Here I model audience extensiveness based on audience size, but the model could easily be extended to create an index based not only on audience size but also on its heterogeneity, indefiniteness, and other features implicating processing

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168. Analogously, it is the presence of transaction costs that makes the distinction between intrafirm and market transacting relevant. R.H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* (n.s.) 386 (1937).

169. If processing costs are the important variable here, they will determine the slope of the isocost. If the fixed costs of producing a message increase, this will shift the isocost inward but will not shift the optimal ratio of intensiveness to extensiveness as long as the isobenefit curves all have the same shape. If this model is used dynamically, the fact that production costs may vary with the size of the audience may become important. For example, technology might make an informationally intense “data dump” relatively cheaper (although not necessarily cheaper to process).
costs.170 The origin depicts the minimal unit of information being communicated to one person.171

FIGURE 1: THE COMMUNICATIVE TRADEOFF

\[ n \quad = \quad \text{audience size} \]
\[ r \quad = \quad \text{information rate} \]
\[ C \quad = \quad \text{isobenefit for contract situation} \]
\[ P \quad = \quad \text{isobenefit for property situation} \]

The diagonal line in Figure 1 is an isocost for communicating legal relations, which depicts combinations of information rate and audience size that are achievable at a given cost. Cost (of any sort) will be incurred up to where marginal cost equals marginal benefit. This leaves the question of how to allocate resources within this overall cost—to information rate or audience size. For the same cost, one can communicate at a high information rate to a small audience (high \( r \), low \( n \)), or at a low information rate to a large audience (low \( r \), high \( n \)). Recall that information rate is the amount of information per unit of delineation cost, which has implications for the amount of information and its degree of context-dependence. For convenience, I will assume there is one linear isocost constraint on communication, but nothing essential to the analysis turns on this.

170. Usually audience size will correlate with audience heterogeneity and anonymity, but this is not always so. For an attempt to trace the implications of breaking up the notion of in rem dutyholders into numerosity and indefiniteness, see Merrill & Smith, supra note 16, at 789-809.

171. Otherwise we would need asymptotic isocost lines. The linear isocost line is adopted for convenience only.
For some matters, the benefits of communicating information about rights does not extend beyond a small group, and this is illustrated with isobenefit curve $C$ (mnemonic for contract) and those parallel to it. Points along $C$ represent the attainment of the same level of benefit in the contract-like situation and, moving outward toward the northeast, each curve represents a higher level of benefit. In other situations, there is a benefit to communicating with the world, as in the case of *in rem* rights, although not much information need be communicated to secure most of the benefit. This is illustrated by the isobenefit curve $P$ (mnemonic for property) and the curves parallel to it.\(^\text{172}\)

The optimal mix of information intensiveness and extensiveness in a given situation occurs at the highest isobenefit curve reachable from the isocost (i.e., where the isocost line is tangent to an isobenefit curve). In the first, contract-like case, the curve $C$ is tangent to the isocost at point $\left(n_c^*, r_c^*\right)$, which means that the right will be characterized by intensive information directed at few people. In the case of curve $P$, the tangency point is at $\left(n_p^*, r_p^*\right)$ and the right will be characterized by less intensive but more extensive information than curve $C$.

Now, as discussed in the last section, the externality problem emerges here on the extensive margin. Costs are most likely not to be internalized by a sender of a message when the message is broadcast to the world at large. In the case of ordinary speech, this externality does not normally exceed the nuisance of being bothered by a message one does not want to hear. But, where greater consequences attach to how a message is decoded, more intervention, public or private, is likely to occur.

This informational externality can be depicted by drawing three isocost lines as in Figure 2. This is a model of a speaker who does not face the full costs of the processing by the audience. It could, for example, be a junk faxer who does not have to pay for the paper, time, and machine wear and tear of the faxees whom he tries to reach, or a telemarketer who does not pay the opportunity cost of the called party's disrupted activity. Or it could be someone communicating a possessory claim to the world. The communicator does not fully face the costs of the extensiveness of information. Thus, to this person, the isocost line appears to be $AB$ rather than the actual line $AA$, which would reflect all the costs of the communication.\(^\text{173}\)

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\(^{172}\) Both curves are concave reflecting the fact that information rate and information extensiveness are not perfect substitutes: By giving up some of one input, one can achieve a given quantity of benefit as long as one substitutes some of the other input, but as one approaches the extremes, more and more of the first input has to be given up.

\(^{173}\) For convenience, I have adjusted the scale so that the slope of $AA$ is $-1$. Nothing important turns on this.
The speaker’s choice is skewed towards excessive extensiveness. The optimal point is $n^*$, which is where the full-cost line $AA$ is tangent with the isobenefit curve $q_2$—the highest level of net social benefit attainable with this budget. Because the speaker does not fully internalize processing costs on the extensive margin, the private apparent budget line $AB$ has a less steep slope, reflecting the preference for extensiveness. As a result, the speaker will choose $n'$ as the degree of extensiveness: The speaker, not facing the full cost, will believe himself to be at the tangent point of line $AB$ with the high isobenefit curve $q_3$. Actually, netting out all costs and benefits (not just those facing the speaker), the speaker has chosen a point where the actual budget line $AA$ intersects the lower isobenefit curve $q_1$. The speaker’s choice reflects more extensiveness than would be optimal by the amount $n' - n^*$; and, from a social point of view, there is less net benefit $(q_2 - q_1)$ than would be the case if the speaker had chosen less extensiveness, $n^*$, rather than the greater $n'$.

174. Another way to see this is to consider that, from a social point of view, one cannot do better than $AA$, so the private actor is in effect selecting along a budget line $CA$, which shares a point with $AA$ on the $x$-axis but is parallel to line $AB$. That is, when the private actor
The divergence of the private from the social cost leads to a deadweight loss. If cost-effective, intervention might be used to close this divergence. I will argue that a wide variety of devices in the law are obligatory analogues of the devices adopted in natural language when audiences are large and anonymous. These devices come at some cost. They require setting up and policing, and they may prevent private actors from accomplishing beneficial objectives—what may be termed "frustration costs." But in keeping with the Demsetz thesis, we expect more such mandatory devices where more is at stake.

Generally, with more at stake, we would expect more complexity to be worth incurring, but this makes some of the informational intervention under discussion here all the more striking. In the case of high-value assets, we might expect the complexity of the rights to be high, in Demsetzian fashion. At the very least, as assets increase in value we would expect an increase in complexity. But complexity and information cost are not incurred evenly with respect to all rights in an asset. In personam rights will impose higher informational demands on dutyholders than will in rem rights. And if the law intervenes to prevent in rem rights from imposing large informational demands on the broad audience, this in a sense runs against the expectation created by the asset value. Thus, where a lot is at stake in terms of asset value and the law intervenes to keep things simple, an explanation is all the more needed. The informational tradeoff supplies a rationale for the intervention and can also explain where, in the constellation of rights surrounding an asset, the intervention will take place. The informational externality is largest where rights are broadcast to a large, heterogeneous, anonymous audience.

This model is testable, but only in a rough way. Because we are often not (yet) in a position to measure absolute amounts of information or audience processing costs, it might seem that we cannot test the propositions we derive from this model. This is not the case. What we need is a way to estimate relative magnitudes of information and processing cost, and measurement at this level is feasible. To facilitate this sort of informal empiricism, we must believes he is at point B, he is really at point A on the x-axis. Then the actor will trade off r and n at the rate reflected in line AB (and parallel line CA), i.e., at a rate of \(-\frac{OA}{OB}\). The line CA is the social equivalence isocost line; it is drawn to reflect the tradeoff made under a full accounting. Notice that CA is tangent to the low isozonant q1, again reflecting the social benefits of only q1, instead of the attainable and higher q2.

175. These frustration costs are lower than they might otherwise be because of a feature that the system of building blocks of property law share with natural language: recursion. The elements can be combined in various iterative ways. See Merrill & Smith, supra note 4, at 36-37.

176. See DRETSKE, supra note 7, at 54-55 (noting methods of comparing amounts of information without measuring absolute levels); Cheung, supra note 165, at 516 (arguing that as long as different observers can agree that transaction costs are higher in one type of situation than in another, then the transaction costs are measurable at the margin, and testable propositions can be derived).
choose examples that differ as little as possible except along the dimension being measured—typically audience size or character. For now, we will not be able to predict or recommend an absolute level of information intensiveness given a context, but we will be able to show that the law tends to allow more or less information intensiveness in contexts where the model leads us to expect such differences. Most clearly, at the poles of small and personal audiences and large and anonymous audiences, the law will, if anything, allow more intensiveness of information in the former and restrict it in the latter. What we do not expect is the reverse pattern (greater facilitation of intensiveness for the wide and anonymous audience).

These patterns reflect devices for addressing informational externalities, but the question remains, who would supply such devices and why? As already mentioned, communication about legal relations may supplement or contradict extra-legal norms. Judges may be the audience for these norms, as legal realists tend to celebrate, but judges may not have the knowledge needed to apply them directly, as neoformalists deplore. Present parties and future actors, including future judges, are in turn part of the audience for judges’ opinions. The extent to which officials address part of their messages solely to expert audiences of lawyers and judges is a central question to legitimacy: Is it legitimate for official actors to address different messages to different audiences in a form of “acoustic separation”? What the debates about formalism and acoustic separation have in common is that they often proceed on an all-or-nothing basis. Either formalism is bad (because it is unjust or not nuanced enough to achieve efficiency) or it is good (because, absent a formalistic approach, judges will misinterpret parties’ norms and disrupt settled expectations). Similarly, the plain language movement

177. For this reason, comparisons between contracts and statutes or statutes and constitutions would have to be undertaken, if at all, with far more care than would contract-to-contract comparisons (as discussed infra Part III.C), statute-to-statute comparisons (e.g., for intellectual property infra Part III.B) or constitution-to-constitution comparisons. Also, for this reason, factors like the velocity of transactions must be held constant. As a dramatic example, calculating fractions is not hard given more than minimal time, but Lawrence Ritter has indirectly measured transaction costs associated with a medium of exchange by showing the amount of advantage that Las Vegas casinos forego in order to avoid time-consuming handling of chips in the context of odds bets in games of dice. Lawrence S. Ritter, On the Fundamental Role of Transactions Costs in Monetary Theory: Two Illustrations from Casino Gambling, 10 J. Money, Credit & Banking 522, 524-28 (1978).


179. Within law and economics, part of the context that some scholars have recently questioned include the use of evidence of custom and conduct. Comp. Lisa Bernstein, Merchant Law in a Merchant Court: Rethinking the Code’s Search for Immanent Business Norms, 144 U. Pa. L. Rev. 1765, 1796 (1996), Robert E. Scott, A Relational Theory of Default Rules for Commercial Contracts, 19 J. Legal Stud. 597, 615 (1990), with Jody S.
often assumes that speaking to any audience other than the public at large is illegitimate. As we will see, the present framework points towards *differential formalism*. However we resolve these questions about the desirable level of formalism or audience composition, a constraint applies: Communicating to a wider, less expert audience will entail more cost or it will require a reduction in the intensiveness of information.

This Article will illustrate the tradeoff between the intensiveness and extensiveness of information. I do not argue that a certain level of intensiveness or extensiveness is optimal in any given area of law. Instead, I contend that this informational tradeoff is basic enough that it is a theme running through disparate areas of law. I thus present a partial explanation for certain features of the law, bringing out what they have in common along the informational dimension. In proceeding in this informally empirical fashion, the aim is to explain (partially) a range of features and to avoid counterexamples. Whether these illustrations amount to explanations can only emerge in the long run, but this Article will start the process of testing its main propositions. Allowing for the limits of this approach, I will argue that the patterns that emerge so far are striking.

E. *Legal and Institutional Responses to Informational Externalities*

Before turning to the devices by which the law manages the informational tradeoff, a word is in order on how the tradeoff makes itself felt in the legal system. I am not claiming that the law as it exists reflects the optimal point in striking this tradeoff. My claim is rather that the law reflects some attempt to deal with the information externalities discussed earlier, and my immediate concern is how the tradeoff operates in legal institutions. That the tradeoff is a major feature of courts helps to explain why courts are as responsive to the costs of extensive communication as I argue they are.

Each judge is part of a network of judges communicating with each other. Martin Shapiro’s theory of legal decisionmaking is based in large part on the costs of communicating extensively to other judges of other courts. Redundancy in legal communication is valued because of the large number of potentially interfering messages being sent. To this one can add that a more heterogeneous audience is likely to find redundancy helpful in processing a message.

