

CONSTRAINT AND FREEDOM IN THE COMMON LAW

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1. Overview

The purpose of this paper is to advance our formal understanding of the common law, especially the nature of the reasoning involved, but also its point, or justification. As so often in discussions of the modern common law, I will concentrate on the doctrine of precedent, according to which decisions by earlier courts constrain decisions by later courts, while still allowing these later courts a degree of freedom to respond in creative ways to fresh circumstances. It is this balance between constraint and freedom that forms the primary focus of the paper. In limiting my attention to the constraining role of precedent, however, I do not mean to downplay the complementary role played by precedent cases in analogical reasoning, or to deny that, in practice, these two roles can be elaborately intertwined.

Although the coherence theories of precedential constraint associated with writers such as Ronald Dworkin, as well as the nihilistic theories associated with the American legal realists, both have a good deal of interest, I will set them aside in this paper to begin with the more familiar position that constraint in the common law is based on rules—that a court faced with a particular case either invokes a previous common law rule or articulates a new one to justify its decision, and that it is this rule that constrains the decisions of future courts.¹ This general idea, which might be referred to as the *rule model* of precedential constraint, can be developed in two ways, depending on the nature of the rules involved. Some writers feel that common law rules are best seen as defeasible, or *prima facie*, leading to the *defeasible rule model* of constraint. I have a good deal of sympathy with this view, have explored it in my own work, and agree that precedential constraint is defeasible. But there are other ways of capturing this overall pattern of defeasibility than by assuming from the outset that the underlying rules must themselves be defeasible. To illustrate, I will take as my starting point the position that common law rules are strict, or

1. The most detailed development of Dworkin's view can be found in his (1986); a useful summary of legal realism is provided by Leiter (2005).

exceptionless, just like the “if ... then ...” rules studied in introductory logic classes, where students typically learn to express these rules using the material conditional.

In fact, the idea that common law rules state exceptionless generalizations can itself be developed in two ways, depending, this time, not on the meaning of the rules themselves, but on the set of conventions within which they are thought to be embedded. Some writers argue that, once a common law rule has been introduced in an earlier case, it must then govern any later case to which it applies, unless the court in the later case wishes to *overrule* the earlier decision and has the authority to do so; this position can be described as the *serious rule model* of constraint.² Other writers favor a more flexible approach, according to which, although only certain courts, depending on their place in the judicial hierarchy, have the authority to overrule earlier decisions, all courts have the power of *distinguishing*—the power, that is, of identifying important differences between the facts present in earlier cases and those of later cases, and so modifying the rules set out earlier in order to avoid inappropriate later application. On this approach, the defeasibility of precedential constraint is captured not by assuming that the common law is based on special defeasible rules, perhaps governed by their own defeasible logic, but simply by supposing that common law rules, once introduced, are subject to later modification.

The idea that common law rules are malleable in this way is, arguably, the most prevalent position among legal theorists, and provides what I refer to as the *standard model* of precedential constraint.³ This model is often thought to offer the most accurate picture of ordinary, incremental legal development, through the gradual modification of common law rules in light of later cases. It could be illustrated by

tracing the development of an actual common law doctrine, but also, and perhaps more clearly, with an artificial example.⁴

Suppose, then, that Jack and Jo are the parents of two children—Emma, who has just turned nine, and Max, age twelve—and that they have agreed to respect each other’s decisions concerning the children, treating these decisions, in effect, as precedents. And imagine that, one night, Emma, who has completed her homework but did not finish dinner, asks Jo if she can stay up and watch TV. This is like a legal case: a situation is presented to an authority, Jo, who must make a decision and, ideally, provide a rationale for her decision. Suppose that Jo resolves the case by granting the request, stating that Emma can stay up to watch TV since she is now nine years old. This decision can be seen as introducing a household version of a common law rule—perhaps, “Children age nine or greater can stay up and watch TV”—fashioned in response to a particular set of circumstances, but applicable to future situations as well.

Now imagine that, the next day, Max, who has neither completed his homework nor finished dinner, asks Jack whether he can stay up to watch TV, but in this case Jack refuses, on the grounds that Max has not completed his homework. Max might reasonably appeal this decision with the complaint, “Ah, but given the precedent established last night, in the case of Emma, our household is now governed by a rule according to which children age nine or greater can stay up and watch TV.” According to the standard model of precedential constraint, however, Jack can defend his decision by distinguishing the two cases, arguing that the previous rule should not apply to the new case of Max, since this new case, unlike the previous case of Emma, presents the additional feature that the child in question has not completed his

2. The position has been developed with great force by Alexander (1989), and then, especially, by Alexander and Sherwin in (2001) and (2008). We will return to consider aspects of this position later in the paper.

3. Versions of this view have been developed by, for example, Eisenberg (1988), Levi (1949), Raz (1979), Schauer (1989) and (1991), and Simpson (1961), along with many others.

4. For a realistic example, see Levi’s (1949, pp. 8–27) discussion of the development, within the standard model, of the changing common law rules characterizing the notion of an “inherently dangerous” object. Other artificial examples of the sort considered here can be found in Burton (1985), and especially in Twining and Miers (2010).

homework. The overall effect of Jack's decision, according to the standard model, is that the household legal system is now changed in two ways. It contains, first of all, a new rule to justify Jack's decision in the case of Max—perhaps the rule, "Children who have not completed their homework cannot stay up and watch TV." And second, the rule previously set out by Jo in the case of Emma has now been modified in order to avoid an unwanted application in the latter case—perhaps reading, "Children age nine or greater can stay up and watch TV, unless they have failed to complete their homework."

Various proposals have been offered about how, exactly, Jack's modification of Jo's previous rule might be justified: perhaps Jack thinks that his modified rule provides a better representation than Jo's original formulation of what she had in mind to begin with, or that the new rule is the one Jo would have set out if only she had envisioned the new situation, or perhaps Jack simply feels that the overall household regulatory system is sufficiently improved by his modification of Jo's rule. Regardless of the justification, however, the fact that the standard model of precedential constraint allows Jack to modify Jo's rule leads at once to a problem concerning the very notion of constraint—for if Jack can reformulate Jo's earlier rule in order to avoid an unwanted application in a later case, it is hard to see how he can be thought of as constrained by that rule. More generally, if the constraints imposed by the decisions of earlier courts are supposed to be carried by rules, but later courts are free to modify those rules, then it is hard to see how the rules impose any real constraints at all: how can courts be constrained by rules that they are free to modify at will?

