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Probabilistic Disclosures for Corporate and Other Law

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Abstract

This Article explores the costs and benefits of one subset of continuous and discontinuous rules. These expressions are shown to be distinct from the familiar dichotomy expressed as standards versus rules, but they share the difficulty of dividing the world of law in two. Still, regulatory approaches that focus on discontinuities can often be made more continuous, and vice versa. A speed limit is discontinuous in the sense that one drives above or below (or within) the announced limit. But it is often made more continuous – even with more discontinuities – as when the stated limit is different for various kinds of vehicles. This Article works around these definitional problems to show that law often discourages useful disclosures by encouraging parties with information to offer continuous information in order to avoid after-the-fact lawsuits when specific disclosures prove to have inaccuracies. For example, it is common to hear or be warned that a medical procedure poses the risk of death, when the better-informed doctor or hospital could have given the precise percentages attached to various outcomes. Similarly, a corporation is on safe ground when it follows "generally accepted accounting principles," when investors would have learned more from information about good and bad outcomes put in probabilistic terms. The Article works toward the suggestion that law might create a safe harbor in which probabilistic disclosures are protected when they are, or are certified to be, more useful than the ready alternative of fairly general disclosures.

INTRODUCTION

There are obvious costs and benefits to discontinuous, and often more precise, rules. A driving age of seventeen, or an announcement that a meeting will begin at 9:00 A.M., provides more information than an approximation, often continuous in character, like: "One can drive when mature, and then more hours per day are permitted as one gains experience." A parent or employer might sensibly apply the latter rule within a small group, but it is unlikely to work well for in a sizeable legal system. Continuous rules are not synonymous with standards; an employer is unlikely

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to say: "The meeting will begin in the morning when enough people are present." The statement conveys a standard but is not continuous – a difference discussed in Part II. The employer's announcement is vague, but more precise announcements may also provide little information and benefit. Consider a typical warning, often required by law, or at least used as a way of insulating a person or entity against the threat of tort liability: "This medical procedure may cause stiffness, paralysis, or death." The patient is duly warned, but would receive much more information if the disclosure gave the probability of each of these results. The patient could be presented with a curve reporting the distribution of expected outcomes. There will be resistance to a rule requiring this kind of disclosure, not only because it introduces more opportunity for error, but also because as soon as specific information is revealed, it is obvious that it could be yet more specific. Thus, the impact of the medical procedure is likely to vary somewhat depending on a patient's age, gender and other characteristics. As a matter of tort law, it is easier to comply, and be protected, by offering the more discontinuous information – for then the patient was duly warned – than by offering more data, perhaps in the form of a sliding scale with known probabilities of various outcomes.[1] The latter provides much more information, but is also much easier to challenge after the fact. A patient who suffers from a serious outcome might either point to one false piece of information in the presented graph – and with a hundred pieces of embedded information, it is far more likely that a lawyer will find an inaccuracy[2] – or might argue that the continuous information offered was misleading. After all, the doctor probably knew that the patient's age or prior medical history made the graph misleading, as it represented the experience of many prior patients, most of whom had different medical histories. Unsurprisingly, the disclosure required or encouraged by law is of little help, and yet it is an easier rule for law to enforce, and it is a rule favored by doctors and hospitals because it makes for easier compliance. Even some patients might think it superior because it is easier to read, however useless it might be and however inclined most patients, like other consumers, are to skim or ignore it before signaling their consent. This argument about the value of probabilistic disclosures, and the fact that they are presently discouraged by law, is the centerpiece of this Article.

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[1] Arguably, a warning: "This could cause death," or even a typical highway speed limit, is continuous. "Could cause" is not precise and is, therefore, by nature continuous; it simply does not convey the likelihood of a bad outcome. Similarly, even a stated speed limit, though a rule rather than a standard, allows the driver to proceed at *less* than the stated limit. On the other hand, disclosing the three dangers of a drug is in an important way more discontinuous than a warning that "This drug can cause drowsiness or death." Most rules, though fairly precise, are arguably continuous in this way. A truly discontinuous rule would be "You must drive at exactly 60 or 80 kilometers per hour and nothing lower, higher, or in between."

[2] The patient will not need to show much in the way of causation because of product liability law's heeding presumption.

Corporate law, in particular, is an area where probabilistic information – already available to one party – ought to be made widely available. This information often has elements of continuity and discontinuity, but it is at present withheld in large part because disclosure is accompanied by a risk of liability when it is later discovered to have provided an inaccurate particle of information. It is not simply that corporate and securities law make use of continuous as well as discontinuous rules. For example, continuously defined controlling shareholders are subject to a strict fiduciary obligation,[3] while discontinuously defined acquirers must make the government and the world aware of their holdings of more than 5% of the stock of a corporation.[4] Many areas of law are peppered with such contrasts. But corporate law, like the law governing products liability, medical malpractice, and other areas where disclosure is law's centerpiece, is also home to rules that encourage vague information of limited value. It is fair to say that rules requiring disclosure normally discourage yet better disclosure, because each disclosed fact not only creates an opportunity for error but also raises the question of why exceptions and subsets were not disclosed. Much as a surgeon is encouraged to disclose that there is "some chance" that an operation – indeed virtually every invasive procedure – could lead to a disastrous result, corporations are increasingly encouraged to say things like "a lawsuit that has been brought against us presents some risk that our profits will decline." In both cases, the better-informed insider could more usefully offer a series of probabilities, but current law discourages such disclosures. This Article offers an improvement to these governing laws.