Why would judges police the costs of communicating intensively to a broad audience? First and most straightforwardly, judges may realize that

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Kraus & Steven D. Walt, *In Defense of the Incorporation Strategy*, in *JURISPRUDENTIAL FOUNDATIONS*, *infra* note 88, at 193. Additionally, see *infra* Part III.C.

180. See *infra* notes 253-55 and accompanying text.


182. See *id.* at 129; see also *infra* notes 196-99 and accompanying text.
intensive communication to large and heterogeneous audiences is costly. Certainly, important features of the law—such as the *numerus clausus* principle, which directs judges to leave changes in the limited menu of *in rem* property forms to legislatures, and rules of thumb that equity will modify property less readily than contract—are consistent with such a realization.183 Because we all have experience with communication, a concern for the informational tradeoff may operate semiconsciously in the ready acceptance of these doctrines. As in the realm of communication, an audience’s lack of understanding or disapproval counts as a major device for internalizing processing costs of information to the sender of the message.

Reinforcing this basic concern is the fact that judges are included in the audience for many of the communications they are policing. Thus, idiosyncratic communication will meet with judicial skepticism in part because the judge does not share the necessary background knowledge. Thus, a generalist court’s communicative interests are to some extent aligned with those of third parties, forming with them a large and heterogeneous audience.

As compared with legislatures, however, courts are likely to be more comfortable with higher degrees of information intensiveness. Put differently, there is some tendency for legislatures to announce rules and for courts to fashion standards. Although legislatures, courts, and agencies all may create rules and standards, in areas such as basic property law, historically legislatures have tended more in the direction of rules. Legislatures have often designed very clear, sharp-edged rules—“crystals” in Rose’s terminology—that are relatively easy to process ex ante, whereas courts with access to the greater amounts of information generated by particular cases are tempted to add complex ex post judgments or “mud.”184 Recording acts and their judicial interpretation are the classic example.185 Legislation operates prospectively, and, ex ante, a rule that involves little judgment is sometimes cheaper186 and often involves lower processing costs by nonexpert audiences. Indeed, in Louis Kaplow’s formulation, being ex ante is definitional for rules.187 Thus, providing for the creation of standards often involves delegation (or usurpation)

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183. See infra note 315 and accompanying text.
184. Carol M. Rose, *Crystals and Mud in Property Law*, 40 Stan. L. Rev. 577, 578-79 (1988) (discussing how over time “straightforward common law crystalline rules have been muddied repeatedly by exceptions and equitable second-guessing, to the point that the various claimants don’t know quite what their rights and obligations really are”).
185. See id. at 585-91.
187. See id. at 559-60 (“This article will adopt [a definition of rules and standards], in which the only distinction between rules and standards is the extent to which efforts to give content to the law are undertaken before or after individuals act.”); see also Frederick Schauer, *Playing By the Rules: A Philosophical Examination of Rule-Based Decision-Making in Law and in Life* 131 (1991) (stating that “rules are necessarily made in advance of their application”).
of the legislature’s power.\textsuperscript{188} Legislatures may increase their overall power by delegating some questions to agencies or courts, if otherwise they could not address these areas at all because of limited resources. But, for a given question, delegation increases the role of the other institution vis-à-vis the legislature. As with the \textit{numerus clausus} principle in property, the effect of the norm of judicial self-restraint is to increase the legislature’s role. For present purposes, it is only important that different institutions are likely to strike the tradeoff between information intensiveness and extensiveness differently.

Courts are producers as well as processors of messages. The plain language movement can be seen as an objection to courts’ engaging in such intensive communication with the lay public (if the movement is not really a denial of the tradeoff in the first place).\textsuperscript{189} Whether this is a problem depends in part on what one thinks of the role of potential informational intermediaries—for example, lawyers and journalists. Thus, lawyers and judges share a great deal of background knowledge, which can facilitate intensive communication between them. What looks like nonsense to the untutored eye may lead to a high degree of convergence in interpretation by experts.\textsuperscript{190} If (a big if) lawyers can then communicate clearly in everyday language with their clients, the fact that the sources of law—such as statutes, cases, and regulations—are not accessible is less of a problem than would be the case if the unaided public were meant to be a direct audience for these communications.

If the problem is that the costs of information on the extensive margin are less likely to be internalized, then high stakes would call for a reduction in the emphasis on information intensiveness in extensively broadcast communication about legal relations. As we will see, the law does tend in the direction of enforcing the correct tradeoff between the intensiveness and extensiveness of legal information. Moreover, the law’s methods of doing so are similar to

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\begin{itemize}
  \item \textsuperscript{188} See, e.g., \textit{id.} at 159 (“[A]ny argument for rule-based decision-making can be seen to view rules as essentially jurisdictional, as devices for determining who should be considering what. Rules therefore operate as tools for the allocation of power.”); Adrian Vermeule, \textit{Interpretive Choice}, 75 N.Y.U. L. \textit{Rev.} 74, 92-93 (2000) (discussing that “[s]tandards, in effect, delegate decisionmaking authority to the decisionmaker at the point of application”).
  \item \textsuperscript{189} See infra notes 253-54 and accompanying text.
  \item \textsuperscript{190} A dramatic example occurred at a conference at Washington University that brought together linguists and law professors. Linguist Charles Fillmore brought in what he claimed was a “semantically incompetent” document, meaning that it was uninterpretable. The document in question was an antenuptial agreement. After guffaws by the linguists who professed not to understand the document, each of the half dozen or so lawyers present came up with the same interpretation (as likely would have the reader of this article), to the irritation of the linguists. See Northwestern University/Washington University Law School Law and Linguistics Conference, 73 WASH. U. L.Q. 785, 922-40 (1995) [hereinafter \textit{Law and Linguistics Conference}]. More generally, the linguists at this conference did not seem to want to extend their broad notions of context and pragmatic interpretation to legal language. \textit{Id.} at 865-68.
\end{itemize}
devices used in natural language, except that in law they are mandatory on account of the higher stakes involved.

1. Limiting the amount of information.

The larger the amount and variety of information, the higher the processing costs for a large and anonymous audience. This often results in standardization of the type and format of the information. As Merrill and I have argued elsewhere, the *numerus clausus* principle in property law reduces processing costs for the broad audience of *in rem* dutyholders: In contrast to the customizability of contract rights, which hold between a few identifiable persons, *in rem* property rights must fit into the categories the law prescribes.191 As such, these rights contain less information along certain dimensions than they otherwise might. The major difference between most natural language contexts and an area of law like property is that standardization usually emerges spontaneously in the case of natural language but is often imposed mandatorily in the case of property under the *numerus clausus* principle.192 One might say that generally the stakes are higher in law than in everyday conversation, but of course an externality in conversation would add up given that everyday conversation is so common.

Strikingly, we also get legal intervention in the *format* of statements when the communication is *in rem* (i.e. broadcast to a large and indefinite audience). Format for present purposes refers to how the representation of information is organized. This includes spatial arrangement, including ordering, indexing, and the like. Format is especially important for processing, as is suggested by evidence that the format of labels influences consumer behavior.193 For example, the Nutritional Labeling and Education Act requires, in most cases, that food products carry a standardized nutrition label.194 Likewise, the examples earlier of surgeons and wrong-site surgery have a somewhat *in rem* character: The communication is anonymous rather than face-to-face.195 The identity and many specific characteristics (including background knowledge) of the physician who receives the message are unknown to the communicator. Whereas in everyday personal communication, the speaker’s desire to be understood and not to incur disapproval will be enough to prevent non-cost-

192. See id. at 37-38.
195. See *supra* notes 122-23 and accompanying text.
effective demands on the hearer, in more widespread and anonymous contexts with higher stakes, intervention becomes more likely.

Another method of reducing processing costs relies on redundancy. This may seem paradoxical, but, in information theory, redundancy—repetition or pattern in a message—allows reconstruction of a message, even if some of the message is degraded.\textsuperscript{196} Messages that are to be communicated broadly are often more subject to degradation if damage correlates with distance and retransmission (especially by large numbers of retransmitters who may not share background knowledge, as in the parlor game called "telephone"). Martin Shapiro’s theory of stare decisis and the "legal" style of discourse—complete with string citations and repetition of long-standing formulas—is based on the need for a high degree of redundancy where legal communicators (especially judges) are trying to coordinate across court systems and across time.\textsuperscript{197} Repetition or pattern in a message increases the probability of what appears in later parts of a message, decreasing the amount of (new) information these later parts (and hence the overall message) contain. As Shapiro points out, in complex and loose organizations, like a court system, the large numbers of signals and their disparate and complex subject matter will lead to noise and a need for redundancy to counteract the noise.\textsuperscript{198}

As the flip side of information, redundancy is subject to a tradeoff. The "ideal" message contains that amount of information such that one more bit of information provides a marginal benefit that is offset by the marginal cost of errors that could be prevented by cutting back on the amount of information (i.e., by increasing redundancy).\textsuperscript{199} In our terms, the likelihood of error increases with audience extensiveness, and so one must either incur more communication processing costs or lower the intensiveness of the information (by increasing redundancy). The fact that judges are the audience for many communications, including those of other judges, means that judges will perceive information intensiveness as more costly than they otherwise might.

Related to the issue of amount of information is its variety. Communication can be costly if it is complex. Complexity can be defined in many ways, but one common definition is that the complexity of an object is measured by the length of the shortest possible description in an agreed upon


\textsuperscript{197} See Shapiro, supra note 181, at 127 (stating that "legal discourse organized by the rules of stare decisis emphasizes, and itself insists that its success rests upon, high levels of redundancy and, therefore, . . . low level of information").

\textsuperscript{198} See id. at 129 ("High levels of noise should invite the deliberate introduction of high levels or redundancy to counteract the noise . . . ").

\textsuperscript{199} See id. at 126 ("The ideal message . . . will contain the highest proportion of information and the lowest proportion of redundancy necessary to identify and correct errors in transmission.").
specification method. This measures the amount of information contained in a message. For our purposes, we are interested in the costs of processing complexity, which means that the variety of information can add to the amount of information in a particularly costly way. Thus, for example, a right that has many different and interacting dimensions is complex and leads to high information cost because there is an overall budget constraint on resources used for processing. Thus, complex structures of rights will be costly to process because there are more elements to process and more interactions between elements to process.

Complexity can lead to information intensiveness, but complexity is distinct from whether information is packaged as a rule or a standard. The latter distinction refers to the timing of the determination of a legal result. A rule sets forth ex ante the criteria for its application to facts, whereas a standard leaves much for ex post evaluation. Rules can be simple or complex, as can standards. Frequency of application can militate in favor of rules (to take advantage of economies of scale in one-time determination) and in favor of complexity (because of the higher stakes involved). Information intensiveness will tend to rise with complexity if the ratio of complexity to delineation effort increases. But either rules or standards could be information intensive when they require the application of a great deal of background knowledge by actors or adjudicators.

2. Limiting reliance on special contexts.

More generally, communication can be costly for members of a large and relatively anonymous audience if it requires a high degree of background knowledge. If a message requires the acquisition of such knowledge for interpretation, this is very costly. Alternatively, hearers (dutyholders or

200. See, e.g., Li & Vitányi, supra note 164. Greater precision—distinguishing more cases—will, all else equal, lead to more complexity in this sense, and to greater production and processing costs. On the costs and benefits of this type of complexity in the law, see, for examColin S. Diver, The Optimal Precision of Administrative Rules, 93 Yale L.J. 65 (1983); Kaplow, supra note 151, at 150.


202. See Kaplow, supra note 186, at 560 (adopting definitions according to which “the only distinction between rules and standards is the extent to which efforts to give content to the law are undertaken before or after individuals act”) (emphasis omitted).

203. Id. at 593-96. Kaplow makes the point that complexity would increase with frequency of application. See id. at 595. This can be regarded as an example of a Demsetzian account of higher stakes calling forth more delineation effort. See, e Terry L. Anderson & P.J. Hill, The Evolution of Property Rights: A Study of the American West, 18 J.L. & Econ. 163, 170 (1975); Smith, supra note 16, at S462-64, S474-78 (discussing changes in benefits and costs of delineation efforts and their methods).