As it happens, the literature on the standard model contains a response to this problem—first set out explicitly by Joseph Raz, although, as Raz notes, it owes much to the previous work of A. W. B. Simpson.⁵

5. See Raz (1979, pp. 180–209) and Simpson (1961). Simpson's own approach was developed in the course of a dialogue with Goodhart and Montrose, going back to Goodhart's (1930), but vigorously pursued in the 1950's. See, in order: Montrose (1956), Montrose (1957a), Simpson (1957), Montrose (1957b), Simpson (1958), Goodhart (1959), and Simpson (1959).

The central idea is that, although later courts are indeed free to modify the rules set out by earlier courts, they are not free to modify these rules entirely at will. Any later modification of an earlier rule must satisfy two conditions: first, the modification can consist only in the addition of further restrictions, narrowing the original rule; and second, the modified rule must continue to support the original outcome in the case in which it was introduced, as well as in any further cases in which this rule was appealed to as a justification.

The force of these *Raz/Simpson conditions* on rule modification can be illustrated by returning to our example, where Jo's initial rule, "Children age nine or greater can stay up and watch TV," introduced in the case of Emma, was later modified by Jack to read "Children age nine or greater can stay up and watch TV, unless they have failed to complete their homework," in order to block applicability to Max. Here, Jack's modification of the rule satisfies both of the two Raz/Simpson conditions: it simply narrows Jo's original rule with a further requirement for applicability, and it yields the same result as the original in the case in which the original was introduced, that Emma can watch TV. Suppose, by contrast, that Jack had modified Jo's original rule to read, "Children who are female can stay up and watch TV." Although this replacement would succeed in blocking applicability to Max, it violates the first of the two Raz/Simpson conditions: the new rule is not simply a narrowing of Jo's original rule, but instead applies in some situations where the original rule would not. Or suppose Jack had modified the original rule to read, "Children age nine or greater can stay up and watch TV, unless they have not finished their dinner." The modification would again block applicability to Max, since he did not finish his dinner, but in this case it violates the second of the two conditions: it fails to justify the original outcome in the original case of Emma, since she did not finish her dinner either.

If we understand the standard model as including the Raz/Simpson conditions on rule modification, then, we are able to fashion a response to our original problem concerning constraint: even though later courts are free to modify the rules set out by earlier courts,

they are still constrained by these rules, since they can modify them only in certain ways, those satisfying the conditions. This response to our original problem, however, leads at once to another. Presumably, even if some modification of an earlier rule satisfies the Raz/Simpson conditions, a later court would, all the same, not choose to modify the rule in that way unless the court believed that it could actually improve the rule by doing so. But if a later court believes that it can improve an earlier rule through modification, why should it limit itself to modifications that satisfy the Raz/Simpson conditions? Why should the court not be free to modify the rule in any way at all that leads to an improvement, or if it must be subject to conditions, then why these conditions and not others—in short: what is the justification for the Raz/Simpson conditions on rule modification?

In recent work, motivated in part by research from the field of artificial intelligence and law, and especially by an earlier proposal due to Grant Lamond, I developed a model according to which precedential constraint is not a matter of rules at all, but of reasons.⁶ On this view—which I refer to as the *reason model*—what matters about a precedent case is the previous court’s assessment of the balance of reasons presented by that case; later courts are then constrained, not to follow some rule set out by the previous court, or even to modify this rule only in certain ways, but simply to reach decisions that are consistent with the earlier court’s assessment of the balance of reasons. The development of the common law is to be pictured, then, not as the elaboration over time of an increasingly complex system of rules, but instead as the gradual construction of an ordering relation on reasons, reflecting importance, or priority.

What I show in the current paper is that, although this reason model of precedential constraint was developed as an alternative to the standard model, it turns out that the reason model can be used, also,

6. See Horty (2011) for the initial presentation of this model, and then Horty and Bench-Capon (2012) for a development of the model within the context of related research from artificial intelligence and law; see Lamond (2005) for his earlier proposal.

to support the standard model, by providing a kind of semantic justification for the Raz/Simpson conditions on rule modification; indeed, the standard model and the reason model are, in a straightforward sense, equivalent. This equivalence between the two models of precedential constraint, though somewhat surprising, is also reassuring—in the way that it is always reassuring when two different analyses of a concept, starting from different initial points and relying on different ideas, agree in outcome. Nevertheless, and in spite of the equivalence between these two models, I will argue that the reason model of precedential constraint provides a better perspective than the standard model, for two reasons: first, the reason model supports a satisfying picture of decision making in the common law, and second, the reason model provides the resources for responding to some important criticisms of the standard model.

The paper is organized as follows: I begin, in the next section, by setting out the basic representational framework at work throughout the paper. Section 3 then presents a precise formulation of the standard model of precedential constraint—not just the Raz/Simpson conditions on rule modification, but the resulting constraints on decisions by later courts. Section 4 reviews the reason model developed in my earlier work, and then establishes the equivalence between these two models of precedential constraint. Section 5 describes the account of common law reasoning supported by the reason model, and Section 6 shows how the reason model can be used in responding to criticisms of the standard model.

2. Basic concepts

I will suppose that the situation presented to the court in a legal case can usefully be represented as a set of *factors*, where a factor is a legally significant fact or pattern of facts. The concept can be illustrated by returning to our domestic example. Here, the legal, or quasi-legal, issue at hand is whether a child can stay up and watch TV, and the factors involved might reasonably include those already considered—whether the child has reached the age of nine, whether dinner was eaten, home-

work completed—as well as countless others, such as: whether chores were done on time, whether good behavior was exhibited throughout the day, or whether the child has recently been subjected to any indignities that might merit special compensation, such as a nasty trip to the dentist.

But the factor-based representation of legal situations is not restricted only to everyday examples of this kind. In fact, this style of representation has been used to analyze case-based reasoning in a number of complex legal domains within the field of artificial intelligence and law, where it originated.⁷ In the domain of trade-secrets law, for example, where the factor-based analysis has been developed most extensively, a case will typically concern the issue of whether the defendant has gained an unfair competitive advantage over the plaintiff through the misappropriation of a trade secret; and here the factors involved might turn on, say, questions concerning whether the plaintiff took measures to protect the trade secret, whether a confidential relationship existed between the plaintiff and the defendant, whether the information acquired was reverse-engineerable or in some other way publicly available, and the extent to which this information did, in fact, lead to a real competitive advantage for the defendant.⁸ Of course, the mere ability to understand a case in terms of the factors involved itself

7. The analysis of legal cases in terms of factors, initially taken only as points along legally significant dimensions, was first introduced by Rissland and Ashley (1987); see Ashley (1990) for a canonical treatment, Rissland (1990) for an overview of research in artificial intelligence and law that places this work in a broader perspective, and both Bench-Capon and Rissland (2001) and Rissland and Ashley (2002) for later reflections on factors and dimensions. A useful criticism of the factor-based approach, along with further perspective, can be found in McCarty (1997).