Before expanding on such improvements, it is useful to have several tools, each of which elucidates some aspect of continuity and discontinuity in law. Part I clears the deck a bit by showing why the continuity/discontinuity distinction is not the same as the more familiar rules/standards dichotomy so familiar to scholars and students of law. Part II digresses a bit to show that precision in legal rules, usually derived from discontinuities, is often convertible to continuity. Similarly, but less frequently, continuity can often be converted to discontinuity. The choice is therefore one about a default rule, or starting point, rather than an impregnable choice for lawmakers. Part III turns to the idea that the discontinuity (default) option is readily available where there are natural or familiar demarcations. Conversion from continuity to discontinuity in these settings requires strategies that lawmakers (and citizens) are often unwilling to take either because they are costly or politically

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[3] *See, e.g.*, eBay Domestic Holdings, Inc. v. Newmark, 16 A.3d 1, 26 (Del. Ch. 2010), *citing* Ivanhoe Partners v. Newmont Mining Corp., 535 A.2d 1334, 1344 (Del. 1987) ("[C]ontrolling stockholders are fiduciaries of their corporations' minority stockholders.")

[4] The SEC requires that acquirers of more than 5% of a share class must file Schedule 13D or 13G beneficial owner reports until their holdings drop below 5%. Similarly, acquirers of more than 10% of a share class are subject to the Exchange Act's disclosure requirements for insiders, 17 CFR § 240.13d-1 (2018).

unattractive. Part IV then returns to the central contribution of this Article, and the one suggested at the outset. Probabilistic information, often continuous in form, is normally better information, but it is resisted by both lawmakers and regulated parties. Often law resorts to guidelines while private parties develop and adhere to what are declared to be "best practices," and these might be understood as an acceptable but inferior substitute for more explicit continuous or discontinuous rules. Either result, non-binding guidelines or useless warnings, is inferior to the apparent alternative of structured information. The discussion proposes a safe harbor for information that is more useful than that which normally, and often minimally, complies with the law. The most obvious area to experiment with such an innovation is corporate law, where guidelines, accepted accounting conventions, and uninformative demarcations are common.

I. RULES/STANDARDS AND DISCONTINUITIES/CONTINUITIES

All law students are taught to think about the choice between rules and standards. "Drive at a safe speed, appropriate to the road conditions" is easily contrasted to "Speed limit: 100 km/hour; 85 km/hour for trucks." The latter provides rules that are easy for the driver to interpret and easy for law to enforce, even as they are unlikely to be optimal in other ways. The former statement, a standard, recognizes that weather and road curvatures play roles in designating the efficient speed for drivers. Nearly every instruction law gives to citizens, or principals give to their agents, can be described as an attempt to select sensibly between rules and standards, or to combine the two. In some cases, because they are more specific, rules can be described as discontinuous when compared with standards. But when an instruction takes the form of a rule, it can be more or less continuous. Thus, the second form of instruction above uses two rules (100 and 85 km), and takes a step towards continuity. Had it announced fifty different speeds for various vehicle sizes and weather conditions, it might best be described as a continuous set of rules, especially when arranged in ascending or descending order. The same is true for a standard. It is fair to say that the continuous/discontinuous spectrum is a subset of, and lies within, the rule/standard gamut.

Consider, for example, the fact that in many legal systems, once a jury finds a defendant more likely than not to have been negligent and to have caused an innocent plaintiff's loss, the negligent defendant pays single damages so that the plaintiff is, at least in some sense, made whole. It matters not whether the factfinder is 60% or 95% sure of defendant's negligence. This is an example of a discontinuity. Plaintiff either wins or loses, and this in turn is based on a more-likely-than-not finding of negligence (and then of causation). Similarly, virtually all legislatures pass or reject bills, including amendments to them, by up or down majority votes, in what is known as the motion-and-amendment process. Note that this discontinuity is a subset of a rule, as opposed to a

standard. The same is true if some matters require a supermajority vote. If the practice is: "An amendment to a bill is rejected if the speaker of the legislative chamber sees substantial opposition to it," we would have a standard (discretion is now in the hands of the speaker, and need not be consistent over time, as is the case for some faculty votes in my law school, where the Dean is essentially the parliamentarian as well as the presiding official, and need not follow his own precedents), but it is at the same time discontinuous, in the form of an up or down decision.

This Article pays limited attention to the particular discontinuity phenomenon just illustrated, because it has been well discussed in earlier literature.[5] The key insight there is that binary decisions avoid, or at least hide, cycling preferences. If an odd number of voters must choose between A or not-A, A either wins or loses, and life goes on. On the other hand, if the group must choose among three or more proposals, it can easily cycle; it might prefer A>B, C>A, and yet B>C. This will often lead to great displeasure, inasmuch as it will appear to have thwarted a majority; when C wins in the second vote, those who favored B, eliminated in the first vote, will be puzzled at C's victory once they compare notes and realize that a majority preferred B over C. In these cases, the order of voting, as well as other procedural rules, will matter and, in the end, a majority of voters will inevitably be unhappy. If there is nothing more going on, I have argued elsewhere that a discontinuity is preferred (A wins or loses, and proposals are voted on one at a time) in order to avoid cycling, but where cycling is extremely likely, legislatures are suddenly not restricted to up or down votes, but are instead offered a list of options until one is selected by a majority. Again, because this subset of discontinuous choices in law is already recognized, the focus in this Article is directed elsewhere – to the many cases where legal decisions could be discontinuous with three or more options, or categories. There will be room, however, to consider binary decisions that are not entrusted to juries or other decisionmakers that might generate cycling, and thus instability or dissatisfaction.

As we will see, this Article goes well beyond the point about the way in which discontinuities, and in particular binary options, hide the problem of cycling. But the point here is simply that categories, demarcations, or what might be called "relative discontinuities," not only serve to divert attention away from the problem of majority rule where there are several options and several "voters," but also differentiate the discontinuity/continuity division from the rule-standard distinction. For example, in many jurisdictions a senator is elected by attracting a plurality of voters, and then serves a specified term. The process can be described as a discontinuous election

[5] *See* Saul Levmore, *Parliamentary Law, Majority Decisionmaking, and the Voting Paradox*, 75 VA. L. REV. 971, 1012-23 (1989) [hereinafter *Voting Paradox*]; Saul Levmore, *More Than Mere Majorities*, 2000 UTAH L. REV. 759, 772 (2000).