204. An analogous cost may exist with reliance on legislative history. See William N. Eskridge, Jr., Should the Supreme Court Read The Federalist but Not Statutory Legislative
potential purchasers in the legal context) will make mistakes or forego opportunities because of lack of background knowledge. Measurement costs include performing the measurement and the residual error cost, and these costs increase with excessive reliance by a communicator on background knowledge. In most contexts, this potential externality does not matter, because audience members can largely ignore the message if it is unfamiliar. However, in the communication of legal relations, audience members have some stake in interpretation. Potential violators, in particular, need to arrange their actions in order not to violate property rights. And it is no coincidence that, as we see in possession and related law, the message communicated to potential violators is kept simple and the law is sensitive to the amount and type of background knowledge that such messages require in those processing them.205

The flip side of limiting reliance on specialized contexts is the use of general knowledge that forms the basis for conventions (or focal points).206 If a certain piece of knowledge is (or can be made) widely known, then one can rely on it in shaping the legal rule. Thus, although the court’s task is ultimately regulatory—207—the court decides what conventions count and need not take preexisting conventions as given—the court can find it worthwhile to impose a greater informational load on audiences of dutyholders and others interested in legal consequences if the court’s rule piggybacks on already existing conventions. Alternatively, if a court is creating a convention, relying on what is salient to a large group will make the rule less demanding on its audience.

3. Limiting ambiguity.

As mentioned earlier, audiences can bear large costs when they have to distinguish between two messages that are confusingly close to each other on the surface but have different meanings. This is quite familiar from trademark law, in which customer confusion is the main test of infringement.208

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History?, 66 GEO. WASH. L. REV. 1301, 1321-23 (1998) (evaluating arguments for and against use of legislative and constitutional ratifying history and noting that researching and arguing the former may be quite expensive).

205. See supra Part I.A.

206. The law can create this background knowledge. See McAdams, supra note 76, at 1663-89. Creating special rules is likely subject to diminishing returns, and a decision will need to be made which types of situations deserve special treatment. This may be difficult for judges to do on a case-by-case basis.

207. \(\rightarrow\) Avery Katz, When Should an Offer Stick?: The Economics of Promissory Estoppel in Preliminary Negotiations, 105 YALE L.J. 1249, 1250-53 (1996) (contrasting interpretive or convention maintenance approach and regulatory approach)\(\rightarrow\) Lawrence Lessig, The Regulation of Social Meaning, 62 U. CHI. L. REV. 943, 1039-42 (1995) (arguing that regulation of social meaning can happen through text or through the context against which texts have meaning).

208. See supra note 160 and accompanying text.
If two marks are confusingly close, consumers will no longer be able to save on search costs by relying on the gross features of the mark. They will have to do without the message or engage in the kinds of costly search (testing the product or investigating the brand name) that the trademark was supposed to economize on in the first place. For those with high familiarity with the type of product (say, others in the industry or very large customers), the two close marks might not be confusing because such actors can rely on an already acquired large background knowledge. So, to the knowing few, there will be little extra cost. But to the large and anonymous audience, closeness can cause much greater additional cost. Thus, ambiguity or confusion is one cost of information intensiveness in communication to an extensive audience.

More generally, the avoidance of ambiguity would seem simply to reflect the well-known factor of clarity, which is usually desirable in a legal rule as long as it is worth whatever has to be traded off against clarity. However, some avoidance of ambiguity is also required by the informational tradeoff. Ambiguities can be costly not only because risk-averse people will take excessive precaution, but also because resources must be expended to resolve the ambiguity. In a personal context, where speaker and hearer share much background knowledge, ambiguities can be resolved with a high probability of successful communication at fairly low cost. More impersonal audiences that do not share this knowledge would have more inquiring to do in order to achieve a given level of disambiguation. Reducing ambiguity permits the audience to bring less background knowledge and context to bear on resolving the ambiguity, and limiting ambiguity is a method of lowering context-dependence and its attendant information costs.

4. Nondefeasibility and structured search.

Another method of reducing the information processing costs of a wide audience is to provide for nondefeasibility and structured search. As discussed earlier, in natural language some inferences are defeasible, which allows them to be canceled, and this usually requires a high degree of audience background knowledge to succeed. Recall that pragmatic inferences—like the one from “It’s cold here” to “Please close the window” and that involved in Grice’s gas station example—require a lot of context but allow great economy of expression.


210. For one of many examples of an analysis based on certainty, consider again the majority opinion in Pierson v. Post, 3 Cai. R. 175 (N.Y. Sup. Ct. 1805). The recognition of this tradeoff goes back to the beginnings of modern law and economics. See R.H. Coase, The Problem of Social Cost, 3 J.L. & ECON. 1, 19 (1960) (arguing that rights should be assigned with economic efficiency in mind, “insofar as this is possible without creating too much uncertainty about the legal position itself”).

211. See supra Part II.A.2.
Pragmatic implicature allows for economy of expression, but implicatures are provisional or defeasible, such that to be secure in one’s inference one has to wait to make sure that implicatures are not canceled. Thus, with nondefeasible inferences one can have confidence in the inference without waiting for the rest of the statement, and this is one aspect of their being less context-dependent than pragmatic inferences. As we will see, the communication of legal relations exhibits a similar distinction. If one describes a right as a fee simple or as a term of years, then one need not examine the rest of the document to know roughly what one is getting. A simple glance suffices and one need not worry about an entire class of traps. That is, nondefeasible features allow conclusions to be drawn without elaborate processing of the whole communication and its context. Nondefeasible inferences typically rely less on background knowledge and context than do defeasible inferences.

Nondefeasible inferences are more matters of conventionalized (semantic) meaning and so are more crystallized than are the more ad hoc, highly context-dependent inferences that can be modified or cancelled with more information. For communication to a wide audience, greater reliance on conventionalized meaning and nondefeasible inferences is to be expected. As we will see, this is the case in the law’s regime for communicating legal relations.

Generalizing somewhat, we can say that the law will reduce processing costs to the extent that it structures inquiry in the following way. If by examining some subset of relevant information one can draw a conclusion that will persist even though one stops there, the cost of searching the rest of the information set can be saved. This also extends to organizing complexity in such a way that a class of information relevant to only some searchers is cabined off. Trusts have this function: When elaborate interests corresponding to the traditional legal estates in land are accomplished in trust, they are mostly of concern to a small group consisting of settlor, beneficiary, and trustee and are not of concern to potential purchasers or violators of the property right. And, in general, the trust form serves as a signal that potential complexity lies ahead. So, to the extent that the law encourages these types of complexities to be cast in the form of a trust, those who want to avoid these complications can just make sure that they steer clear of trusts. Structuring complexity allows general rules of thumb to obviate much potential search behavior. Just as

\[\text{212. Some have argued that defeasibility is an inherent property of legal rules and concepts. I return to this broader—but related—notion of defeasibility. See infra note 255.} \]

\[\text{213. Relatedly, Rasmussen notes in the contract context that one reason for incomplete contracting is that boilerplate is cheaper to write than to read and that short, standard terms can be used as a way of cheaply signaling that there are no traps. See Rasmussen, supra note 128, at 1-2, 8-21.} \]

\[\text{214. See Merrill & Smith, supra note 16, at 849 (arguing that while trusts “minimize[] third-party transaction costs” they primarily focus on the concerns of those directly affected by the trust).} \]
nondefeasible information allows one to avoid searching for the potential
override, cabining some information behind a well-known signal allows one to
ignore it for most purposes.

5. Limiting audience responsibility.

As argued above, the law intervenes to abate informational externalities
only because the stakes are high. One method of addressing this problem is to
lower the stakes for the audience members, thereby reducing the size of the
class of those audience members who will incur the cost of processing.

If an audience member will suffer legal consequences or some kind of loss
if she does not understand legal relations, then she will have an incentive to
measure, even if this is not desirable from an overall societal viewpoint. One
method of addressing this problem is quite direct: Limit the liability of
audience members. In keeping with the theme of standardization, individual
communicators are not allowed to broaden the audience unilaterally.

Most familiarly, the rules about bona fide purchasers for value of
mishandled, entrusted property limit the amount of inquiry necessary. The duty
to inquire is minimal; someone contracting for purchase does not need to
engage in all cost-effective inquiry, and thus the standard is not a negligence
one. Lowering the stakes for the members of the wide audience likewise
lowers their processing costs.

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The types of externalities from information extensiveness correspond
closest with potential methods of reducing them. Both the law and natural
language exhibit these methods, the main difference being that they are not
mandatory in normal speech. But, as we have seen, they become mandatory
when the stakes are higher, as in many legal contexts. As Bell showed in the
context of natural language, speakers adjust less to audience members further
out in their scale (of addressees, auditors, overhearers, and eavesdroppers).

In the higher-stakes legal context, the potential lack of adjustment to the
audience increases as we move away from privity with the producer of a
message about legal relations: The potential externality grows as we move
from contracting partners to successors in interest, potential violators of rights,
and other market participants. And, generally speaking, the externalities

215. See U.C.C. § 2-403(1)-(2) (199 → Richard A. Epstein, Inducement of Breach of
Contract as a Problem of Ostensible Ownership, 16 J. LEGAL STUD. 1, 10-15 (198 → Saul
Levmore, Variety and Uniformity in the Treatment of the Good-Faith Purchaser, 16 J.

216. See Bell, supra note 6, at 160 (stating that “the effect of each audience member on
a speaker’s style design is graded according to role distance”).

217. For the notion of a zone of privity, as it is used in this sense, see Merrill & Smith,
have to do with demands made on the audience in terms of background knowledge and use of context; these include confusing ambiguity, reliance on particularized knowledge and specialized conventions, complexity, and defeasibility. Resolving ambiguities or assessing the strength of defeasible inferences is easier with more background knowledge of context; and imposing the burden of using context on wide audiences without background knowledge raises processing cost in two ways. First, such audiences are not likely to have this background knowledge at low cost. Second, the number of those incurring this cost can also be large.

Returning to the simple model presented above, the law can be expected to intervene where it can cost-effectively push the private isocost line closer to a level that reflects all the costs of communicating, including the full processing costs. These devices can be thought of as helping to manage the informational tradeoff, given existing technologies for communicating. Among such devices for lessening processing costs to wider audiences are: standardization of rights and obligations; reliance on conventions of general application; avoidance of specific background knowledge and context; nondefeasible information; and limitations on the size of the audience.

III. DIFFERENTIAL FORMALISM AND THE INFORMATIONAL TRADEOFF

As we have seen, certain basic features of property and related law reflect a concern with audience processing costs. In this Part, I will present some further applications of the framework based on audience processing costs and the informational tradeoff. First, I will show that the full range of devices identified in the previous Part as mediating the informational tradeoff are present in the law of land records. Then, I will show that concerns with audience processing allow a partial explanation of the differences between patent and other forms of intellectual property protection. Finally, I turn to contract law, an area of property that has become increasingly contextual, or antiformal. I will show that even recent contract law is not uniformly context-sensitive. In particular, I will show that the law varies along the spectrum from complete context-sensitivity to total formalism and adopts differential formalism to questions of communication and interpretation. Depending on the nature and size of the audience, the law takes the form one would expect as reflecting a concern with maintaining a balance between information intensiveness and extensiveness.

A. Search and Notice in Land Records

The nature and history of recording acts provide a striking example of the use of devices like those used in natural language to reduce the costs of the

supra note 4, at 28.
extensiveness of information—but, in the recording context, these devices are mandatory. Recording may seem prosaic, but it is at the heart of many a system of property in land. The first thing to notice about recording is that most legal treatments of recording focus on the producer side of the equation. Most of the time, this takes the form of noting that recording makes furnishing notice to the set of potentially interested parties much cheaper than earlier methods, such as maintaining possession or staging ceremonies like livery of seisin.218 It is true that, once recording is provided for, there may be less reason to standardize the system of what gets recorded (say, interests in land).219 But, often the literature takes the much stronger position that recording solves the notice problem so completely that no standardization of property interests—a numerus clausus—is needed at all.220 This “notice cures all” argument focuses too exclusively on the producer side. As in the context of warnings in tort law, the costs of furnishing notice (or a warning) are sometimes taken to embrace only the costs of writing down a description of the problem.221 This ignores the problem of the recipient of the message and her


219. See Merrill & Smith, supra note 4, at 40 (“As the costs of standardization to the parties and the government shift, we expect the optimal degree of standardization to rise and fall.”). Notice that if, as in registration of title, the records are supposed to have conclusive effect and the registrar of deed must certify their validity, the tendency may be towards standardization in order to make this process less costly. See Arruñada, supra note 218, at 20-21, 31, 43.