8. Alevan (1997) has analyzed 147 cases from trade-secrets law in terms of a factor hierarchy that includes five high-level issues, eleven intermediate-level concerns, and twenty-six base-level factors. The resulting knowledge base is used in an intelligent tutoring system for teaching elementary skills in legal argumentation, which has achieved results comparable to traditional methods of instruction in controlled studies; see Alevan and Ashley (1997). The formal treatment sketched in the present paper abstracts considerably from this detailed representational work, and in particular, the idea that legal factors are organized into a hierarchy is missing entirely.

requires a significant degree of legal expertise, which is presupposed here. The theory thus begins with cases to which we must imagine that this expertise has already been applied, so that they can be represented directly in terms of the factors they present.

Many factors can naturally be taken to have polarities, favoring one side or another. In our domestic example, being older than nine or exhibiting good behavior throughout the day strengthens the child's claim, as plaintiff, that he or she should be allowed to stay up and watch TV; failing to finish dinner or to complete homework strengthens the parents' claim, as defendants, that the child should go to bed immediately. In the domain of trade-secrets law, the presence of security measures likewise favors the plaintiff, since it strengthens the claim that the information secured was a valuable trade secret; reverse-engineerability favors the defendant, since it suggests that the product information might have been acquired through legitimate means. The present paper is based on the simplifying assumption, not just that many, or even most, factors have polarities, but that all factors are like this, favoring one particular side. In addition, we rely on the further assumption, also a simplification, that the reasoning under consideration involves only a single step, proceeding directly from the factors present in a case to a decision—in favor of the plaintiff or the defendant—rather than moving through a series of intermediate legal concepts.⁹

Formally, then, we begin by postulating a set F of legal factors. A *fact situation* X , of the sort presented in a legal case, can then be defined as some particular subset of these factors: $X \subseteq F$. We will let $F^\pi = \{f_1^\pi, \dots, f_n^\pi\}$ represent the set of factors favoring the plaintiff and $F^\delta = \{f_1^\delta, \dots, f_m^\delta\}$ the set of factors favoring the defendant. Given our assumption that each factor favors one side or the other, the entire set of legal factors will be exhausted by those favoring the plaintiff together with those favoring the defendant, so that $F = F^\pi \cup F^\delta$.

9. These simplifications are discussed further in the final section of Horty (2011).

A *precedent case* will be represented as a fact situation together with an outcome and a rule through which that outcome is reached. Such a case, then, can be defined as a triple of the form $c = \langle X, r, s \rangle$, where X is a fact situation containing the legal factors presented by the case, r is the rule of the case, and s is its outcome.¹⁰ We define three functions—*Factors*, *Rule*, and *Outcome*—to map cases into their component parts, so that, in the case c above, for example, we would have $Factors(c) = X$, $Rule(c) = r$, and $Outcome(c) = s$.

Given our assumption that reasoning proceeds in a single step, we can suppose that the *outcome* s of a case is always either a decision in favor of the plaintiff or a decision in favor of the defendant, with these two outcomes represented as π or δ respectively; and where s is a particular outcome, a decision for some side, we suppose that \bar{s} represents a decision for the opposite side, so that $\bar{\pi} = \delta$ and $\bar{\delta} = \pi$. Where X is a fact situation, we let X^s represent the factors from X that support the side s ; that is, $X^\pi = X \cap F^\pi$ is the set of factors from X favoring the plaintiff, while $X^\delta = X \cap F^\delta$ is the set of factors from X favoring the defendant.

Rules will be defined in terms of reasons, where a *reason for a side* is some set of factors favoring that side. A *reason* can then be defined as a set of factors favoring one side or another. To illustrate: $\{f_1^\pi, f_2^\pi\}$ is a reason favoring the plaintiff, and so a reason, while $\{f_1^\delta\}$ is a reason favoring the defendant, and likewise a reason; but the set $\{f_1^\pi, f_1^\delta\}$ is not a reason, since the factors it contains do not uniformly favor one side or another. Reasons of this kind are to be interpreted conjunctively, so that, for example, the reason $\{f_1^\pi, f_2^\pi\}$ can be identified with the proposition that both the factors f_1^π and f_2^π are present.

10. We suppose, as an additional simplification, that the rule underlying a court's decision is plain, ignoring the extensive literature on methods for determining the rule, or *ratio decidendi*, of a case; we suppose also that a case always contains a single rule, ignoring situations in which a judge might offer several rules for a decision, or in which a court reaches a decision by majority, with different judges offering different rules, or in which a court might simply render a decision in a case without setting out any general rule at all.

Where R is a reason, a statement of the form $X \models R$ indicates that the R *holds* in the fact situation X , or, using more technical language, that the fact situation *satisfies* this reason; the idea can be defined by stipulating that

$$X \models R \text{ if and only if } R \subseteq X,$$

and then extended in the usual way to statements ϕ and ψ formed by closing the sets of factors representing reasons under conjunction and negation:

$$\begin{aligned} X \models \neg\phi & \text{ if and only if it fails that } X \models \phi, \\ X \models \phi \wedge \psi & \text{ if and only if } X \models \phi \text{ and } X \models \psi. \end{aligned}$$

To illustrate, consider the fact situation $X_1 = \{f_1^\pi, f_2^\pi, f_3^\pi, f_1^\delta, f_2^\delta, f_3^\delta, f_4^\delta\}$. It is easy to see that the reason $\{f_1^\pi, f_2^\pi\}$ holds in this fact situation, since $\{f_1^\pi, f_2^\pi\}$ is a subset of X_1 , but that the reason $\{f_5^\delta\}$ fails to hold, since it is not a subset; as a result, we have $X_1 \models \{f_1^\pi, f_2^\pi\}$ and $X_1 \models \neg\{f_5^\delta\}$, so that $X_1 \models \{f_1^\pi, f_2^\pi\} \wedge \neg\{f_5^\delta\}$.

Based on this notion of a reason, a rule can now be defined as a pair whose conclusion is an outcome, a decision for one side or the other, and whose premise is a conjunction containing a reason favoring that side together with statements indicating that certain reasons favoring the opposite side are not present. More exactly, where R^s is a reason for the side s and $R_1^{\bar{s}}, \dots, R_i^{\bar{s}}$ are zero or more reasons for the opposite side, a *rule for the side* s has the form

$$R^s \wedge \neg R_1^{\bar{s}} \wedge \dots \wedge \neg R_i^{\bar{s}} \rightarrow s,$$

and a *rule* is simply a rule for one side or the other. Our rules, then, are required to take a limited syntactic form, but one that is, also, a very natural form. The idea is that, when the reason R^s favoring s holds in

some situation, and none of the reasons R_1^s, \dots, R_i^s favoring the opposite side hold, then r requires a decision for the side s .