(one candidate wins the term of office), though it may suffer from cycling. With more than two candidates, the second or third-place candidate may well be preferred by a majority of voters over the plurality winner.[7] A more continuous system would have given the winner a longer term of office depending on the size of the victory. The example shows, one last time, that discontinuity/continuity is not the same as the rule/standard distinction. The winning candidate's reward of a full term regardless of the margin of the electoral victory has little to do with rules and standards, and everything to do with the choice of discontinuity over continuity. The election was an all-or-nothing competition.

II. CONVERTIBILITY TO AND FROM LAW'S DEMARCATIONS

A. Converting from Categories to Continuity

There is no need to overstate law's use of categories. In many cases, law-makers categorize with limited impact. Citizens will find ways to make room between categories so as to smooth out previous discontinuities. Consider first a simple case: Law says that a couple is either married or not. The rule seems binary and can be defended as convenient. In the event of separation or death, assets can be cleanly allocated; important medical decisions can be made by one and only one person when the patient is incapacitated; and in some legal systems, monetary obligations can be assigned to one person, unless responsibility is disavowed in a way that potential creditors can discover. In other cases, legal rules as tertiary. One is either a dependent child, a single adult, or an adult married to a single person. Most legal systems forbid polygamy, though its acceptance or rejection is also a discontinuous rule. The critical point here is that people can often escape categories. Couples can live together for as long as they like without any declaration of marriage or fidelity, and over time most legal systems find themselves forced to recognize their arrangements for some purposes. Unmarried couples, or indeed threesomes, can form business partnerships for some purposes and not others; they can contract almost as they like for childcare and support obligations. They can buy property together or separately. In short, they can turn an on-or-off category into one with selective continuity.

This kind of convertibility is found in many areas of law, and indeed law itself helps people cross categorical boundaries. Thus, law prefers clear ownership of real property, but people can choose to rent property with a variety of obligations resting on the formal owner; they can use a

[7] If the vote was 40-32-28 for candidates ABC, and all the voters who most preferred B, like C more than A, then a majority prefers the third-place candidate C, more than the plurality winner, A. C might also be a Condorcet Winner, because once the A voters are taken into account, C might also be preferred over B, but that disadvantage of plurality voting, and great advantage of motion-and-amendment voting, is not needed for the discussion in the text.

corporate or trust form to purchase property with others. They can even occupy a property for a period of time until law is virtually forced to recognize them as owners for some purposes. Similarly, there is the convenient distinction and set of obligations attached to employer and employee, and yet one can outsource tasks, can work for multiple employers, can hire temporary workers, can form business partnerships instead of employment contracts, and can take other steps that law itself enables. Finally, elected officials might call for double or treble damages for certain kinds of violations, but judges and juries will know this, and they can adjust their calculation of damages to create more continuous results.

For an example that is far from binary, consider the variety of categories assigned to those who pool resources. Investors might begin by choosing the corporate or partnership form. Alternatively, they can engage in some activities as non-profit entities. Over time, most legal systems have been forced, through competition or a desire to serve their citizens, to add categories such as limited liability corporations and various forms of partnerships to the point where distinctions which were once discontinuous become close to smooth and unlimited in form. Moreover, corporations can give money to non-profit organizations, and non-profit entities can engage in (often taxable) unrelated businesses designed to produce profits. These moves permit the original investors to smooth out the choices that law originally offered. It is safe to say that where law offers categories, people (or politicians) can often find ways to put their activities in between these categories, converting legal discontinuities to practical continuities. The original categories may have reflected ethical intuitions about how society should be organized, or they may have offered efficient default rules, but neither origin makes convertibility objectionable. One was once a citizen or not, but over time dual citizenship developed, and then permanent residence, guest work, and lotteries, until the system is better described as continuous than discontinuous, and all the more so where there are treaties, conventions, and statutes covering temporary workers and family reunification. The point is not that categories, or discontinuities, are meaningless, but rather that over time legal systems decide on their malleability. One really is or is not an elected official; there are benefits and costs to marriage and to citizenship; there is a point to naming a beneficiary in a will. Categories can be important, even if at first blush they are overstated.

Convertibility of the kind just described is not limited to legal categories. A family might identify with a single religious group, but over time family members move within sects and eventually, through inter-marriage or personal choice, they combine sects, denominations, magical inclinations, and even fundamental beliefs. Religious leaders might ostracize or otherwise insist on clear and time-honored categories, but these rarely survive in their original forms. Similarly, people might “belong” to political parties, but over time, even as the parties try to enlarge by making their

policies fuzzier, voters can alternate their affiliations and support multiple and opposing parties. In the end, many categories survive by becoming so fluid as to be barely distinguishable from competitors, or their members develop fluidity on their own. And yet other categories are less fluid. A criminal trial might be nominally required to end with a verdict of innocence or guilt but, in reality, judges and juries convert these categories to continuities by adjusting prison sentences or other penalties. There is no shortage of examples of discontinuous rules that can be made continuous. The ability to cross boundaries may make some impenetrable lines more meaningful. Resigning from a tenured university position, like deserting from an army or signing divorce papers, is serious precisely because the decisionmaker announces that he or she regards the category as important.

As the examples offered here increase in number, it is easy to wonder whether there is any solid meaning to "discontinuity." The meaning itself seems continuous. It may be useful, therefore, to think of both terms as relative to one another. For instance, law has reason to define the category of employment. For purposes of tax law and workers compensation one is or is not an employee. We have seen that a firm and a worker can smooth the line between employee and outsider, but in the end when we observe various contracts and other arrangements, it is easy to say which of two persons who do work that is used by Google is more likely to be regarded as an employee of that company. In any event, the slope is no more slippery than that between rules and standards – a distinction with a venerable history in the thinking about law.