220. See Epstein, supra note 138, at 1354-56; see also Alfred F. Conard, Easement Novelties, 30 CAL. L. REV. 125, 131-33 (1942) (arguing that enforcement of easements should not be objectionable on grounds of novelty as long as there is notice). For a response to this notice-cures-all argument, see Merrill & Smith, supra note 4, at 43-45 (arguing that “because not all costs of nonstandard rights would be internalized... some individuals [would] exercise their freedom in a way that would lead to a suboptimal level of standardization”).

221. In the context of the duty to warn, some courts place great emphasis on the low cost of writing a warning. See, e.g., Ross Labs. v. Thies, 725 P.2d 1076, 1079 (Alaska 1986) (“The cost of giving an adequate warning is usually so minimal, i.e., the expense of adding more printing to a label, that the balance must always be struck in favor of the obligation to warn when there is a substantial danger which will not be recognized by the ordinary user.”);
costs. When the literature does express concern about the adequacy of record notice it usually focuses on the fact that the records may deteriorate over time.222

Recordation illustrates the use of all five of the interrelated methods for maintaining something closer to the correct tradeoff between the intensiveness and extensiveness of information, where speakers tend not to face the full costs of processing by the audience: limiting the amount of information; reducing the contextual knowledge required to interpret; limiting ambiguity; using nondefeasibility and structured search; and narrowing the legally responsible audience. Far from being a costless method of furnishing notice, the nature and evolution of recording reflect a concern with the audience.

First and least surprising is that the amount of information presented can affect the cost of a search. In the tort and consumer protection context, some have raised a concern about "information overload," in which more information degrades decisionmaking.223 This overload problem has not been such a concern in the title context, probably because a title search often involves higher monetary stakes than the use of a product.224 Relatedly, a high-stakes context often calls forth efforts at specialization, and thus the audience for a

see also, e.g., Ayers v. Johnson & Johnson Baby Prods. Co., 797 P.2d 527, 532 (Wash. Ct. App. 1990) (concluding that "the burden on Johnson & Johnson, essentially the cost of printing and affixing a warning label, seems light indeed"). Judge Williams, in a case about whether a warning was required that propane cylinders were explosive (in addition to the flammability warning), noted that "[t]he primary cost is, in fact, the increase in time and effort required for the user to grasp the message" and noted that the defendant used what I call a structured search (a brief warning on a canister and longer warning in pamphlet). Cotton v. Buckeye Gas Prods. Co., 840 F.2d 935, 938 (D.C. Cir. 1998); see also McMahon v. Bunn-O-Matic Corp., 150 F.3d 651, 656 (7th Cir. 1998) (noting that "a detailed warning ... might obscure the principal point that precautions should be taken"); Todd v. Societe BJC, S.A., 9 F.3d 1216, 1218 (7th Cir. 1993) (en banc) (Easterbrook, J.) (discussing problems with extended warnings); Ayers, 797 P.2d at 534 (Reed, J., dissenting) (noting possible information overload). For a discussion of these and other cases, see 1 MARSHALL S. SHAPo, THE LAW OF PRODUCTS LIABILITY § 19.08[1] (3d ed. 1994 & 1999 Cum. Supp.); see also sources cited supra note 126.

222. See, e.g., Richard A. Epstein, Past and Future: The Temporal Dimension in the Law of Property, 64 WASH. U. L.Q. 667, 675 (1986) ("Time forces a greater reliance upon documentary evidence, and even that may be forged, lost, altered or destroyed.").

223. Whether information overload is a true problem has been controversial, but the best evidence that there is some problem comes from studies indicating a longer reaction time with more information or degraded decisionmaking where information recall is important; specifically, clutter on labels seems to impair recall of information and structure improves it. See, e.g., MAGAT & VISCUSI, supra note 126, at 90-105 (summarizing controversy and presenting study); Richard Craswell, Interpreting Deceptive Advertising, 65 B.U. L. REV. 657, 690-91 (1985) (noting controversy over information overload theory, which posits that more information can cause recipients to ignore all information, and explaining possible crowding out effect of mandatory information). These studies are only suggestive, since people can reread labels, but possibilities such as rereading suggest that additional information increases the costs of processing, the question being by how much.

224. This would become increasingly true considering the low probability of the remote risks on which a long warning on a product would increasingly focus.
title search—title examiners, lawyers, and the like—is not exactly a nonspecialized one.

Nevertheless, recording acts do limit the amount of information in several ways. Not every instrument can be recorded. The type of instrument may not be within the recording act,225 or it may not be in the duly executed and acknowledged form required.226 Moreover, finding constructive notice for subsequent purchasers only through documents within the “chain of title” limits the amount of information and the search costs than would a more open-ended search for any past transactions over the land.227

Further, although one can argue that there is less need to keep the substance of property interests simple if they can be recorded, simplifying property law and requiring recordation for enforcement against third parties have often gone hand in hand.228 Most dramatically, the 1925 legislation in

225. A state’s recording act may not cover a type of instrument, for example, a mortgage assignment. See, e.g., Hellweg v. Bush, 74 S.W.2d 89, 93 (Mo. Ct. App. 1934) (holding that because the statute did not provide for recording of mortgage assignment, recording one would not give constructive notice or confer priority); Ann M. Burkhart, Third Party Defenses To Mortgages, 1998 B.Y.U. L. Rev. 1003, 1022-32. Most states’ courts have construed the recording acts broadly to include most instruments affecting titles, see 4 AMERICAN LAW OF PROPERTY § 17.8, at 549-50 (A. James Casner ed., 1952), and some states have passed separate legislation allowing mortgage assignments to be recorded, see Ann M. Burkhart, Freeing Mortgages of Merger, 40 VAND. L. Rev. 283, 359 n.257 (1987). As another example, a listing agreement (as opposed to a contract for sale) is not a recordable instrument in some jurisdictions. See In re L.D. Patella Constr. Corp., 114 B.R. 53, 59-60 (Bankr. D.N.J. 1990) (holding listing agreements not to be recordable under New Jersey statute). Other instruments do not affect title and so are not recordable. See, e.g., Snoddy v. NCNB Nat’l Bank of Fla., 575 So. 2d 231 (Fla. Dist. Ct. App. 1991).

226. See, e.g., Messersmith v. Smith, 60 N.W.2d 276 (N.D. 1953) (holding that deed was not recordable, because the notary had not personally witnessed the grantor’s signature, and that despite lack of defect on the face of the deed, one could not rely on it to establish oneself as a bona fide purchaser who recorded first); S. Penn Oil Co. v. Blue Creek Dev. Co., 88 S.E. 1029, 1030 (W. Va. 1916) (“The record does not operate as a constructive notice, unless the instrument is duly executed, and properly acknowledged or proved, so as to entitle it to be recorded.”) (quoting JOHN NORTON POMEROY, A TREATISE ON EQUITY JURISPRUDENCE § 652 (1899)) (citations omitted).

227. Record chain of title means that the purchaser is only responsible for determining whether his grantor or that grantor’s grantor, etc., made any conveyances inconsistent with the current record title during the period from acquiring the interest until the next interest was recorded. See 6 POWELL ON REAL PROPERTY, supra note 13, ¶ 9 –> Francis Philbrick, Limits of Record Search and Therefore of Notice: Part I, 93 U. Pa. L. Rev. 125, 168-86 (1944).

228. This question formed one of the bones of contention over title registration (Torrens-style) between Richard R. Powell and Myres S. McDougal. Compare RICHARD R. POWELL, REGISTRATION OF THE TITLE TO LAND IN THE STATE OF NEW YORK 59 (1938) (noting that English title registration has gone hand in hand with a system of few estates), —– Percy Bordwell, The Resurrection of Registration of Title, 7 U. CHI. L. Rev. 470, 476 (1940) (arguing that “the register appears to be unsuitable for the multiple common law esta’es”), with Myres S. McDougal & John W. Brabner-Smith, Land Title Transfer: A Regression, 48 YALE L.J. 1125, 1136-38 (1939) (critiquing Powell). id. at 1138 n.73 (“In fact it is precisely when there are future and other multiple interests that registration is most obviously superior
England both increased reliance on registration and radically simplified the number of estates. 229 If notice cured all, one would expect that there would be no need to reduce the number of legal estates as long as the land records furnished notice. On the contrary, many commentators in England and the United States have long seemed to believe that recording and standardization increase each other's effectiveness overall, even if they can be regarded as substitutes at the margin. 230

Second, the method of interpretation of recorded instruments reflects a desire to limit the need for contextual background. The simplification of the estate system and its basic standardization both achieve a degree of context-independence in the interpretation of property interests. Following transactors' "intent" in the context of even a recorded interest is something much more like a pigeonholing exercise, despite what courts seem to be saying about this process. 231 (I return to the issue of differential formalism in interpretation in Part III.C.)

to recordation. Under registration is it easier both to keep track of and to protect such interests.), 232 Myres S. McDougal, Title Registration and Land Law Reform: A Reply, 8 U. CHI. L. REV. 63, 73 (1940) (calling complexity of system of estates and method of keeping the records different and unconnected problems).

229. See Law of Property Act, 1925, 15 & 16 Geo. 5, c. 20 (reducing number of legal estates to two, limiting legal concurrent tenants, and defining trust for sale); Land Registration Act, 1925, 15 & 16 Geo. 5, c. 21 (setting up title registration system). In his analysis of the English legislation and its relevance for the United States, one commentator notes that:

One purpose of the acts was to reduce the number of legal estates in land to a manageable number so that the purchaser would have to deal with a minimal number of estates and parties in securing good legal title. A further very important benefit from the drastic reduction in the number of legal estates was to make possible a simpler land registration system.


230. See, e.g., SECOND REPORT MADE TO HIS MAJESTY BY THE COMMISSIONERS APPOINTED TO INQUIRE INTO THE LAW OF ENGLAND RESPECTING REAL PROPERTY 4-21 (1830) (describing insecurity of title and costs of investigating, noting need for uniform system, and advocating general registry for real property); THIRD REPORT MADE TO HIS MAJESTY BY THE COMMISSIONERS APPOINTED TO INQUIRE INTO THE LAW OF ENGLAND RESPECTING REAL PROPERTY 4-21 (1833) (noting inconvenience and costs of nonuniform and complex systems of estates across England); see also W.S. HOLDWORTH, AN HISTORICAL INTRODUCTION TO THE LAND LAW 313-18, 322-24 (1927) (discussing simplification of tenure and registration as strands of reform in England from the nineteenth century to the 1920s); JOHN STUART MILL, PRINCIPLES OF POLITICAL ECONOMY 884 (J.M. Robson ed., 1965) (1848) (criticizing law of real property for uncertainty, complexity, lack of registry, consequent expensive formalities, and costly legal proceedings); FREDERICK POLLOCK, THE LAND LAWS 171-72, 74 (3d ed. 1896) (describing cost and trouble of investigating title in nineteenth century England, noting that registering and simplifying property law were main solutions advocated, and describing reforms).

231. The *numerus clausus* principle is associated with differential formalism in the sense that *in rem* rights are subjected to pigeonholing into prescribed categories. Interestingly, courts often use the rhetoric of intent while engaging in a formalistic pigeonholing exercise—for example, in the context of assignments versus subleases, see
Third, and relatedly, these formal rules purport to reduce the ambiguity of the language of instruments relating to title, and the recording acts seek to define clearly what is and is not "in the chain of title," such that constructive notice to a subsequent purchaser will be found.\textsuperscript{232} Despite the many problems with achieving an actual reduction in ambiguity, the purpose is there.

Fourth, recording acts in conjunction with the \textit{numerus clausus} principle rely heavily on nondefeasibility and structured search. As mentioned earlier, the nature of the estate system allows one to conclude some things about an interest without inspecting an entire instrument closely. A fee simple or a sublease can be identified quickly, and the fine print will not be allowed to contradict the basic features of the estate. This also offers one rationale for traditional courts' apparently circular statements about this or that feature being "repugnant" to an estate or contradicting its "inherent nature."\textsuperscript{233} Such statements were condemned by the realists (and protorealists like Gray) as examples of outmoded conceptualism and stunted formalism,\textsuperscript{234} but some limits on modifications to the basic estates may serve to limit measurement cost.\textsuperscript{235}

\textsuperscript{232} See, e.g., Harry M. Cross, \textit{The Record "Chain of Title" Hypocrisy}, 57 COLUM. L. REV. 787 (1957); Ralph L. Straw, Jr., \textit{Off-Record Risks for Bona Fide Purchasers of Interests in Real Property}, 72 DICK. L. REV. 35 (1967).