When r is a rule of the form displayed above, we define functions *Premise*, *Premise^s*, and *Conclusion*, picking out its premise, the positive part of its premise, and its conclusion, as follows:

$$\begin{aligned} \text{Premise}(r) &= R^s \wedge \neg R_1^s \wedge \dots \wedge \neg R_i^s, \\ \text{Premise}^s(r) &= R^s, \\ \text{Conclusion}(r) &= s. \end{aligned}$$

We can then say that r applies in a fact situation X just in case $X \models \text{Premise}(r)$. And when a decision for the side s is justified by the rule r , we will refer to $\text{Premise}^s(r) = R^s$ as the *reason for the decision*—the positive consideration favoring that outcome.¹¹

Let us return, now, to the concept of a precedent case $c = \langle X, r, s \rangle$, containing a fact situation X along with a rule r leading to the outcome s . In order for this concept to make sense, we impose two coherence constraints. The first is that the rule contained in the case must actually apply to the facts of the case, or that $X \models \text{Premise}(r)$. The second is that the conclusion of the precedent rule must match the outcome of the case itself, or that $\text{Conclusion}(r) = \text{Outcome}(c)$.

These various concepts and constraints can be illustrated through the case $c_1 = \langle X_1, r_1, s_1 \rangle$, where $X_1 = \{f_1^\pi, f_2^\pi, f_3^\pi, f_1^\delta, f_2^\delta, f_3^\delta, f_4^\delta\}$ is the underlying fact situation, with three factors favoring the plaintiff and four favoring the defendant, where $r_1 = \{f_1^\pi, f_2^\pi\} \wedge \neg\{f_5^\delta\} \rightarrow \pi$ is the rule of the case, and where $s_1 = \pi$ is its outcome, a decision for the plaintiff. Since we have both $X_1 \models \text{Premise}(r_1)$ and $\text{Conclusion}(r_1) = \text{Outcome}(c_1)$, it is clear that the case satisfies our two

coherence constraints: the rule of the case applies to the fact situation, and the conclusion of the rule matches the outcome of the case. This particular case, then, is one in which the court decided for the plaintiff by applying or introducing a rule according to which the presence of the factors f_1^π and f_2^π , together with the absence of the factor f_5^δ , leads to decision for the plaintiff. The reason for the decision is $\text{Premise}^s(r_1)$, or $\{f_1^\pi, f_2^\pi\}$.

With this notion of a case in hand, we can define a *case base* simply as a set Γ of cases—a set of fact situations presented to various courts, together with their outcomes and the rules justifying these outcomes. It is a case base of this sort that will be taken to represent the common law in some area, and to constrain the decisions of future courts.

3. The standard model

Our first task is to define the standard model of precedential constraint, formulated in terms of rules that can be modified in accord with the Raz/Simpson conditions. We proceed by tracing two simple examples of legal development in accord with the standard model, generalizing from these examples, and then characterizing the standard model in terms of this generalization.

To begin with, then, suppose that the background case base is $\Gamma_1 = \{c_2\}$, containing only the single precedent case $c_2 = \langle X_2, r_2, s_2 \rangle$, where $X_2 = \{f_1^\pi, f_1^\delta\}$, where $r_2 = \{f_1^\pi\} \rightarrow \pi$, and where $s_2 = \pi$; this precedent represents a situation in which a prior court, confronted with the conflicting factors f_1^π and f_1^δ , decided for the plaintiff on the basis of f_1^π . Now imagine that, against the background of this case base, a later court is confronted with the new fact situation $X_3 = \{f_1^\pi, f_2^\delta\}$, and takes the presence of the new factor f_2^δ as sufficient to justify a decision for the defendant. Of course, the previous rule r_2 applies to the new fact situation, apparently requiring a decision for the plaintiff. But according to the standard model, the court can decide for the defendant all the same by distinguishing the new fact situation from that of the case in which r_2 was introduced—pointing out that the new

11. Some writers argue that the entire premise of the rule r should be taken as a reason for the decision—that is, $\text{Premise}(r) = R^s \wedge \neg R_1^s \wedge \dots \wedge \neg R_i^s$, the positive consideration favoring the outcome together with statements indicating that various considerations favoring the other side are not present. This issue is discussed at length in Dancy (2004, pp. 38–52), and also in Horty (2012, pp. 53–59, 141–146).

situation, unlike that of the earlier case, contains the factor f_2^δ , and so declining to apply the earlier rule on that basis.

The result of this decision, then, is that the original case base is changed in two ways. First, by deciding the new situation for the defendant on the basis of f_2^δ , the court supplements this case base with the new case $c_3 = \langle X_3, r_3, s_3 \rangle$, where X_3 is as above, where $r_3 = \{f_2^\delta\} \rightarrow \delta$, and where $s_3 = \delta$. And second, by declining to apply the earlier r_2 to the new situation due to the presence of f_2^δ , the court, in effect, modifies this earlier rule to accommodate its decision, so that the earlier rule now carries the force of $r_2' = \{f_1^\pi\} \wedge \neg\{f_2^\delta\} \rightarrow \pi$. Note that the modification conforms to the Raz/Simpson conditions, both narrowing the earlier rule, and narrowing it in such a way that it continues to support the earlier conclusion. The new case base is thus $\Gamma_1' = \{c_2', c_3\}$, with $c_2' = \langle X_2', r_2', s_2' \rangle$ as a modification of the previous c_2 , where $X_2' = X_2$, where r_2' is as above, and where $s_2' = s_2$; and with c_3 as above.

The process could continue, of course. Suppose that, against the background of the modified case base $\Gamma_1' = \{c_2', c_3\}$, a court is confronted with the further fact situation $X_4 = \{f_1^\pi, f_3^\delta\}$, and again takes the new factor f_3^δ as sufficient to justify a decision for the defendant, in spite of the fact that even the modified rule r_2' requires a decision for the plaintiff. Once again, this decision changes the current case base in two ways: first, supplementing this case base with a new case representing the current decision, and second, further modifying the previous rule to accommodate this new decision as well. The resulting case base is therefore $\Gamma_1'' = \{c_2'', c_3, c_4\}$, with $c_2'' = \langle X_2'', r_2'', s_2'' \rangle$ as a modification of the previous c_2' , where $X_2'' = X_2'$, where $r_2'' = \{f_1^\pi\} \wedge \neg\{f_2^\delta\} \wedge \neg\{f_3^\delta\} \rightarrow \pi$, and where $s_2'' = s_2'$; with c_3 as above; and with $c_4 = \langle X_4, r_4, s_4 \rangle$ representing the current decision, where X_4 is as above, where $r_4 = \{f_3^\delta\} \rightarrow \delta$, and where $s_4 = \delta$.