B. Converting from Smooth Rules to Categories

Conversion occurs in the other direction as well, though perhaps not with the same regularity. The most significant causes of conversion are a taste for certainty, control over agents, and a desire to limit information available to others. In common law systems, judges were equipped with the power to say that a claim should have been brought earlier in time in order to produce fresher evidence or avoid strategic delay by a claimant,[8] but over time legislatures introduced specificity by enacting statutes of limitation. In this case, it should be noted, continuity/discontinuity matches the standards/rules distinction. Conversion to continuity is quite common, and may be associated with modernity and complexity. It may also be that as law expands, it is easier to find conversions, though this hardly means that there is more conversion toward continuity than away from it. Thus, modernity has brought with it more licensing requirements. Licensing exams of all kinds, including

[8] *See* Donna A. Boswell, *The Parameters of Federal Common Law: The Case of Time Limitations on Federal Causes of Action*, 136 U. PENN. L. REV. 1447, 1468 (1988), (citing *UAW v. Hoosier Cardinal Corp*., 383 U.S. 696, 713 (1966) (White, J., dissenting) ("Courts have not always been reluctant to 'create' statutes of limitations…")).

state bar exams in the U.S., may not announce a passing grade, but over time applicants learn that if they get X% of the questions right, or finish in the top Y% of test-takers, they will pass. A similar reality is found with respect to drivers who exceed posted speed limits, but discover that enforcement begins at some point beyond the stated limit. Restaurants are required to be open for inspection to ensure safe preparation of food, but in practice both the inspectors and restauranteurs know that one violation of a code requirement will normally lead to a warning and an instruction to improve, while three or more violations will prompt immediate shutdown. Both sides adjust accordingly. Contract law offers sliding-scale damages in the event of a breach, but parties can contract in advance for discontinuity by agreeing to specified damages (within reason) in the event of a failure to perform. These are all examples of law's expansion through discontinuous rules, that then take on continuous qualities.

Some of these examples reflect a desire to avoid transaction costs, and this causes conversions both in and out of law. A judge might be empowered to impose sentences ranging from one to ten years for a given crime, but the judge might be found to impose sentences of one, three, or ten years, with rarely anything in between. The same is true for the assignment of fines and the suspension of licenses. This sort of inclination is much like diners in a restaurant who are free to tip the waiter any amount or any percentage of the check, where tipping is conventional, but are found to leave 5%, 15%, or 20% with rare exception. It is interesting that where tipping is unconventional, practices are more continuous, as diners leave nothing, a small percentage, or the amount of loose change they happen to carry.

Finally, it is tempting to think of income taxes as more discontinuous than required, or optimal. There could be one hundred rates, rising with income or wealth, but in practice there is often a truly flat tax, a proportional tax, or just a small number of categories with increasing rates. The example reflects the problem of defining continuity.[9] It is arguable that a proportional tax (of say 20% of income, applied to all taxpayers) is continuous because the income it taxes and the extracted amounts are continuous, though the rate itself is discontinuous. There is little to gain from this distinction, so I proceed to some discussion of demarcations in Part III, by limiting the discussion to cases where *relative* continuity is fairly clear. As we will see, once the notion of discontinuity is thought of in relative terms, it becomes apparent that parties may respond to legal rules in relatively discontinuous terms, when continuity might be more useful.

[9] Continuity is relative. "Stay as long as you like," is an offer in continuous form. "Stay until 11 or until 3, as there are trains at those two times," is more discontinuous. It is easy to state instructions that lie in between. The argument here does not depend on a precise definition.

III. DISCONTINUITY AND DEMARCATIONS

Discontinuity is often attractive where there are natural boundaries. For example, lawmakers might legislate a non-discrimination rule in employment, or a requirement of racial or gender diversity, but such rules require a clear understanding of protected groups (categories) as well as some measurement of discrimination or diversity. Often the goal is a kind of continuity, but the definitional problem is solved with widely accepted demarcations. Put differently, while the discussion in Part II emphasized how easy it might be to break through boundaries or convert discontinuities, in reality the definitional problem is overcome by conventions or by widely accepted categories to which law adheres, or that law helped create in the first place. For example drawn from corporate law, a legal system might declare that at least one-third of the directors of a corporation must be women, or it might approve a settlement providing that a company accused of discrimination must now hire six women for every four men hired in the next five years. Leaving aside the question of defining the category (women) in a world with self-described nonbinary persons – itself an example of converting law's discontinuity into continuity – it is apparent that a continuous goal is made enforceable with a discontinuous rule. Note that here too the discontinuity can sometimes be converted. Many corporations can appoint or elect women who are also directors in other corporations, so that there remain vastly more male than female directors in the corporate world. More tellingly, the 6:4 rule can be controverted by outsourcing a great deal of work to entities that are not incorporated or that are of a size unaffected by the legislation. The business world might end up more male dominated than before the legislative intervention. The observation is hardly limited to corporate boards. Employment law or anti-discrimination law might forbid mandatory retirement contracts, but firms can avoid the law by outsourcing work to other jurisdictions with different rules or, as is the case for law firms in the U.S., by doing business as partnerships that are not subject to the law because partners are not "employees." In these cases, law's attempt to have categories subject to certain treatments requires clear and well-drawn categories in the first place. Clearer categories may make for ready enforcement, but they may also make it easier to comply without accomplishing the legislative goal.