\textsuperscript{233} See, e.g., Potter v. Couch, 141 U.S. 296, 315 (1891); N.W. Real Estate Co. v. Serio, 144 A. 245, 246 (Md. 1929); Hutchinson v. Maxwell, 40 S.E. 655, 656 (Va. 1902); J. KENT, \textsc{Commentaries on American Law} *131 (12th ed. 1896) ("Conditions are not sustained when they are repugnant to the nature of the estate granted, or infringe upon the essential enjoyment and independent rights of property. . . . Such restraints were held by Lord Coke to be absurd, and repugnant to reason. . . ."). Alexander notes that repugnancy theory was very popular in the nineteenth century and can be found even in some twentieth century case.\textsuperscript{234} See Philip H. Ward, \textit{Ward on Title Examinations}

\textsuperscript{234} Alexander, \textit{supra} note 233, at 1223-24 (claiming that the devices used by pre-Classical legal scholars and debunked by realist writers in the 1930s and 1940s were "actually demolished earlier by Classical writers such as Gray near the end of the nineteenth century").

\textsuperscript{235} Further, this formalistic approach was reinforced by the strict structure of a traditional deed. In the structure of the traditional deed, one clause (the "granting" clause) set out the basic nature of the estate (within the bounds of the \textit{numerus clausus}); not only could this clause not contradict the estate but according to quite formal rules this clause trumped conditions in other clauses. See Philip H. Ward, \textit{Ward on Title Examinations}
Although proponents of title registration prefer a tract index and a definitive proof of title, the usual American recording system based on grantor and grantee indexes does at least organize search. The grantor-grantee indexes obviously structure search, and the chain of title concept is meant to allow search to come to an end with a (somewhat) determinate result as to whom the prospective purchaser would lose out to in a title contest.

Finally, the law of recordation limits the audience. To the extent that a specialized audience has arisen (and the law allows for malpractice claims in this area), the audience is constricted from the start. In addition, cases have held that third parties who interact with property but who do not have an interest in the property are not required to investigate the records. Thus, contractors who are digging do not have to consult the land records to discover easements for buried cables or rights of way. Much of what could come under the heading of the landowner as the cheapest cost avoider effectively limits the class of persons making up the audience for property interests such as easements.

B. Specialized Audiences in Intellectual Property

As in this case of interests in real property, some rights that are in rem are in practice addressed only to a proper subset of the members of a given society. As the stakes involved in a resource conflict become higher, one might expect a greater degree of specialization in activities with respect to the asset. Divided property rights in assets can be used to facilitate specialization in production or consumption. And this extends to legal communication itself. Specialization of function here allows a greater degree of background knowledge and measurement expertise to come to bear on the problem, not just of communicating, but also of processing legal rights. Commonly, legal communication is indirect. The general public or litigants may be the ultimate audience for statutes, opinions, and regulations, but lawyers and journalists are the audience in the first instance. They then selectively translate this communication for the benefits of the public or certain members, such as clients.

(3d ed. 1997).


237. See, e.g., Mountain States Tel. & Tel. Co. v. Kelton, 285 P.2d 168, 173-74 (Ariz. 1955) (holding that contractor is not deemed to have constructive notice of buried cable that was subject of recorded right of way because those with no interest in the title are not bound to search title to land); Statler Mfg., Inc. v. Brown, 691 S.W.2d 445, 451 (Mo. Ct. App. 1985) (holding no constructive notice to contractor of properly recorded easement for aircraft right-of-way); Merrill & Smith, supra note 16, at 848 & n.264 (noting that "independent contractors and trade creditors who deal with ostensible fee simple owners of real property will not ordinarily find it economically worthwhile to undertake a title search before providing services" and citing examples and commentators' perspectives).
Thus, to continue on the subject of real estate, to the extent that specialists in title search have emerged, the deficiencies in the clarity of the system are partially overcome. Lawyers and title investigators can assimilate detailed and specialized information. Even here, however, simplification has often been advocated. To this we can add that there is a range of specialization from requiring knowledge of the niceties of future interests at one extreme and requiring comprehensibility to the layperson on the other. As it is, the direct audience of expert title searchers is indeed broader than the set of real estate lawyers, but for the most part does not embrace laypeople. Costs to nonexperts can be lowered to the extent that title search is mechanical and does not require the application of costly background knowledge.

Patents are another striking example in which the delineation of the right presupposes expertise. First, as in the real estate case, certain specialists focus on this branch of the law. Prosecuting applications for, challenging, and defending the validity of patents is in large part what patent lawyers do. Furthermore, the users of inventions themselves are specialists in the relevant area of technology and can be expected to be able to process the information that the patent law requires to be disclosed in the patent application process. These disclosure requirements are explicitly measured against an audience of persons “skilled in the art.” Whether a disclosure would, as required, enable one skilled in the art to make and use the invention often involves language and context special to this audience. Indeed, the Federal Circuit has described the “purpose” of the written description requirement as being to “convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,” in a manner reminiscent of the communication we saw in possession law itself. In the case of land, fences

238. See 35 U.S.C.A. § 112(1) (West 2003) providing:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

See also In re Ruschig, 379 F.2d 990, 996 (C.C.P.A 1967) (holding written description to be separate requirement from enablement and that issue is whether “the specification convey[s] clearly to those skilled in the art, to whom it is addressed, in any way, the information that appellants invented that specific compound [claimed]”).

239. See, for example, Loom Co. v. Higgins, 105 U.S. 580, 585 (1882), describing aspects of the loom and noting that:

[All] these things were as well known as the alphabet to those skilled in the art of pile weaving, as it then stood. With this mass of previous knowledge and nomenclature in their minds (as we must suppose it to have been), the language, the explanations, the drawings, and the claims of Webster’s patents must have been perfectly intelligible to them.

Judge Bradley analogizes the situation to astronomers who “understand the language of their brother scientist” which is “all Greek to the unskilled in science.” Id.

240. Vas-Cath v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (emphasis omitted). This purpose does not exhaust the written description inquiry. See Enzo Biochem, Inc. v. Gen-Probe Inc., 296 F.3d 1316, 1329-30 (Fed. Cir. 2002) (holding that showing
and other boundaries must be easily processed by a lay audience—anyone might stray onto the land—but, in the case of patents the possibility of a nonexpert inadvertently "trespassing" on a patent is less likely. Highly detailed and patent-specific information is not only indispensable, but the limited audience of potential violators can be expected to process it. Consumers, while potentially liable for patent infringement simply for using an infringing article, are almost never sued.241 Correspondingly, very few people seem to be aware that a consumer could be liable for patent infringement.242

First sale doctrine, a feature not only of patent but also of copyright and other intellectual property law, also reduces the informational burden on the wide lay audience.243 Under first sale doctrine, a person who legally acquires a patented product or copy of a copyrighted work is presumed to be permitted to resell the item, because the first sale by the holder of the patent or copyright exhausts her monopoly. But interestingly, various branches of intellectual property law differ in just the ways one would expect based on the problems of informational extensiveness.

Contrast patent law with copyright law.244 Here, as in patent law, plaintiffs have an incentive to focus on producers rather than on passive consumers of infringing items. But, unlike in patent law, almost anyone can be a producer of violating material simply by illegal copying. In patent law, it is unlikely that someone will practice the invention in his garage for his own use. As expected, the delineation of a copyright is much simpler and easier to grasp by a lay audience than the delineation of a patent. And, also as expected, lay people are quite aware that they are at least theoretically liable when they engage in illegal copying.

possession is not always sufficient to satisfy written description requirement).


243. 17 U.S.C.A. § 109 (West 2003) (copyright first sale doctrine). The patent first sale doctrine is not codified but has long been a feature of the caselaw. See United States v. Univis Lens, Co., 316 U.S. 241, 249 (1942) ("An incident to the purchase of any article, whether patented or unpatented, is the right to use and sell it...."); Adams v. Burke, 84 U.S. (17 Wall.) 453, 456 (1873) ("[W]hen the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use...he parts with the right to restrict that use."); Bloomer v. McQuewan, 55 U.S. (14 How.) 539, 549-50 (1852); Glass Equip. Dev., Inc. v. Besten, Inc., 174 F.3d 1337, 1342 n.1 (Fed. Cir. 1999) ("The first sale doctrine stands for the proposition that, absent unusual circumstances, courts infer that a patent owner has given up the right to exclude concerning a patented article that the owner sells.").

244. Because patent and copyright differ along more dimensions than audience, the argument here is meant to be a tentative one.
At the opposite extreme from copyright is the little-used statute on semiconductor chip protection. Here there is an even higher level of specialized detail in the delineation of the right and an even lower probability of significant violation by lay people than in the case of patents. Even the subject matter of the act is specialized. Also, as expected, the scope of the right is narrow, further lessening the audience for these specialized rights. And various defenses narrow the class of potential defendants to those who are likely to have expertise.

Variable audience may also explain courts’ seemingly uneven approach to standardization in intellectual property. Merrill and I have noted that the *numerus clausus* principle, under which any innovations in the menu of types of property rights are supposed to come from legislatures rather than courts, operates in intellectual property but with somewhat weaker force with respect to noncore intellectual property interests. The notable exceptions to the *numerus clausus* principle in intellectual property come in the areas of hot news and the right of publicity. In *International News Service v. Associated Press*, the Supreme Court provided a somewhat novel right against misappropriation of hot news: A rival wire service cannot pick up news and immediately retransmit it even if the news is not protected by copyright or as a trade secret. Note that the audience here is likely to be restricted to other news organizations (wire services at the time). Hence, the informational burden of the right is less than would be the case with a new copyright-like property right. Note too that Judge Learned Hand’s effort to prevent the expansion of the *INS* approach came in a case that implicated a wider audience. In *Cheney Bros. v. Doris Silk Corp.*, the plaintiff was asking for *INS*-style protection for fashion designs. A property right in a design is likely to affect a wide audience; even protection for “fashion” designs may well have a practical impact on a wider class of dutyholders than would a right to prevent retransmission of hot news.


248. *Id.* at 69.


250. 248 U.S. 215 (1918); *see also supra* note 53.

251. 35 F.2d 279 (2d Cir. 1929).

252. Rights of publicity are another area where some of the innovation has occurred in
Specialization of audience does not come without costs, including, it is sometimes argued, costs in openness and legitimacy. These concerns have led to the plain language movement in law, which echoes criticisms made forcefully by Jeremy Bentham. In terms of the model presented in this Article, this movement can best be taken as calling not for the abrogation of the tradeoff between intensiveness and extensiveness of information, but for a striking of the tradeoff in favor of a lesser degree of intensiveness appropriate to a more extensive audience. Gaining extra audience members would come at the cost of the intensiveness of the law’s messages.

C. Contract Interpretation

Another method of reducing the costs of information extensiveness is to reduce the audience’s need to rely on context and background knowledge. In such situations, the law will rely on conventionalized meanings from natural language or will create conventions of its own. This formalism often takes the very form that it does in natural language. Here, legal language looks like

the judicial arena. See Merrill & Smith, supra note 4, at 20, 68. Rights of publicity might likewise be unlikely to be violated by the layperson, but here the concerns may be greater than in the hot news context. It does not take a specialist of any sort to come up with the idea of using a celebrity’s image to promote any kind of business.


255. Formalism has been used in many interrelated ways in law. See, e.g., ANDREI MARMOR, INTERPRETATION AND LEGAL THEORY 124-29 (1992) (arguing that judicial formalism as logical inference is a “scarecrow” argument not involved in positivism); Duncan Kennedy, Legal Formality, 2 J. LEGAL STUD. 351, 355 (1973) (defining formalism as view that decisionmaking is mechanical application of rule ⇒ Frederick Schauer, Formalism, 97 YALE L.J. 509 (1988) [hereinafter Schauer, Formalism] (arguing that formalism is a term used to describe decisionmaking constrained by the specific linguistic formulation of rules). What I am calling “formalism”—the degree of invariance of interpretation under varying contexts—is a matter of interpretation of language. Because interpretation is involved in applying rules, formalism as decisionmaking constrained by rule (or rule-ism) depends on some stability of meaning. Usually this is understood to require a (fully) literal or acontextual interpretation in at least some subset of cases. Although it far exceeds the limits of this Article, one might say that relative formalism at this higher level of rule application is also possible, if rules are constrained more or less depending on how
an extreme form of everyday language.\textsuperscript{256} For example, lawyers try to increase precision by repeating nouns instead of using pronouns (as in "Player promises that Player will play..."), a method that we saw was one of the factors used by linguists measuring the degree of formalism in communication.\textsuperscript{257} As the \textit{numerus clausus} principle starkly illustrates, the law imposes different levels of standardization in property and contract. This differential treatment reflects third-party information costs; accordingly, legal intervention to standardize is at its greatest where these third-party information costs loom largest.\textsuperscript{258} In this

formal (in our sense) is the language in which they are couched. In any event, for those who associate the word "formalism" with rule-following or logical deduction, one could substitute "relative literalness" (or the opposite of "relative contextuality") for my "relative formalism."