As our second example, suppose that the background case base is $\Gamma_2 = \{c_2, c_5\}$, with c_2 as above, and now with $c_5 = \langle X_5, r_5, s_5 \rangle$, where $X_5 = \{f_1^\pi, f_2^\delta\}$, where $r_5 = \{f_1^\pi\} \rightarrow \pi$, and where $s_5 = \pi$. This case base represents a pair of prior decisions for the plaintiff on

the basis of f_1^π , in spite of the conflicting factor f_1^δ in one case, and f_2^δ in the other. Now imagine that, against this background, a later court confronts the new situation $X_6 = \{f_1^\pi, f_1^\delta, f_2^\delta\}$, and decides that, although earlier cases favored f_1^π over the conflicting f_1^δ and f_2^δ presented separately, the combination of f_1^δ and f_2^δ together outweighs f_1^π , and so justifies a decision for the defendant. Again, this decision supplements the existing case base with a new case $c_6 = \langle X_6, r_6, s_6 \rangle$, where X_6 is as above, where $r_6 = \{f_1^\delta, f_2^\delta\} \rightarrow \delta$, and where $s_6 = \delta$. But here, the rules from both of the existing cases, c_2 and c_5 , must be modified to block application to situations in which f_1^δ and f_2^δ appear together, though continuing to allow application to situations in which those factors appear separately; the rules will thus carry the force of $r_2' = r_5' = \{f_1^\pi\} \wedge \neg\{f_1^\delta, f_2^\delta\} \rightarrow \pi$. The case base resulting from this decision is $\Gamma_2' = \{c_2', c_5', c_6\}$, with $c_2' = \langle X_2', r_2', s_2' \rangle$, where $X_2' = X_2$, where r_2' is as above, and where $s_2' = s_2$; with $c_5' = \langle X_5', r_5', s_5' \rangle$, where $X_5' = X_5$, where r_5' is as above, and where $s_5' = s_5$; and with c_6 as above.

Each of these examples presents a scenario in which fact situations are confronted, decisions are reached, new rules are formulated to justify these decisions, and existing rules are modified, in accord with the Raz/Simpson conditions, to accommodate the new decisions. As the examples are described here, fact situations are confronted and decisions reached in some particular sequence—which presents, of course, the most realistic picture of an evolving legal system. It is interesting to note, however, that, as long as all decisions from a case base can be accommodated, with rules modified appropriately, then the order in which these decisions are reached is irrelevant. Indeed, the decisions need not be reached in any sequence at all: if a set of decisions is capable of being accommodated through appropriate rule modifications, then all the rules can be modified at once, through a process that I characterize as case base *refinement*.

Definition 1 (Refinement of a case base) Where Γ is a case base, its refinement—written, Γ^+ —is the set that results from carrying out the

following procedure. For each case $c = \langle X, r, s \rangle$ belonging to Γ :

1. Let

$$\Gamma_c = \{c' \in \Gamma : c' = \langle Y, r', \bar{s} \rangle \ \& \ Y \models \text{Premise}^s(r)\}$$

2. For each case $c' = \langle Y, r', \bar{s} \rangle$ from Γ_c , let

$$d_{c,c'} = \neg \text{Premise}^{\bar{s}}(r')$$

3. Define

$$D_c = \bigwedge_{c' \in \Gamma_c} d_{c,c'}$$

4. Replace the case $c = \langle X, r, s \rangle$ from Γ with $c'' = \langle X, r'', s \rangle$, where r'' is the new rule

$$\text{Premise}^s(r) \wedge D_c \rightarrow s$$

This transformation of a case base Γ into its refinement Γ^+ can be described informally as follows: First, for each case c belonging to Γ , decided for some side and for some particular reason, collect together into Γ_c all of the cases from Γ in which that reason holds, but which were decided for the other side. Second, for each such case c' from Γ_c , let $d_{c,c'}$ —the consideration that distinguishes c from c' —be the negation of the reason for which c' was decided. Third, conjoin these various distinguishing considerations together into a single statement D_c , which then distinguishes c from all cases in Γ_c at once. And fourth, replace the original rule r from c with the new rule r'' whose premise is formed by conjoining $\text{Premise}^s(r)$, the reason for the original decision, with the distinguishing statement D_c —resulting in a rule that will no

longer apply to any other case in which the reason for the original decision holds, but which was decided for the opposite side.

In the examples considered so far, the case bases resulting from our suggested modifications are identical with those that would have resulted from deciding the same fact situations for the same reasons, including the new decisions in the case base along with the cases already decided, and then refining the result. To illustrate with the first of our examples, we can see that $\Gamma_1' = (\Gamma_1 \cup \{c_3\})^+$, and then that $\Gamma_1'' = (\Gamma_1' \cup \{c_4\})^+$ —or, considering the cases simultaneously, that $\Gamma_1'' = (\Gamma_1 \cup \{c_3, c_4\})^+$.

In these examples, then, where a decision can be accommodated against the background of a case base through an appropriate modification of rules, the same outcome can be achieved, with rules modified in the same way, simply by supplementing the background case base with that decision, and then refining the result. My suggestion is that the pattern found in these particular examples holds in general, and can be taken as definitional: the development of a case base in accord with the standard model can be achieved simply by supplementing the existing case base with new decisions, and then accommodating these new decisions through refinement of the supplemented case base.

But what if some decision cannot be accommodated against the background of a particular case base—what does refinement lead to then? The answer is that, when a case base is supplemented with a decision that cannot be accommodated through appropriate rule modification, the process of refinement will then alter certain cases from the supplemented case base in such a way that the rules they contain will no longer apply to their corresponding fact situations—so that, strictly speaking, the result of refinement is no longer a case base at all.¹² The linkage between accommodation and refinement therefore works in both directions, and can provide us with a formal explication of the

12. Recall from the previous section that a case base is defined as a set of cases, and that a case is subject to the coherence condition that the rule of a case must apply to its fact situation.

concept, according to which: a decision can be *accommodated* against the background of a case base, with rules modified appropriately, just in case the result of supplementing the case base with that decision can itself be refined into a case base.

We are now in a position to define the standard model of precedential constraint. The intuitive idea is that a court is constrained to reach a decision that can be accommodated within the context of a background case base through an appropriate modification of rules—or, given our formal explication of this concept, a decision that can be combined with the background case base to yield a result whose refinement is itself a case base.

Definition 2 (Precedential constraint: the standard model) Let Γ be a case base and X a new fact situation confronting the court. Then the standard model of precedential constraint requires the court to base its decision on some rule r leading to an outcome s such that $(\Gamma \cup \{ \langle X, r, s \rangle \})^+$ is a case base.