It must be apparent that I am not suggesting that discontinuity is exclusively produced by available demarcations. For instance, democracies could elect officials who would then serve longer terms in proportion to the size of their victories. This sort of practice would make every vote count and might reflect intense preferences or relative confidence in finding the right answer, but it is not deployed in any nation, law firm, university faculty, or shareholder vote as far as I know. There are good reasons for this rejection. For example, the power of the Condorcet Jury Theorem, or simply the wisdom of crowds, is lost if a marginal voter rather than a majority thinks the winner

should serve eight years rather than seven or five.[10] But the point for now is that this is an example where citizens are unable to convert a discontinuous rule to one that is continuous – even though there is no reason to think that the former, usually set in a charter of some kind, is optimal. Other examples are less striking, but they support the larger claim about convertibility. Thus, one must vote for one candidate or another in a typical election; only academic law professors and social scientists seem to favor systems where voters allocate points, and in this way are able to signal their preferences over a continuous range. And yet, even this discontinuity can be modestly converted by giving different amounts of money or personal effort to some candidates.

IV. ENCOURAGING USEFUL DISCLOSURES THROUGH SAFE HARBORS

A. Loose Instructions and Stronger Disclosures

We return now to the argument introduced in Part I – that unhelpful continuous or discontinuous rules could and should yield to more useful ways of structuring information. This idea is not limited to disclosure rules, but it is these that will be the subject of this Part, if only because the proposal suggested later in this Article is more applicable to disclosures meant to inform consumers, patients, and investors than it is to instructions.

Consider two examples of instructions and disclosures. As for instructions, imagine again that law requires that women occupy at least one-third of the seats on the board of directors of a publicly traded corporation. The directive provides more information than a pure standard that "the board must have a reasonable number of women." Compliance is easy. Shareholders and other interested parties may not know whether a given board with nine directors will have three, four, or more women, but precision is unlikely to matter to most observers. Even if the goal is expressive, a clear statement (and its enforcement) is usually more valuable than a continuously formed ambition.

In contrast, consider a disclosure by a corporation that its rate of return, in 2019, on all foreign investments was greater than 6% and is expected to be greater than 6% in the coming two years, depending on taxes, various lawsuits, government contracts, and so forth. Both disclosures may be accurate and in compliance with various legal requirements, but they are of limited use to investors, who care whether the seemingly precise first number is 6, 7, or 8 – and whether the firm's investments are riskier than before. As for the projection regarding the coming years, investors would like to know that the corporation estimates 6% with a probability of 51%, 7% with a 10%

[10] The Condorcet winner might be preferred by only a bare majority, but strongly disliked by a large minority, with intensity-based voting therefore bypassing the optimal result. *See* Levmore, *Voting Paradox*, *supra* note 6, at 995.

probability, 10% with a probability of 15%, and so forth. The corporation is likely to have these probabilities, but full disclosure is unattractive, or even dangerous. One small error will open it up to lawsuits. As is often the case, one might expect market pressures to overcome a disinclination to provide what consumers (or shareholders) want, but here the threat of massive liability for small errors can discourage disclosures that most shareholders value. It would be easy for law to remove this incentive to withhold useful and available information. Law could encourage more useful, or in this case probabilistic, disclosures without increasing the threat to corporations that they will be found to have misled investors when they actually sought to provide better information. The patient reader will soon find a suggestion about the kind of safe harbor that law might provide in order to encourage more useful disclosures.

Probabilistic disclosure of the kind just described, or simply a requirement that someone reveal available information about the likelihood of dangers, or of good and bad news, is not something that law presently offers. In the case of corporate disclosures, it may be that risk adjusted estimates are often not easily available to the firm itself. But even when such information is available (as it surely is for most medical procedures) law discourages disclosure because any errors that are later discovered will subject the firm to costly lawsuits. As if in anticipation of this Article, and the argument that protecting more detailed and discontinuous disclosures would be desirable, Senator Elizabeth Warren, in 2019, while attempting to be the Democratic candidate in the 2020 U.S. presidential elections, suggested that corporations should be required to disclose the fact that climate change might have an adverse effect on their projected earnings.[11] Admittedly, the idea was not to inform shareholders about their investments, but to raise interest in climate change and to encourage greater political support for laws aimed at this problem. If shareholders thought that unmitigated climate change would affect their investments, they might be more inclined to pay higher taxes or sacrifice short-term profits in order to enjoy a more secure future. Indeed, risk averse citizens might be effectively frightened into action with continuous information, even when more accurate information is available. Warren's idea was consistent with many disclosure requirements, as the suggested disclosures provided less information than they might have. A corporation is required to disclose knowledge of factors that might have a significant impact on the value of the firm.[12] For example, firms regularly reveal the presence of lawsuits, and usually report (accurately,

[11] Press Release, Office of Senator Elizabeth Warren, Senator Warren, Representative Casten Lead Colleagues Introducing a Bill to Require Every Public Company to Disclose Climate-Related Risks (July 10, 2019), https://www.warren.senate.gov/newsroom/press-releases/senator-warren-representative-casten-lead-colleagues-introducing-a-bill-to-require-every-public-company-to-disclose-climate-related-risks.

[12] *See, e.g.,* SEC Commodity and Securities Exchanges 17 C.F.R. § 229.103 (requiring disclosure of legal proceedings),-5 (requiring disclosure of business risk factors),-305 (requiring disclosure of market risk analysis).

let us assume) that management does not expect the litigation it describes in its annual statements to have a significant impact on projected profits. The disclosure is not unlike that found to avoid products liability or to protect against claims brought against health-care providers for failing to disclose risks. There are risks, but disclosures often do not contain much information; firms issue vague warnings when they could disclose more useful information that they can easily obtain. For instance, a firm has probably calculated the risk attached to each lawsuit it faces, in order to decide how much to spend on defense or whether to settle a case on some terms. An optimist might say that present disclosures inform motivated recipients to investigate further, but usually the point of disclosure is, or ought to be, to lower the overall cost of information acquisition by placing the burden on the better-informed party, and especially so if this is likely to avoid duplicative information gathering by other, dispersed parties.