There is a second, related relation between relative formalism in my sense and legal philosophers' debates over positivism and the possibility of decisionmaking constrained by rules. Some believe that legal rules are inherently defeasible, in that they are always open to override by an open-ended set of exceptions that only become clear as a context for application is supplied. \textit{See}, e.g., G.P. Baker, \textit{Defeasibility and Meaning}, in LAW, MORALITY, AND SOCIETY: \textit{ESSAYS IN HONOR OF H.L.A. HART} 26 (P.M.S. Hacker & J. Raz eds., 1977) (elaborating on Hart's claim that legal concepts are irreducibly defeasible); H.L.A. Hart, \textit{The Ascription of Responsibility and Rights}, \textit{PROCE. ARISTOTELIAN SOC'Y} 171 (1949); Richard H.S. Tur, \textit{Defeasibilism}, \textit{21 OXFORD J. LEGAL STUD.} 355, 355 (2001) (suggesting that law is best understood in the form of "open-ended, defeasible, normative, conditional propositions"). \textit{But see} Frederick Schauer, \textit{On the Supposed Defeasibility of Legal Rules, \textit{51 CURRENT LEGAL PROBS.}} 223 (1998) (arguing that the claim of necessary defeasibility is not always sound). This notion of defeasibility has informational implications similar to the defeasibility of inference in interpreting any communicative act. To the extent that information drawn from a communication (for example, a claim, a legal rule) is defeasible, processing it will be more costly. Determining to what degree to pursue non-defeasibility will depend in part on the nature and size of the audience.

256. This hardly need be so. First, it is surprisingly controversial whether legal language should be regarded as a dialect of the corresponding natural language or should be regarded as another type of communication system. Linguists, in particular, have shown themselves to have a fairly narrow definition of what is a natural language (or, despite their resistance to prescriptivism, what is permissible in a system that is called "natural language"). \textit{See Law and Linguistics Conference, supra} note 190, at 838-39, 865-68. Second, whatever one considers the status of legal language to be, there is no necessity for it to work the same way as everyday uses of English in its use of devices to manage the informational tradeoff.

257. \textit{See supra} notes 106-08 and accompanying text; \textit{see also} PETER M. TIERSMA, \textit{LEGAL LANGUAGE} 71-73 (1999). TIERSMA notes how specialized vocabulary can sometimes undermine precision and that some ambiguity is strategic. \textit{Id.} at 74-86. This observation is consistent with differential formalism.

258. \textit{See} Merrill & Smith, \textit{supra} note 16; Merrill & Smith, \textit{supra} note 4. Interestingly, a protorealist like John Chipman Gray, who was no friend of traditional conceptualism, was nevertheless an advocate of applying (his formulation of) the Rule Against Perpetuities "remorselessly" and without regard to its purpose. JOHN CHIPMAN GRAY, \textit{THE RULE AGAINST PERPETUITIES} § 629 (4th ed. 1942). However realistic this proposition ever was, the idea that different degrees of formalism might be appropriate in different areas of property law makes sense if the more formalized areas involve defining rights in such a way that third parties can form stable expectations at low information cost. It emerges that Gray was concerned about informational problems as well as the dead hand when he discussed
Part, I will show that, even in the increasingly customization-oriented area of contract, courts have tended to preserve a more formalistic approach precisely where concerns about the costs of information extensiveness are most acute.

Often one thinks of contract interpretation as an increasingly nuanced and context-sensitive enterprise, particularly since the legal realists’ attack on the older, more objective and formalistic theories of contract (and of contract interpretation in particular).\textsuperscript{259} The debate over contract interpretation antedates the realist movement. Early in the twentieth century, even a protorealist like Holmes came down in favor of an interpretive methodology that would ask what a reasonable person would make of a statement, without inquiry into the intent of the person making the statement.\textsuperscript{260} Meanings were to be measured from a (reasonable) recipient’s point of view, not the communicator’s point of view, because “it would open too great risks if evidence were admissible to show that when they said, ‘five hundred feet,’ they agreed that it should mean one hundred inches, or that ‘Bunker Hill Monument’ should signify the Old South Church.”\textsuperscript{261} Holmes was not arguing against the use of context, but rather that the context should be viewed from the perspective of the reasonable hearer.\textsuperscript{262}

To this argument John Henry Wigmore replied that, in special contexts, idiosyncratic meanings were often attached to words that, in a more general context, would have another very different and sometimes opposite meaning.\textsuperscript{263} Wigmore advanced the cipher codes of commercial houses as one example among “abundant instances in which not only there is no ‘great risk,’ but there is an absolute necessity, of accepting proof of these private conventions; and these instances shatter the whole argument for the rule as a rule.”\textsuperscript{264} Therefore, in Wigmore’s view, there was no basis in policy or theory for an absolute “plain meaning” rule, although the avoidance of extrinsic evidence might reflect a general maxim of prudent discretion.\textsuperscript{265} James Bradley Thayer, a contemporary of Wigmore’s, was if anything more hostile to plain meaning

customary \textit{profits a prendre}. \textit{Id.} § 586.

\textsuperscript{259} For a modern version of the debate over formalism, see the sources cited \textit{supra} notes 5 and 255.


\textsuperscript{261} Goode v. Riley, 28 N.E. 288, 288 (Mass. 1891); see also Holmes, \textit{supra} note 260, at 420 (citing this case).

\textsuperscript{262} Indeed, like the realists, Holmes was apt to stress the importance of context. In the first stock-dividend case, Holmes noted that “income” in a revenue act need not mean the same thing as “income” in the Sixteenth Amendment: “A word is not a crystal, transparent and unchanged, it is the skin of a living thought and may vary greatly in color and content according to the circumstances and the time in which it is used.” Towne v. Eisner, 245 U.S. 418, 425 (1918).


\textsuperscript{264} \textit{Id.} at 199-200.

\textsuperscript{265} \textit{Id.} at 200.
when he scoffed at the “lawyer’s Paradise where all words have a fixed, precisely ascertained meaning” and argued that “the fatal necessity of looking outside the text in order to identify persons and things, tends steadily to destroy such illusions and to reveal the essential imperfection of language, whether written or spoken.”

Wigmore took comfort from the fact that the trend was away from plain meaning, and in many ways the early work of Thayer and Wigmore anticipated the realists’ rejection of plain meaning. The realists stressed context as part of a program to demystify traditional policies that, in the realists’ view, acquired a false air of linguistic inevitability. Realists and many of their successors do not mean to assert that meaning is completely unpredictable; but in the course of showing the contingent nature of the rules we use, they rely on the inadequacy—or impossibility—of narrow, context-independent interpretation of legal materials such as contracts, statutes, and judicial opinions. Formalistic interpretation was, according to the typical realist view, an obstacle to honest, sensitive, policy-oriented judging. In the area of contract interpretation, the plain meaning rule was one such barrier to a more rational approach. Thus, Corbin went even further than Wigmore and asserted the impossibility of any rule that depends on the face of an instrument: “[N]o man can determine the meaning of written words merely by glueing his eyes within the four corners of a square paper; . . . it is men who give meanings to words and . . . words in themselves have no meaning . . . .” Adherence to the plain meaning rule, under which extrinsic evidence will not be admitted unless a written agreement is susceptible to more than one reasonable

266. JAMES BRADLEY THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 428-29 (1898).

267. See, e.g., Felix S. Cohen, Transcendental Nonsense and the Functional Approach, 35 COLUM. L. REV. 809, 820, 847 (1935) → Lon L. Fuller, Positivism and Fidelity to Law—A Reply to Professor Hart, 71 HARV. L. REV. 630, 663 (1958) (arguing against Hart’s attempt to preserve a core of meaning in legal terms and contending that all interpretation of even the seemingly plainest words requires an inquiry into purpose). Philbrick makes a typical attack on the determinacy of language:

First we had better dispose of some superstitions. A primitive notion survives in many parts of the world—it is perhaps hardly rational enough to be called a belief—that the connection between a word and the thing it stands for is closer than the merely mental connection between symbol and object. Most primitive peoples imagine that the word not only stands for but in some sense is the thing.


268. For a summary of the large body of recent literature denying the possibility of acontextual interpretation, see Timothy A.O. Endicott, Linguistic Indeterminacy, 16 OXFORD J. LEGAL STUD. 667, 681-87 (1996). Some realists went further than others, embracing an extreme nominalism. → L.L. Fuller, American Legal Realism, 82 U. PA. L. REV. 429, 443-44 (1934) (expressing reservations about the extreme nominalism of some of the more radical realists).

interpretation, is said, in the words of Chief Justice Traynor, to reflect "a judicial belief in the possibility of perfect verbal expression . . . . [a] belief [that] is a remnant of a primitive faith in the inherent potency and inherent meaning of words."270 According to this view, a necessary condition for the plain meaning rule to work would be that words have "absolute and constant referents"—which they do not.271 This critique has only gathered steam with the advent of radical critiques of the determinacy of language.272 And, in a variety of fields, the dependency of meaning on context has come to be appreciated more than ever.273

Nevertheless, the critique does miss something, in that interpretation can rely more or less on context and can be more or less convention-based and predictable.274 Under the definition of "formalism" adopted earlier, an expression is more formal the less variance there is, under changes of context, in its meaning.275 If this definition is accurate, then formality is a matter of degree.276 It is not necessary for a language to be one-hundred percent fool-

271. Id. This position tracks that of realists such as Philbrick. See supra note 267.
272. Language is not the only possible source for determinacy of legal outcomes, and various post-realists have advanced other sources of determinacy. See, e.g., HENRY M. HART, JR. & ALBERT M. SACKS, THE LEGAL PROCESS: BASIC PROBLEMS IN THE MAKING AND APPLICATION OF LAW 166-67 (1958) ("Underlying every rule and standard, in other words, is at least a policy and in most cases a principle. This principle or policy is always available to guide judgment in resolving uncertainties about the arrangement's meaning."); Ronald Dworkin, Hard Cases, 88 HARV. L. REV. 1057, 1060 (1975) (arguing that "judicial decisions in civil cases . . . characteristically are and should be generated by principle not policy" and that resultant ideal rules do determine outcomes). But the nature of language continues to form part of the battleground between various types of formalists and antiformalists. See, e.g., Andrew Altman, Legal Realism, Critical Legal Studies, and Dworkin, 15 PHIL. & PUB. AFF. 205, 207-08 (1986) (discussing how the ineliminable, open-textured nature of language led H.L.A. Hart to recognize indeterminacy in peripheral cases and how legal realists saw indeterminacy as deeper and more pervasive).
274. See, e.g., NUNBERG, supra note 273, at 107-17.
275. See, e.g., Heylighen, supra note 106, at 26-28; see also supra notes 17-18 and accompanying text.
276. Some commentators have made the related point that linguistic determinacy in the law is partial rather than complete or nonexistent. See, e.g., Clark D. Cunningham., Judith N. Levi, Georgina M. Green & Jeffrey P. Kaplan, Plain Meaning and Hard Cases, 103 YALE L.J. 1561, 1613 (1994) (book review) (arguing that RICO criteria may not eliminate every meaning of a word but does narrow the possible choices down to tw Richard A. Posner, The Jurisprudence of Skepticism, 86 MICH. L. REV. 827, 831-32 (1988) (characterizing formalism in a pejorative way as the overuse of the syllogism and explaining that many legal questions are in fact resolved syllogistically, but that these types of questions are rarely litigated); Schauer, Formalism, supra note 255, at 525-26 (arguing against the total indeterminacy of language propounded by Fuller and others and distinguishing between core literal meaning and contextual meaning); Frederick Schauer, The Practice and Problems of
proof (or is it clever-person-proof?) in order to form an adequate basis of expectations. Put differently, elimination of possibilities of misunderstanding will be subject to falling marginal benefits and increasing marginal costs, and the goal is to try to equate them, not to eliminate the potential for misunderstanding completely. Proponents of plain meaning are not being realistic (at least if we take their statements at face value!), and their opponents are setting the bar to an irrelevantly high standard.