This definition can be illustrated by taking as background the case base $\Gamma_3 = \{c_7\}$, containing the single case $c_7 = \langle X_7, r_7, s_7 \rangle$, where $X_7 = \{f_1^\pi, f_2^\pi, f_1^\delta, f_2^\delta\}$, where $r_7 = \{f_1^\pi\} \rightarrow \pi$, and where $s_7 = \pi$. Now suppose the court confronts the new situation $X_8 = \{f_1^\pi, f_1^\delta, f_2^\delta, f_3^\delta\}$, and considers finding for the defendant on the basis of f_1^δ and f_2^δ , leading to the decision $c_8 = \langle X_8, r_8, s_8 \rangle$, where X_8 is as above, where $r_8 = \{f_1^\delta, f_2^\delta\} \rightarrow \delta$, and where $s_8 = \delta$. According to our proposed definition, this decision would be ruled out by the standard model of precedential constraint, since the result of supplementing the background case base Γ_3 with the new decision c_8 —that is $\Gamma_3 \cup \{c_8\}$ —cannot itself be refined into a case base. Instead, the refinement of this supplemented case base is the set $(\Gamma_3 \cup \{c_8\})^+ = \{c_7', c_8'\}$, with $c_7' = \langle X_7', r_7', s_7' \rangle$, where $X_7' = X_7$, where $r_7' = \{f_1^\pi\} \wedge \neg\{f_1^\delta, f_2^\delta\} \rightarrow \pi$, and where $s_7' = \pi$; and with $c_8' = \langle X_8', r_8', s_8' \rangle$, where $X_8' = X_8$, where $r_8' = \{f_1^\delta, f_2^\delta\} \wedge \neg\{f_1^\pi\} \rightarrow \delta$, and where $s_8' = \delta$. And this set is not a case base, in our technical sense, since c_7' and c_8' are not cases: the

rule r_7' fails to apply to the fact situation X_7' , and the rule r_8' fails to apply to the fact situation X_8' .

4. A comparison to the reason model

Having offered a formal reconstruction of the standard model of precedential constraint, in terms of rules that can be modified, I now want to review my own previous proposal, the reason model, developed in terms of an ordering relation on reasons.

In order to motivate this proposal, let us return to the case $c_7 = \langle X_7, r_7, s_7 \rangle$ —where again $X_7 = \{f_1^\pi, f_2^\pi, f_1^\delta, f_2^\delta\}$, where $r_7 = \{f_1^\pi\} \rightarrow \pi$, and where $s_7 = \pi$ —and ask what information is actually carried by this case; what is the court telling us with its decision? Well, two things, at least. First of all, by appealing to the rule r_7 as justification, the court is telling us that the reason for its decision—that is, $Premise^\pi(r_7)$, or $\{f_1^\pi\}$ —is sufficient to justify a decision in favor of the plaintiff. But second, with its decision for the plaintiff, the court is also telling us that this reason must be stronger than the strongest reason presented by the case in favor of the defendant.

To put this precisely, let us first stipulate that, if X and Y are reasons favoring the same side, then Y is *at least as strong* a reason as X for that side whenever Y contains all the factors contained in X —that is, whenever $X \subseteq Y$. Returning to our example, then, where $X_7 = \{f_1^\pi, f_2^\pi, f_1^\delta, f_2^\delta\}$, it is clear that the strongest reason present for the defendant is $X_7^\delta = \{f_1^\delta, f_2^\delta\}$, containing all those factors from the original fact situation that favor the defendant. Since the c_7 court has decided for the plaintiff on the grounds of the reason $Premise^\pi(r_7)$, even in the face of the conflicting X_7^δ , it seems to follow as a consequence of the court's decision that the reason $Premise^\pi(r_7)$ for the plaintiff should be assigned a higher priority than the reason X_7^δ for the defendant—that is, that $\{f_1^\pi\}$ should be assigned a higher priority than $\{f_1^\delta, f_2^\delta\}$. If we let $<_{c_7}$ represent the priority relation on reasons that is derived from the particular case c_7 , then this consequence of the court's decision can be expressed through the statement that $X_7^\delta <_{c_7} Premise^\pi(r_7)$, or equivalently, that $\{f_1^\delta, f_2^\delta\} <_{c_7} \{f_1^\pi\}$.

As far as the priority ordering goes, then, the earlier court is telling us at least that $X_7^\delta <_{c_7} \text{Premise}^\pi(r_7)$, but is it telling us anything else? Perhaps not explicitly, but implicitly, yes. For if the reason $\text{Premise}^\pi(r_7)$ for the plaintiff is preferred to the reason X_7^δ for the defendant, then surely any reason for the plaintiff that is at least as strong as $\text{Premise}^\pi(r_7)$ must likewise be preferred to any reason for the defendant that is at least as weak as X_7^δ . As we have seen, a reason Z for the plaintiff is at least as strong as $\text{Premise}^\pi(r_7)$ if it contains all the factors contained in $\text{Premise}^\pi(r_7)$ —that is, if $\text{Premise}^\pi(r_7) \subseteq Z$. And we can conclude, likewise, that a reason W for the defendant is at least as weak as X_7^δ if it contains no more factors than X_7^δ itself—that is, if $W \subseteq X_7^\delta$. It therefore follows from the earlier court's decision in c_7 not only that $X_7^\delta <_{c_7} \text{Premise}^\pi(r_7)$, but that $W <_{c_7} Z$ whenever W is at least as weak a reason for the defendant as X_7^δ and Z is at least as strong a reason for the plaintiff as $\text{Premise}^\pi(r_7)$ —whenever, that is, $W \subseteq X_7^\delta$ and $\text{Premise}^\pi(r_7) \subseteq Z$. To illustrate: from the court's explicit decision that $\{f_1^\delta, f_2^\delta\} <_{c_7} \{f_1^\pi\}$, we can conclude also that $\{f_1^\delta\} <_{c_7} \{f_1^\pi, f_3^\pi\}$, for example.

This line of argument leads to the following definition of the preference relation among reasons that can be derived from a single case.

Definition 3 (Priority relation derived from a case) Let $c = \langle X, r, s \rangle$ be a case, and suppose W and Z are reasons. Then the relation $<_c$ representing the priority on reasons derived from the case c is defined by stipulating that $W <_c Z$ if and only if $W \subseteq X^s$ and $\text{Premise}^s(r) \subseteq Z$.

Once we have defined the priority relation derived from a single case, we can introduce a priority relation $<_\Gamma$ derived from an entire case base Γ in the natural way, by stipulating that one reason has a higher priority than another according to the entire case base whenever that priority relation is supported by some particular case from the case base.

Definition 4 (Priority relation derived from a case base) Let Γ be a case base, and suppose W and Z are reasons. Then the relation $<_\Gamma$ rep-

resenting the priority relation on reasons derived from the case base Γ is defined by stipulating that $W <_\Gamma Z$ if and only if $W <_c Z$ for some case c from Γ .