Warren's proposal, it might be noted, aimed to serve a political goal. She did not recommend that the government be required to disclose the probability that 10,000 undocumented immigrants will commit at least a certain number of serious crimes, or that corporations disclose the likelihood that higher tax rates will cause them to build new factories abroad rather than in the United States. No corporation (or politician) has an incentive to disclose such information about taxes and foreign investment. Not only will a single disclosure likely have minimal impact on important decisions, but also there is considerable danger that if Warren were eventually elected, the Securities and Exchange Commission would seek to penalize a company that disclosed friendly, and inevitably incomplete, information about taxes and foreign investment as misleading. It is dangerous to disclose a best projection about the future, unless it is in a form specifically required by the government. Most disclosures are sensibly made as vague as possible in order to comply with the law, while avoiding ex post judgments that they were misleading or knowingly incomplete.

In almost all cases, the greater the volume and specificity of information, the more likely it is that later investigation will reveal that a false disclosure was made. If a corporation must disclose its sales numbers in each of fifty locations, it is more likely that one or more of these disclosures will be inaccurate, than if it discloses, as might be required,[13] the single fact of overall sales, or even the useless fact that "Sales cannot yet be reported with accuracy because of our generous return policy, but we are pleased to report that sales are likely to be greater than they were last year. Of course, this assessment is subject to the possibility of bad weather, new and competing products from abroad, strikes by unions within and beyond our control, and economic developments that might cause consumers to buy fewer of our products." Whether this not-so-fanciful disclosure is

[13] The instructions in § 229.301 of the Code of Federal Regulations require, for example, reporting of net sales and operating revenues in the financial data provided by a registered entity.

regarded as reflecting a continuous or discontinuous legal rule, it provides almost no useful information to shareholders. It is attractive to the corporation because it is very difficult for a shareholder (or the government) to claim later that facts were misleading or knowingly falsified. Investors might appreciate a report that specified the probability of various results, as known to a well-run corporation, but the more numerous or detailed such disclosures, the greater the chance that at least one item is incorrect or even intentionally falsified by a disgruntled employee. The irony is that in an age where big data allow better predictions and reports, corporations often reveal less useful data. These useless revelations, whether in a form that sounds continuous or discontinuous, is worse than truly continuous revelations and also inferior to available information that could satisfy a requirement of well-chosen but discontinuous information. Current disclosure rules can be cynically described as "vaguely specific." Put simply, it would be unusual to hear a corporation or even a government official saying "we recommend action x because the probability of danger y is between 15% and 40%." The corporation or government is likely to have just such information, and investors or citizens need the information in order to make cost-benefit calculations.

The relevance of the discussion in Part II, about convertibility, is plain. Regulated parties have good reason to convert a precise and discontinuous requirement into one that is more continuous but less useful. And they have reason to convert continuous requirements – such as "Disclose risks that may have a substantial impact on corporate profits" – into more discontinuous revelations that comply with the law. And as for the discussion of familiar demarcations in Part III, it is easy to see that the problem can be mitigated in the presence of such demarcations. For an example outside of corporate law, consider that the law in some jurisdictions requires sellers to state that "Products sold here include both kosher and non-kosher products," if there is reason to think that some customers will think that the name of the store or the presence of some kosher products means that all products in the establishment are kosher.[14] A regulated party can easily comply without fear of litigation because of the presence of an external demarcation. In many jurisdictions that have such laws, there are outside organizations that inspect ingredients and the preparation of food, and then certify items as kosher. The certification may be under-inclusive (as when the certifier refuses to attach the kosher label to a restaurant open on the Sabbath even though the foodstuff is technically kosher), but this is of minor importance to a regulated party that simply

[14] Massachusetts, for example, requires that any person selling both kosher and non-kosher foods refrain from posting "on his door or window or anywhere in front of his place of business [a sign] bearing the word 'Kosher,' 'Kosher for Passover' or 'pareve' in any language or any sign or mark… which might lead a reasonable person to believe that all food sold in such place is kosher" unless that person also displays a sign stating "'Non-Kosher Food Also Sold Here' in block letters." MASS. GEN. LAWS ch. 94, § 156(3)(b) (2019).

wants to avoid losing a lawsuit or being fined by the givernment. It is noteworthy that for most of these interested consumers, discontinuous information is what they seek; a product is either certified as kosher or it is not. If there is a higher level of kashruth, a different and perhaps more demanding outside organization is called upon to provide certification. In slight contrast, if medical research, or the government itself, holds that a product is safe if it contains less than x amount of a carcinogen, then the disclosing party can comply and provide all the information that a later court will need. This is so even though some consumers would benefit from more precise information because they are particularly sensitive or fearful, or because they are exposed to multiple products offering the same semi-continuous disclosure. Note that the producer is able to comply with the law by providing, or converting to, fairly continuous information, while the consumer is unable to convert to greater discontinuity.

Returning to corporate law, there are, roughly speaking, two kinds of information released about corporations that might not be out to maximize share prices or otherwise conform to the norm of shareholder primacy. First, there is self-certification. Many states now offer the corporation an opportunity to warn investors that it has a goal other than profit or share-price maximization. A corporation can self-certify, in discontinuous fashion, that it is a public benefits corporation (PBC).[15] This is a discontinuity in the sense that it is an up-or-down declaration. The idea is to warn shareholders, or perhaps to gain public and political approval, by announcing that while it is a for-profit entity, the corporation will, or is free to, operate in a manner that balances shareholders' pecuniary interests with public benefits, including the well-being of employees, the environment, and other public or stakeholder interests. Again, investors might benefit if there were some requirement that the corporation announced periodically how much profit was sacrificed in these interests, but there is no such requirement, though presumably a daring corporation could provide such information on its own – and risk being sued by conventional shareholders who discovered some false information. I know of no corporation that provides this information, perhaps for the reason emphasized here; to specify is to open one up to future lawsuits. To be sure, there may be other reasons to be vague; a more informative disclosure might reveal a trade secret, for example, and thus be privately destructive and possibly socially inefficient.