More importantly for our purposes, the all-or-nothing approach to the determinacy of legal and other language only serves to obscure the degree of reliance on context. Some utterances can be interpreted with sufficient (not total) accuracy without much inquiry into context, whereas others require a great deal of context. This is true of the legal regime as well: The law has traditionally applied (and to some extent still does apply) different interpretive standards in different contexts. As we would expect, the law imposes interpretive standards that tend to eschew context precisely where messages are being broadcast to a wide and anonymous audience. This tendency can be seen in the interpretation of conveyances, of third-party beneficiary contracts, and of public offers and advertisements.

Before turning to the areas in which contract interpretation most retains the formalistic approach, consider the extent to which courts will permit the use of evidence of context in ordinary contract interpretation. The story of the substantial relaxation of the parol evidence rule is well known. According to the traditional plain meaning rule, an integrated agreement was to be interpreted by consulting the written documents that the parties designate as evidencing the contract; only if the written document (or documents) was ambiguous could the court then consult extrinsic evidence (of conversations, past dealings, and so on).277 Many courts have disavowed the plain meaning rule, as has the second Restatement.278 In perhaps the leading case, Pacific Gas & Electric Co. v. G.W. Thomas Drayage & Rigging Co., the California Supreme Court allowed extrinsic evidence on the question of whether there was an ambiguity.279 Even courts that retain the plain meaning rule may be much

Plain Meaning: A Response to Aleinikoff and Shaw, 45 VAND. L. REV. 715, 737-38 (1992) (noting that the indeterminateness of language is a matter of degree); see also Ken Kress, Legal Indeterminacy, 77 CAL. L. REV. 283 (1989) (arguing that law is only moderately indeterminate and that this indeterminacy is not a major problem for the law’s legitimacy).

277. 5 CORBIN ON CONTRACTS § 24.7, at 33 & n.88 (Joseph M. Perillo ed., 1998) (citing cases).

278. 2 RESTATEMENT (SECOND) OF CONTRACTS § 212 (1981); 5 CORBIN ON CONTRACTS, supra note 277, § 24.7 at 39-53 & nn.102-51. The second Restatement explains how far it has gone and why: “It is sometimes said that extrinsic evidence cannot change the plain meaning of a writing, but meaning can almost never be plain except in context. Accordingly, the rule stated in Subsection (1) is not limited to cases where it is determined that the language used is ambiguous.” RESTATEMENT (SECOND) OF CONTRACTS, supra, § 212 cmt. b.

279. 442 P.2d 641 (Cal. 1968).
more willing to label an interpretation reasonable, thus finding an ambiguity that will open the door to extrinsic evidence.

Moreover, extrinsic evidence can be used to show that the parties have, in Wigmorean fashion, created new and special conventions among themselves that may well be at odds with ordinary, everyday meanings of the words. This use not only extends to trying to decide the scope of a term like "chicken," but to situations in which ordinary words are stripped of their usual meanings and supplied with new ones by particular people, as where "five" is made to mean "ten," or, for that matter, pace Holmes, where "Bunker Hill Monument" can be made to signify "Old South Church." Parties can make up a code for the purposes of a single contract, and courts have enforced contracts using such codes, but only if both parties knew or had reason to know of the code. For example, the Supreme Court, relying on parol evidence, has interpreted a contract according to a code adopted by the parties, in which a series of proper names ("Albert," "Alfred," "Alexander," "Amanda," and so on) were used and understood as referring to the firm of B.S. Bibb & Co.

In many of these cases, the parties are affirmatively seeking inaccessibility to third parties, which presents no externality as long as there is little seepage of this usage out into the wider world. In other cases, parties have made oral modifications of this type, for example, agreeing that "measured in vehicles" as used in their contract should mean "four cubic yards."

There are limits to courts' willingness to follow parties' idiosyncratic usages, and, as expected, courts are less accommodating when the potential audience for the communication becomes more widespread and anonymous. In TKO Equipment Co. v. C & G Coal Co., Judge Easterbrook disparagingly observed that "[u]nder the prevailing will theory of contract, parties, like Humpty Dumpty, may use words as they please. If they wish the symbols 'one Caterpillar D9G tractor' to mean '500 railroad cars full of watermelons,' that's fine—provided parties share this weird meaning." In the TKO case, the court refused to follow the interpretation offered by a party, precisely because it would work to the disadvantage of a third party who had no reasonable way of knowing the true nature of the deal. As is the concern with the *numerus*

281. 5 CORBIN ON CONTRACTS, supra note 277, § 24.8, at 54-55 & n.156.
284. TKO Equip. Co. v. C & G Coal Co., 863 F.2d 541, 545 (7th Cir. 1988).
285. The defendant mechanic had a lien on two of the earthmovers that the plaintiff had leased or sold to a now-bankrupt company. The contracting parties (plaintiff and now-bankrupt entity) had executed a lease that proclaimed their deal to be a "lease" of earthmovers and not a sale and security interest (with a view towards avoiding the automatic stay of bankruptcy law). But the parties tried to have it both ways, when the plaintiff "lessor" also filed a declaration that it had sold the earthmovers and retained a security interest, fulfilling the requirements under the Uniform Commercial Code. *Id.* at 542-44.
clausus principle and the recording acts, subsequent purchasers and lenders cannot be expected to share the secret knowledge of the parties. And this concern becomes more acute, the broader this third-party audience becomes.

This concern with third parties is, as we have seen, quite prominent in the context of land conveyances, and it is here that formalism has had more staying power. First of all, the plain meaning rule has arguably persisted more in cases involving deeds and conveyances than in commercial contracts; many of the same rules and famously loose canons may apply in both deeds and contracts, but deeds have been, and to some extent continue to be, subject to special strict rules (or stricter application of common rules) that displace the looser rules or canons that apply generally to the interpretation of written instruments.286 The late Justice Mosk, who was among the most prominent defenders of the plain meaning approach even in commercial contracts,287 noted that adhering to the plain meaning approach is especially important in the case of deeds in order to give notice to third parties:

The plaintiff lessor was asking the court to follow its (now bankrupt) contractual partner’s intent and characterize the transaction as a sale and security interest, especially where this would accord with their desire to take a fall-back position in bankruptcy. (Because the “lessee” had paid the price for the two tractors that the defendant repaired, the plaintiff “lessee” would not have a security interest in them under the lease characterization.) This the court refused to do, noting the detriment to strangers to the original deal, like the defendant mechanic with a lien, who lack knowledge of the original studied ambiguity the parties created. Id. at 545.

286. See, e.g., Irby v. Roberts, 504 S.E.2d 841, 843 (Va. 1998) (“[W]here the language in the deed . . . is clear, unambiguous and explicit . . . a court called upon to construe such a deed should look no further than the four corners of the instrument under review.”) (citations and internal quotation marks omitted); White Log Jellico Coal Co. v. Zipp, 32 S.W.2d 92, 94 (Ct. App. Ky. 2000) (finding no ambiguity in deed despite parties retyping error and deposition testimony regarding alternate interpretation); Anderson v. Gilliland, 624 S.W.2d 243, 244-45 (Tex. App. 1981) (in dispute over separate and community estate, construing quitclaim deed strictly against the apparent intention of both now deceased grantor husband and grantee wife); Bruce M. Kramer, The Sisyphean Task of Interpreting Mineral Deeds and Leases: An Encyclopedia of Canons of Construction, 24 TEX. TECH. L. REV. 1 (1993). Also interesting is that Justice White, an opponent of the plain meaning approach in constitutional law, contrasted constitutions with deeds:

[T]his Court does not subscribe to the simplistic view that constitutional interpretation can possibly be limited to the “plain meaning” of the Constitution’s text or to the subjective intention of the Framers. The Constitution is not a deed setting forth the precise metes and bounds of its subject matter; rather, it is a document announcing fundamental principles in value-laden terms that leave ample scope for the exercise of normative judgment by those charged with interpreting and applying it.


Nowhere are the foregoing criticisms more telling than in the case of a deed giving notice to the world of the boundaries and nature of ownership of a plot of land. As stated, a deed may need to provide such notice for centuries, and very precise terminology and syntax have been devised for that purpose.\textsuperscript{288} Indeed, not only is it unlikely that a subsequent purchaser, for whom the recording acts were designed, will have the necessary background knowledge to reach the same interpretation as a court using the full extrinsic evidence approach, but both the records and instruments like deeds are designed to inform the world of ownership.\textsuperscript{289} This world can include people who never come to court. For example, a given instrument may affect downstream owners.\textsuperscript{290} Or a neighbor may be very interested to know the scope of an adjacent property owner’s easement for light and air against an owner on the opposite side.\textsuperscript{291} One can plan better if one knows the covenants, options, and easements granted by one’s neighbor. The preamble of the 1640 Massachusetts Bay recording statute seems to reflect a desire to provide notice to the world, in describing the statute’s purpose as “[f]or avoyding fraudulent conveyances, and that every man may know what estate or interest other men have.”\textsuperscript{292} It may well be that the rest of the world, or even the neighbors, should not be able to sue owners because they relied on such records of the relevant instruments, but reliability and low-cost interpretability to such far-flung audiences is useful.

In the context of land records, formalism and standardization allow simplification and nondefeasible conclusions based on limited search and, more generally, structure the search for information, thereby lowering costs. This is not to say, however, that past or existing levels of formalism in property law are optimal—the formalism traditionally applied in the deed context could be

\begin{itemize}
  \item \textsuperscript{289} Carloni, supra note 288, at 916.
  \item \textsuperscript{290} See, e.g., Murphy Slough Ass’n v. Avila, 27 Cal. App. 3d 649 (Cal. Ct. App. 1972); Carloni, supra note 288, at 901, 917 (criticizing use of extrinsic evidence in Murphy Slough case to decide whether fee simple or merely an easement had been granted and noting potential impact on downstream owners’ rights to water).
  \item \textsuperscript{291} Carloni, supra note 288, at 917. The many race-notice statutes, which protect later purchasers without notice only if they record their own interests, can be seen as an attempt to make ownership interests known to all the world. Id. at 916.
  \item \textsuperscript{292} Act of Oct. 7, 1640, 1640 Mass. Acts 290, reprinted in 1 RECORDS OF THE GOVERNOR AND COMPANY OF THE MASSACHUSETTS BAY 306-07 (Nathaniel Bradstreet Shurtleff ed., 1853). The English have long been suspicious of recording precisely because of families’ interests in privacy. See Bostick, supra note 229, at 75-76, 99-100 (noting provisions for secrecy in English Land Registration Act of 1925 as by-product of historical concern for privacy and arguing for their undesirability in American context).
\end{itemize}
quite hairsplitting, and extended to a special syntax as well as vocabulary—
but there is a rationale for maintaining a higher level of formalism in property
than in other areas of law that have fewer third-party effects.

One would likewise expect some tendency towards formalism in third-
party beneficiary contracts. Here, by definition, a third party is involved, but
quite often it is a definite rather than an anonymous third party, making for a
case intermediate between the usual personal contractual context and the more
impersonal property contexts. Accordingly, we find that courts take an
intermediate interpretive approach towards third-party beneficiary contracts.
Courts basically focus on the parties’ intent to benefit the third party, but courts
also impose a degree of formalism. As one commentator put it:

[T]hird-party beneficiary contracts create the potential for unfair surprise.
Third persons, who presumably lack information about private understandings
between the parties, may rely on the contract’s language in planning their own
affairs. In these circumstances, giving priority to the shared intent of the
parties poses the risk of substantial hardship.

As a result, the intentionalism of contemporary contract interpretation is
relaxed a bit when it comes to third-party beneficiary contracts. Courts do
attempt to discover, as a general matter, the shared intent of the parties. But
they also take into account the possibility that the contract’s language might
create expectations on the part of non-parties.

Often this more formal approach surfaces in deciding whether a third party is
an intended beneficiary—a determination that is the ostensible modern test for
whether a third party can enforce. Courts often employ relatively free
interpretable methods to discover the intent of the contracting parties, but will
apply a more rigid approach based on reasonable reliance (and eschewing an
inquiry into party intent) precisely where third parties might rely on the
contractual language. This can be regarded as more formal, because reliance
on the literal language of the contract will often be reasonable from the third
party’s point of view, and here the more formal approach allows easier
enforcement by third parties.

293. One linguist has provided a detailed analysis of the special syntax that applies to
language creating vested versus contingent remainders. See Jeffrey P. Kaplan, Syntax in the
Interpretation of Legal Language: The Vested Versus Contingent Distinction in Property

294. Legal intervention seems to take various forms intermediate between mandatory
standardization and customizability in bailments, landlord-tenant, security interests, and
trusts—situations that partake of some but not all of the features of in rem rights. See Merrill
& Smith, supra note 16, at 777.