And we can then define a case base as reason inconsistent if it provides conflicting information about the priority among reasons—telling us, for some pair of reasons, that each has a higher priority than the other—and reason consistent otherwise.

Definition 5 (Reason consistent case bases) Let Γ be a case base with $<_\Gamma$ its derived priority relation. Then Γ is reason inconsistent if and only if there are reasons X and Y such that $X <_\Gamma Y$ and $Y <_\Gamma X$, and Γ is reason consistent if and only if it is not reason inconsistent.

Given this notion of reason consistency, we can now turn to the concept of precedential constraint itself, according to the reason model. The intuition is simply that, in deciding a case, a constrained court is required to preserve the consistency of the background case base. Suppose, more exactly, that a court constrained by a background case base Γ is confronted with a new fact situation X . Then the court is required to reach a decision on X that is itself consistent with Γ —that is, a decision that does not introduce inconsistency.

Definition 6 (Precedential constraint: the reason model) Let Γ be a case base and X a new fact situation confronting the court. Then the reason model of precedential constraint requires the court to base its decision on some rule r leading to an outcome s such that the new case base $\Gamma \cup \{\langle X, r, s \rangle\}$ is reason consistent.

This idea can be illustrated by assuming as background the previous case base $\Gamma_3 = \{c_7\}$, containing only the previous case c_7 , supposing once again that, against this background, the court confronts the fresh situation $X_8 = \{f_1^\pi, f_1^\delta, f_2^\delta, f_3^\delta\}$ and considers finding for the defendant on the basis of f_1^δ and f_2^δ , leading to the decision $c_8 = \langle X_8, r_8, s_8 \rangle$, where X_8 is as above, where $r_8 = \{f_1^\delta, f_2^\delta\} \rightarrow \delta$, and where $s_8 = \delta$. We saw in the previous section that such a decision

would fail to satisfy the rule constraint, and we can see now that it fails to satisfy the reason constraint as well. Why? Because the new case c_8 would support the priority relation $\{f_1^\pi\} <_{c_8} \{f_1^\delta, f_2^\delta\}$, telling us that the reason $\{f_1^\delta, f_2^\delta\}$ for the defendant outweighs the reason $\{f_1^\pi\}$ for the plaintiff. But Γ_3 already contains the case c_7 , from which we can derive the priority relation $\{f_1^\delta, f_2^\delta\} <_{c_7} \{f_1^\pi\}$, telling us exactly the opposite. As a result, the augmented case base $\Gamma_3 \cup \{c_8\}$ would be reason inconsistent.

We now have before us two models—the standard model from Section 3 and the reason model described here—which offer strikingly different pictures of precedential constraint, and of legal development. According to the standard model, what is important about a background case base is the set of rules it contains. In reaching a decision concerning a new fact situation, a court is required to modify the existing set of rules, if necessary, to accommodate its decision. Precedential constraint results from the fact that such accommodation is not always possible; legal development involves the modification of existing rules, together with the introduction of new rules from new decisions. According to the reason model, what is important about a background case base is the priority ordering on reasons derived from the decisions it contains. In confronting a new fact situation, the court is required only to reach a decision that is consistent with this existing priority ordering. Constraint results from the fact that not all possible decisions are consistent; legal development involves strengthening the existing priority ordering with new priorities generated by new decisions.

In spite of the very different pictures associated with these two models, it turns out that the models are equivalent, in the following sense: against the background of a fixed case base, any new decision satisfies the standard model of precedential constraint just in case it satisfies the reason model. This observation—the central result of the paper—follows at once from a preliminary observation, verified in Appendix A, linking the technical concepts underlying the two models of constraint:

Observation 1 Let Γ be a case base. Then Γ is reason consistent if and only if its refinement Γ^+ is itself a case base.

Our central result can now be stated as follows:

Observation 2 Let Γ be a case base and X be a new fact situation. Then a decision in the situation X , on the basis of a rule r leading to an outcome s , satisfies the standard model of precedential constraint if and only if that same decision satisfies the reason model.

To verify this result, suppose first that, against the background of the case base Γ , a decision in the new fact situation X , on the basis of r and leading to s , satisfies the standard model of precedential constraint. What this means, by Definition 2, is that $(\Gamma \cup \{\langle X, r, s \rangle\})^+$ —the refinement of Γ once it is supplemented with the new decision $\langle X, r, s \rangle$ —must itself be a case base. It then follows from Observation 1 that the supplemented case base $\Gamma \cup \{\langle X, r, s \rangle\}$ is reason consistent, and so from Definition 6, that the same decision satisfies the reason model. Next, suppose that the same decision satisfies the reason model. What this means, by Definition 6, is that the supplemented case base $\Gamma \cup \{\langle X, r, s \rangle\}$ must be reason consistent. From Observation 1, again, it then follows that the refinement $(\Gamma \cup \{\langle X, r, s \rangle\})^+$ of this supplemented case base is itself a case base, and so, from Definition 2, that the decision satisfies the standard model.

This result shows how the reason model of precedential constraint can be used to supply a semantic justification for the Raz/Simpson conditions on rule modification. Suppose that, taking the reason model as fundamental, we imagine a notion of constraint based instead on accommodation of new decisions through rule modification, and search for conditions on rule modification that will guarantee its equivalence with the reason model. Then what our central result shows is that it is exactly the Raz/Simpson conditions that do the job.

Still, and especially in light of this equivalence between the reason model and the standard model, now taken together with the Raz/Simpson conditions, it is natural to ask why we should view

the reason model as the more fundamental of the two—why not take the standard model as fundamental, so that it is the reason model that needs to be justified, or, more plausibly, why not simply take the two models of precedential constraint as two different accounts of the same phenomenon that happen to agree, without supposing that either is more fundamental than the other? Given their equivalence, what are the advantages of understanding precedential constraint from the standpoint of the reason model, rather than the standard model? This is the question I will focus on in the remainder of the paper.

5. Constrained natural reasoning

The most important advantage, I think, is that the reason model supports an attractive picture not only of precedential constraint, but also of the process of reasoning and decision making in the common law. The matter is vexed in the literature, because common law reasoning so often appears to slip between two familiar accounts of legal decision making, with their own advantages and disadvantages.

The first of these accounts is decision making based on what I will call, following Larry Alexander and Emily Sherwin, *serious rules*—that is, rules that cannot be modified once they are introduced, but must simply be applied as stated.¹³ Of course, even decision making based on serious rules is not entirely unproblematic. The predicates contained in these rules could require interpretation, a process that may itself involve something like common law reasoning. And there could be gaps or gluts within the system of rules: at times, a decision may need to be reached in situations in which no rule is applicable; at other times, multiple rules, supporting conflicting results, may apply. But at least in situations in which some rule is applicable—conflict aside, and modulo interpretation—this account is one in which outcomes are determined by rules alone.