A second kind of revelation is also discontinuous, but more reliable. As in the case of kosher products, outsourcing is available. B Lab is a nonprofit organization that administers "B Corp" certification. B Lab asks for a variety of information from applicants and then either certifies or not (based on company size and environmental impact, corporate charter provisions, and many

[15] *See, e.g.*, DEL. CODE ANN. tit. 8, § 1-362 (West 2020); CAL. CORP. CODE ANN. § 5110-5120 (West 2019).

other characteristics) without providing a score.[16] It would not be surprising to find an evolution to more useful and continuous information.

I do not mean to suggest that vague disclosures are more likely to be discontinuous (as in the case of B Corps) or continuous. For example, while "This food product may contain tree nuts" is relatively continuous in the sense that the consumer is not given precise information about the probability that the product contains more than 2 grams of nuts, it is of course discontinuous in that the law commonly requires disclosure about nuts, meat products, and several other matters, and is not satisfied with a disclosure like "This product may contain small or large amounts of substances to which some consumers might be allergic, religiously, or morally opposed to ingesting." An up-or-down categorization might be described a continuous or as discontinuous, but once again the question is whether it is more or less so than obvious alternatives. The point is that the regulated party could choose to satisfy relatively discontinuous laws with less information rather than more, and could also choose to comply with a relatively continuous requirement by offering less useful information than that to which it has ready access. It is plain that the government does not require the fullest available information because this sort of requirement is hard to enforce. Private entities do not do so because specificity invites ex post criticism and liability.

B. Accounting Rules and Guidelines

Returning to the corporate context, another kind of demarcation or safety net is provided by accounting rules, and their acceptance in courts. Accounting rules often provide less information than is actually available.[17] An accountant might say that corporate disclosures were verified in compliance with generally accepted accounting standards, but this is presumably inferior to the accountant's disclosure that "We investigated the corporation's report of income and based on statistical sampling, we think it is 30% likely that the disclosure is accurate, 50% likely that income is somewhat greater than reported, but has been under-reported perhaps to avoid future lawsuits, and 20% likely to have been overstated (10% by an amount greater than $1 million)." If the corporation is later accused of misrepresentation – perhaps a seller of stock complains about under-statements, or a buyer of stock sues because of over-statements – it will normally be safe if it adhered to "generally accepted accounting principles."[18] The corporation needs to fear an accusation of intentional misrepresentation or a claim that it withheld information from its

[16] *Certification*, B LAB (Mar. 4, 2020), https://bcorporation.net/certification

[17] I am grateful to Hideki Kanda for suggesting the relationship between the central point advanced here and the limits of accounting conventions. Professor Kanda and I hope to say more about the puzzle and uses of accounting conventions and alternatives to this form of information.

[18] There are some required departures from accounting practices, but this is not the place to tear apart accounting practices or the regulations that might be inconsistent with them.

accountants. The law's reliance on accounting conventions is striking. In some cases, like the reporting of interest expenses, the accounting information is precise and readily compared to that produced by other companies and their accountants. But other information is vaguely specific. It is not surprising that a party considering the purchase of a company will investigate assets and past performance, and will rarely rely on accountants' previous reports. Better information is plainly available to the prospective acquirer, but law seems satisfied or more comfortable with the (unnatural but available) demarcations provided by accounting conventions.

Guidelines and "best practices," whether produced by law, industry groups, or observed practices, offer a final example of demarcations that are significant whether described as continuous, discontinuous, or some combination of the two, depending on the observer's perspective. A guideline is commonly thought of as a recommended practice that allows some discretion or leeway in its interpretation, implementation, or use. There is no announced penalty for ignoring a government-issued guideline, but to ignore it is to leave one open to a claim, when adherence to the guideline would have prevented a loss to a litigant. Correspondingly, following a guideline can be a useful defense. Guidelines are commonly issued in some countries (like Japan), while their cousin, best-practices, are more common in others (like the United States). Best practices tend to emanate from private parties, or are simply discerned from industry behavior or meetings, while guidelines normally refer to declarations by agencies or other governmental entities.[19] In theory, a guideline might serve as a testing ground for future lawmaking; a guideline or best practice might also be a means by which established companies try to raise the cost of entry to rivals. I am unaware of evidence that either of these is the case.

To be sure, guidelines or comparable pronouncements are not exactly examples of legal discontinuities, if only because they can be exceeded, but courts will regularly rely on them when evaluating a party's behavior. It is often a good defense to show that one abided by announced guidelines, and it is certainly a problem when a defendant failed to abide by a guideline. The same is true for announced best practices. It goes without saying that these demarcations provide less information than is available. It would be useful in many tort cases, for example, to know how often a defendant's employees were tested for drug use, and then to hear a cost-benefit analysis about more frequent testing, than it is learn that the defendant tested its employees in accord with non-

[19] The generally accepted accounting principles mentioned above are one example of "best practices" emanating from industry behavior and promulgated by non-governmental entities, specifically the Financial Accounting Standards Board (FASB). *See* FASB ACCOUNTING STANDARDS CODIFICATION, FASB (Mar. 4, 2020) https://asc.fasb.org In contrast, the Securities and Exchange Commission (SEC) regularly publishes guidelines on subjects of "general interest to the business and investment communities." *See* SEC INTERPRETIVE RELEASES, SEC (Mar. 4, 2020) l. https://www.sec.gov/rules/interp.shtml

binding guidelines announced by an agency. And yet, courts are more interested in the latter than the former. Absent strict liability, corporations have little to gain from engaging in such cost-benefit calculations in order to adjust their own testing procedures. It is safer and often less expensive to comply with best practices or available guidelines. Again, guidelines and best practices, and even accounting norms, can be lawfully ignored, but the idea here is that these are devices that provide less than optimal information.