295. Mark L. Movsesian, Are Statutes Really “Legislative Bargains”?: The Failure of

296. 2 Restatement (Second) of Contracts, supra note 278, § 302; see also E.
Allan Farnsworth, Contracts § 10.3, at 677-78 & n.1 (3d ed. 1999) (documenting
influence on courts of Restatement Second’s intended-beneficiary test).

297. Some courts even require the “intent to benefit the third party be found in the
language of the contract itself,” which Melvin Eisenberg criticizes as being out of step with
the lack of a requirement under the second Restatement’s approach that actual reliance be proved; potential reasonable reliance is enough.298 The intention-to-benefit rule also has the effect of limiting the audience: If only intended but not incidental beneficiaries can sue to enforce promises, the degree of involvement and background knowledge these third parties have is likely to be higher than that of incidental third parties. These third parties with standing would be more likely to handle intensive information at reasonable cost than would the average potential third-party beneficiary, including an incidental third party. Thus, if A contracts with B to pay B’s debt to C, the intended beneficiary C can sue, and is more likely to be “close to the deal” than is an incidental beneficiary like pipe manufacturer C where A agrees with B to use C’s brand of pipe in constructing B’s house. The third-party beneficiary is even more likely to have rich background knowledge if, as some courts require, both the promisor and the promisee intend to benefit the third party.299 To a similar effect is the rule that parties are free to rescind a third-party beneficiary contract before the third-party beneficiary is identified, regardless of when a beneficiary’s rights become vested.300 Thus, the law of third-party beneficiaries intervenes where information intensiveness may be excessive for a wider audience, but this intervention is mild and selective, as one would expect, for a third party fairly close to the creator(s) of the right.301

Likewise, courts revert to a more objective standard in interpreting offers aimed at a large and heterogeneous audience. Partly, this is a result of interpreting offers from the point of view of a reasonable offeree. If an offer is presented to the public at large, then the reasonable person will not have special background knowledge, including that of the offeror.302 Offerors and offerees on average share less background knowledge than do obligors and obligees

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298. Restatement (Second) of Contracts, supra note 278, § 302 cmt. d (“[I]f the beneficiary would be reasonable in relying on the promise as manifesting an intention to confer a right on him, he is an intended beneficiary.”). Thus, although the use of reliance appears to be part of the rise of realism in contract, this provision embraces even hypothetical reasonable reliance on manifestations, which has a formalistic effect.


300. See, e.g., Farnsworth, supra note 296, § 10.3, at 679 & n.12 (citing as dictum Associated Teachers v. Bd. of Educ., 306 N.E.2d 791 (N.Y. 1973)).

301. The broadening of the class of third-party beneficiaries with standing is closely related to the equitable device of the trust→Anthony Jon Waters, The Property in the Promise: A Study of the Third Party Beneficiary Rule, 98 Harv. L. Rev. 1109, 1145-46 (1985). On the place of trusts in the present theory, see infra note 318 and accompanying text.

302. Specificity will push in the direction of finding an offer. See, e.g., Lefkowitz v. Great Minneapolis Surplus Store, Inc., 86 N.W.2d 689, 691 (Minn. 1957).
under a contract, and this may be one reason why courts are less inclined to fill gaps and inquire into intent in the context of offer and acceptance than in contract interpretation generally. This greater reluctance to fill in gaps helps ensure that the set of offers facing the audience of offerees can be processed at lower cost. Likewise, courts’ greater willingness to interpret a detailed and explicit communication as an offer also has the effect of lessening the informational burden on third parties. Finally, offers to sell real estate have to be more explicit than those to sell goods in the normal course of business, which makes sense if third parties are on average more interested in knowing about offers to sell land (and the resulting contracts) than they are in commercial contracts.

The present theory also allows us to explain differential formalism across time. Merrill and I have argued that a lower cost of communicating will lead to a lowering of the optimal degree of standardization. And recently, certain formalism requirements (e.g., for negotiability) have been relaxed as communication has become cheaper. To the extent that this makes information easier to manage and process, we would expect a decrease in legal intervention aimed at reducing the externalities from information extensiveness. On the other hand, if the constraint on processing comes from humans’ psychological capacity, and the improved technology is only better at lowering the cost of transmitting information, we might expect legal

303. See, e.g., United States v. Braunstein, 75 F. Supp. 137, 139 (S.D.N.Y. 1947) (“It is true that there is much room for interpretation once the parties are inside the framework of a contract, but it seems that there is less in the field of offer and acceptance.”); see also Leonard v. Pepsico, Inc., 88 F. Supp. 2d 116, 124 (S.D.N.Y. 1999) (finding a television commercial not sufficiently definite to constitute offer); Henry Simons Lumber Co. v. Simmons, 44 N.W.2d 726, 730 (Minn. 1950) (failing to find offer and acceptance in an exchange of letters about the value of shares); Dictaphone Corp. v. Clemons, 488 P.2d 226, 228 (Colo. App. 1971) (construing a discrepancy between the employer’s retirement plan and the summary of the plan sent to the employee against the draftsman and in favor of plaintiff employee); 1 CORBIN ON CONTRACTS § 2.2, at 107-08 (rev. ed. 1993); FARNSWORTH, supra note 296, § 3.10, at 134.

304. See Architectural Metal Sys., Inc. v. Consol. Sys., Inc., 58 F.3d 1227, 1229 (7th Cir. 1995) (Posner, J.) (“The more willing the courts are to interpolate missing terms, the more difficult it is for the recipient of a vague offer to interpret the intentions behind the offer.”).

305. 1 CORBIN ON CONTRACTS, supra note 303, § 2.2, at 109. See, e.g., Fairmount Glass Works v. Crunden-Martain Wooden Ware Co., 51 S.W. 196 (Ky. 1899) (finding an exchange of highly detailed letters and a telegram to be binding).

306. 1 CORBIN ON CONTRACTS, supra note 303, § 2.2, at 109 n.14 (citing cases). Corbin attributes this tendency to the uniqueness of land (as opposed to the replaceability of inventory) and the popular knowledge that real estate transactions will eventually take on a formal pattern leading to a written contract and closing. Id.

307. The attentive reader will recall that the 1925 English land legislation both set up registries and simplified the system of legal estates. This is not necessarily a counterexample, because the reformers widely agreed that English land law was not close to the optimal point before the reforms.

308. See Merrill & Smith, supra note 4, at 42.
intervention to increase, as it has with laws creating liability for junk faxing and giving rights to recipients of telemarketing calls.309

Interestingly, arguments that formalism (in property law and more generally) reflects feudal or otherwise outmoded thinking can be put in perspective.310 Ironically, the numerus clausus principle arose in its modern form in the wake of the French Revolution as a device to rid the law of complicated feudal incidents.311 From the perspective of the informational tradeoff, feudal society was based to a far greater extent than later Western society on personal relationships.312 In particular, the complicated type of rights characteristic of the feudal era needed only to be processed by a few who were intensely interested. Although there was a market in land, the buyer and seller often were well known to each other. The feudal incidents did not conflict with a highly developed, impersonal market, because there hardly was one.313 When the advantages of such a market became great, the feudal incidents came to be regarded as involving too high a degree of information intensiveness for the now more extensive audience.

Other arguments against formalism focus on their unfairness and on the antiformal practice of equity courts. While it is true that formalism, especially practiced in the extreme, can lead to absurd and unfair results,314 the activity of the equity courts supports the idea of differential formalism based on the informational context. First of all, equity courts traditionally obeyed certain maxims, one of the chief of which was not to undo the common law (and its predictability) with respect to property (principally land in those days).315 Furthermore, equity sought to do justice as between specific, identified parties. Equity jurisdiction itself was in personam; in personam jurisdiction is required for the use of an equitable remedy.316 The maxim "equity acts in personam,

309. See supra note 115.
310. Compare CURTIS J. BERGER & JOAN C. WILLIAMS, PROPERTY: LAND OWNERSHIP AND US.: 211-12 (4th ed. 1997) (stating that the "formalistic, box-like structure" of property law reflects a "feudal vision of property relationships designed to channel (force?) people into pre-set social relationships"), with Williams, supra note 1, at 290-93 (arguing that a nuanced interpretation of the medieval period undermines a formalistic view of feudal property).
311. Merrill & Smith, supra note 4, at 7 n.15 (citing literature).
313. The lack of a developed impersonal market in land does not imply inalienability; medieval markets in land were quite active. Donald N. McCloskey, The Open Fields of England: Rent, Risk and the Rate of Interest, 1300-1815, in MARKETS IN HISTORY: ECONOMIC STUDIES OF THE PAST 5, 31-32 (David W. Galenson ed., 1989) (citing related literature and explaining that the medieval land market was active as peasants moved in and out of villages, although before the plague of the mid-fourteenth century the exchanges were mostly small-scale and involved odd acres and plots).
314. For a classic statement of this problem, see Fuller, supra note 267, at 663.
not in rem" has informational consequences. And under the original approach to equity, if the court's power acted on people and forced them in turn to act, this might well have fewer informational consequences than declaring rights directly in things or reforming legal instruments at will. This is especially so if the ordered action respects the forms prescribed by the common law. This caution ensured that equity would tend to exert its highly information-intensive power in a nonextensive way. More recently, writers like Walter Wheeler Cook have demonstrated that courts of equity do act in rem, in the jurisdictional sense. Nevertheless, although it goes beyond the scope of this Article, courts in equity mode do seem to be reluctant to act in such a way as to make in rem rights more informationally intensive. Even the trust, that quintessential creation of equity, is designed to hide much informational complication behind the trust form where only the settlor, the trustee, and the beneficiary—but not potential purchasers and others in the "world" at large—have to process the complexity.

CONCLUSION

As a system of communication the law must strike a tradeoff between intensiveness and extensiveness of information. Information is intensive where the ratio of information to delineation cost is high. Information intensiveness poses potential externalities where audiences are large, heterogeneous, and indefinite. A dramatic case is possession law; there the law intervenes to maintain low information intensiveness where the audience is potentially the rest of the world. The more that rules of possession do not rely on background knowledge about, say, fox-hunting, the less costly will be third parties' processing of the information about possessory claims.

Because the stakes are typically high when it comes to legal relations, the law tends to make mandatory the very devices seen in natural language for minimizing the processing costs of large, heterogeneous, impersonal audiences who do not share much background knowledge with the speaker. These include limiting the amount of information, cutting down on the use of context, reducing ambiguity, promoting nondefeasibility and structured search, and curtailing audience responsibility. Although this theory has potential implications for legal interpretation in areas such as statutory interpretation.


318. Merrill & Smith, supra note 16, at 848-49; see also supra note 214 and accompanying text.

319. Audience design has implications for the interpretation of statutes and regulations and for the nature of legal meaning in other contexts. See, e.g., PETER H. SCHUCK, SUING GOVERNMENT 4-6 (1983) (discussing "comprehension-based illegality on the part of officials). A theory based on audience processing could supplement the more producer-oriented theories. Suggestive in this regard is Mark Movsesian's observation about third-party interests and their impact on statutory versus contract interpretation: Because a statute
I have focused here on how these devices are especially used in property and in those related areas (even parts of contract law) in which audiences are large and indefinite. Although I do not claim that the informational tradeoff is struck optimally in current law, there is a variety of potential ways for these internalizing devices to make their way into the law. At the least, judges as a nonexpert audience themselves will partially align their interests with those of extensive audiences.

Viewed in this way, the choice the law faces is not between a belief in airtight, noncontextual language or indeterminate, open-ended interpretation across the board; rather, the law faces a tradeoff between the intensiveness and extensiveness of information. The law reflects a strategy of differential formalism. Where speakers making this informational tradeoff do not face the full costs of audience processing, we can expect formalism in law to vary in degree according to the nature and size of the audience. Moreover, a wide range of institutions face this informational tradeoff, which helps explain how the tradeoff makes its way into the law. Setting up a system of legal relations is in part a problem of audience design.

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is directed at third persons who require notice of the statute’s requirements, fairness requires that this cannot include “implicit agreements that fail to appear in the statutory text.” Movsesian, supra note 295, at 1171-81; see also McNollgast, Positive Canons: The Role of Legislative Bargains in Statutory Interpretation, 80 GEO. L.J. 705, 739 (1992) (arguing that the difference “between market exchange and legislative exchange” is “less one of kind than of quantitative magnitude, for third-party effects or economic externalities are an explicit part of the law governing market transactions”). However, statutes and contracts differ along many dimensions, making informational comparisons difficult.