Section IV.C. now turns to the question of how current law and practices might be improved. It must be apparent that all involved parties would be better off if accountants could certify, and even be encouraged to certify, that the information disclosed and examined, perhaps in probabilistic form, was at least as useful as what could have been disclosed by following generally accepted guidelines. The discussion that follows then generalizes this claim.

C. Improving Disclosures with Safe Harbors

We have seen that a description of current disclosure rules as "vaguely specific" is often appropriate. But if useful information is a goal of disclosure rules, then things can be improved. Existing disclosure rules are often the product of lawmakers' drive toward enforceable and politically expedient rules, however useless they may be. These disclosure rules are also attractive to regulated parties, who will favor something containing a mixture of specificity and open-endedness in order to make compliance easy, and to reduce the threat of liability. Disclosure requirements in corporate law and elsewhere, even if actually read by the intended beneficiaries,[20] provide so much less information than they might – even though the more useful information is already possessed by the regulated party. Indeed, it is plausible that one reason so few parties avail themselves of the required disclosures is that their experience is that the effort expended in reading the information provides very little in the form of useful information, for the very reasons discussed here.

But what if law promised that so long as the information disclosed was as informative as that found in minimally compliant documents or announcements, then disclosing parties would find themselves in a safe harbor, protected from future litigation and discoveries that some pieces of information were inaccurate? The market might then encourage the provision of useful information.

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[20] Studies have indicated that, regardless of context, the intended recipients of disclosure in fact rarely read disclosed material. The quantity of disclosure, its complexity, and its ubiquity all contribute to a tendency among the intended audience to ignore or discount the provided information. An interested reader might turn to Omri Ben-Shahar and Carl Schneider's excellent book, *More Than You Wanted to Know*, which addresses the issue of disclosure effectiveness in depth. OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW (2014). For a discussion of SEC filings specifically, *see* Arthur J. Radin, *Have We Created Financial Statement Disclosure Overload?*, 77 CPA J. 6 (2007).

I would prefer that my doctor tell me that an operation has a .04% chance of killing me and a 1% chance of requiring a blood transfusion, rather than being told "This procedure can lead to death or a need for a blood transfusion." Indeed, I might like to see a curve representing the likelihood of various outcomes. There is, to be sure, the danger that the information provided will be inaccurate, through negligence or other processes, but the idea is for the disclosure to be protected so long as it provides more information than that offered by the familiar vaguely specific form. In the corporate context, a corporation would be within this safe harbor if it gave probabilistic information about projected sales and costs so long as this information, even if it contained some errors, was superior to "We do not expect lawsuits against us to significantly affect our future, and the numbers offered here are reported according to accepted accounting standards."

There are, of course, some problems with this proposed rule. How are judges (or even firms seeking to comply with the law) to determine the utility of minimally compliant rules? Even if we assume that probabilistic values attached to a spectrum, as favored here, should be compared to the little information provided by guidelines or by accepted accounting standards, it will often be difficult to evaluate the usefulness of those guidelines or accepted practices. A rule that offers a safe harbor for X only if X is superior to Y is of little use if Y is of unknown value to interested parties, including judges. A corporation that provides a set of probabilities about future earnings will find it easy to show that this information is more useful than the compliant "our rate of return will likely be greater than 6%." But one that attaches probabilities to the impact of climate change might face endless litigation when investors find some mistakes in the data, and argue that what was disclosed was not more informative than "climate change is likely to have a significant impact on our investments in real estate in Florida." It is simply difficult to assess the utility of the vague, non-probabilistic disclosure, and therefore hard to say whether the probabilistic disclosure was more informative. Moreover, the vague but compliant disclosure may be of different value to a seasoned investor than to an unsophisticated individual. Fortunately, this problem is not insurmountable. Consider the example of corporate disclosures. If the safe harbor idea, as suggested here, were put into law, it is likely that third parties, such as accounting firms, would be asked to certify that the probabilistic information provided by a firm was in its professional opinion more informative than previously accepted disclosures. Note that if accounting firms are deployed to certify that a probabilistic disclosure is superior to what was previously encouraged by law, the industry will have less of an incentive to lobby against the proposed change, or experiment. There is also an alternative solution to the problem of comparing probabilistic data with the familiar vaguely specific data, and it also offers a role for accounting firms. Corporations might choose to disclose information in two forms: conventional and probabilistic declarations. Experts, or

accounting firms, would then be asked to certify that the probabilistic, more continuous, descriptions added to the picture and were not misleading.

There is also the possibility that insurance companies could be usefully incorporated into the safe harbor proposal. Firms could purchase insurance as protection against the risk that their disclosures will not satisfy the safe harbor requirements. Insurers (perhaps more successfully than accounting firms) will then have an incentive to study the firm and its disclosures in order to assess the risk of future litigation.

Finally, there is a familiar argument against the safe harbor idea: why has the market not brought this into being on its own? Put differently, and in terms of Section II.A., why has there not been an evolutionary move from discontinuity to a kind of continuity? The answer offered here is that law has been an obstacle. Potential defendants fear providing better information because to do so would increase the likelihood that there will be at least one piece of false information or error. It is safer, then, to go along with the game of useless specificity. Changes in law might be needed to encourage experimentation with more useful information.

CONCLUSION

In an era where more information is available at lower cost, and statistical techniques are sophisticated, investors and consumers should be given more useful information. They will receive this information if the provider is protected by a rule that recognizes that although more information is likely to contain more errors, it is still more useful than the vaguely specific statements that currently comply with law. Corporate (and securities) law is a good place to start experimenting with this idea for more useful disclosures.