Decision making based on serious rules offers several advantages, which have been discussed at length by a number of writers, and of

which I mention only a few here.¹⁴ It is, first of all, simple, involving nothing more than a straightforward application of rules, and so leading to the advantage of *efficiency*.¹⁵ It possesses, in addition, the advantage described by Melvin Eisenberg as *replicability*, according to which individuals who are affected by the judgments of decision makers can replicate the reasoning of those decision makers.¹⁶ Many other virtues follow from replicability. For example, as Eisenberg notes, individuals who can replicate the reasoning of decision makers are in a better position to appreciate their competence, and so more likely to comply with the resulting decisions; or, in cases of incompetence, those who can replicate the underlying reasoning are in a better position to question that reasoning at the appropriate points.

Most important, replicability implies a degree of *predictability*, since individuals who can replicate a court's reasoning in previous cases will be able, in the same way, to predict its reasoning in future cases. And if individuals are able to anticipate the decisions a court might reach in future cases, they can plan their actions accordingly, leading to the further advantage of *social coordination*. Imagine, for example, that Ann would like to construct a shopping center on her property, while, at the same time, Bob is searching for a site for his vacation

14. For further discussion, and a guide to the literature, see especially Alexander and Sherwin (2008) and Schauer (1991).

15. Raz (1979, pp. 181–182) questions this advantage, arguing that even the straightforward application of rules can be difficult: he defines a “regulated dispute” as one governed by rules whose application does not require interpretation, claims that “regulated cases can be complex and more difficult to decide than unregulated cases,” and illustrates this claim by noting that the “difficulty in solving a complex tax problem according to law may be much greater than that of solving a natural justice problem according to moral principles.” I agree with this, of course—regulatory problems can be arbitrarily complex. But the difficulties presented by these complexities are of a special sort, reflecting our own information-processing limitations as much as anything else. In the field of artificial intelligence and law, where the focus is on machines with a very different pattern of cognitive limitations, pure rule-based reasoning is relatively unproblematic even in complex regulatory domains; see, for example, Bench-Capon (1991) and Schild and Herzog (1993).

16. See Eisenberg (1988, pp. 10–12); the idea is also discussed by Lamond (2005, p. 7).

13. The term is due to Alexander and Sherwin (2008, p. 11).

home; and suppose that zoning decisions are determined by a set of serious rules. Then, since reasoning with serious rules is predictable, Ann can apply these rules to conclude that a shopping center is allowed, or her representatives can do so.¹⁷ She can therefore proceed with construction, without worrying that a neighbor might convince a court to halt the project. And Bob, applying the same rules, will be able to reach the same result—that he cannot convince a court to halt Ann’s construction—and conclude, therefore, that he should not buy property adjacent to Ann, unless he is willing to accept the possibility of a shopping center next door. Coordination is thus achieved, with minimal judicial involvement.

Decision making with serious rules, then, has these advantages—efficiency, replicability, predictability, social coordination—as well as many others. Indeed, its sole disadvantage seems to be that, by screening off from consideration all features of particular situations except those that trigger the application of existing rules, this form of decision making can lead, at times, to suboptimal results, or at least to decisions that do not seem to be best, all things considered.¹⁸ Everyone is familiar with situations in which, for example, an important benefit is denied because of a minor violation of rules—perhaps a form was filed containing a trivial error, or a correct form filed just slightly past deadline.¹⁹ Here, the direct application of rules designed to promote

the bureaucratic goals of order and efficiency interferes with achievement of the different, but arguably more important, goals of benevolence and equity. The suboptimality of decision making based on serious rules is even more notable when their direct application interferes with the achievement not of different goals, even of more important goals, but of the very goals that the system of rules was introduced to advance—as when, for example, speed limits are put in place to assure that traffic flows smoothly and with minimal risk, but a driver finds, in some situation, that she can both enhance traffic flow and reduce risk by adjusting her speed to that of the surrounding vehicles, thus joining her fellow drivers in breaking the law.²⁰

The second of the two familiar accounts of common law reasoning considered here is one I will refer to, again following Alexander and Sherwin, as decision making based on *natural reasoning*—though I have also heard this form of decision making described as pure reason-based decision making, as all-things-considered decision making, or as decision making that is open-ended, unconstrained, or particularistic. An agent reaching a decision in this way will proceed through two stages: first, surveying the reasons that seem to bear on the situation at hand, assigning these reasons the weights, or priorities, they seem to deserve, and then, second, reaching whatever results these reasons together with their assigned priorities seem to support.

Two comments are in order. It is apparent, first, that this description of natural reasoning contains important gaps, since there are no clear, generally accepted answers to the questions of how the range of reasons bearing on some situation is to be surveyed, how priorities are to be assigned to those reasons, or how reasons along with their priorities support the results they do. Although I have explored answers to these questions elsewhere, I propose, in this paper, simply to live with the gaps, taking the idea of decision making purely on the basis of reasons as sufficiently well-understood—it is, after all, how most of us make

17. Eisenberg emphasizes (1988, p. 11) that replicability, and so predictability, is what allows for so many legal issues to be resolved by a professional class of lawyers, taking pressure off the judicial system.

18. This feature of rule-based decision making, and its consequences, are explored at length in Schauer (1991); see also Chapter 2 of Schauer (2009) and the papers cited there.

19. Schauer (2009, p. 10) discusses a case in which the United States Supreme Court decided that an individual should be denied a benefit because he filed a form on December 31 while the relevant statute read that the form should be filed “prior to December 31”—even though everyone agreed that the language of the statute reflected a drafting error, and that what Congress had meant to say was that the form should be filed “on or prior to December 31.”

20. The difficulties pointed out in this paragraph are, of course, standard objections to one version of rule utilitarianism.

most of the decisions we do.²¹ Second, we must note that among the features of a situation that might be relevant to a decision is the existence of certain rules. If there are rules, there may also be expectations that these rules will be followed; and both the rules and the resulting expectations may lead to reasons for one decision or another. There is nothing about natural reasoning that prevents rules from being taken into account in this way. All this account of decision making requires is that the rules themselves do not determine the resulting decisions. Instead, the facts that there are rules, and that these rules may lead to expectations, constitute reasons, which can then be assigned priorities and weighed along with other reasons in supporting one decision or another. Even if the resulting decisions conform to the rules, it is the reasons generated by these rules that determine the decision, not the rules themselves.

The chief advantage of decision making on the basis of natural reasoning is that, in contrast to decision making based on serious rules, it is guaranteed to lead to an optimal decision. How do we know this? By stipulation, or nearly so. When we say that the direct application of serious rules leads to a suboptimal result in some situation, what we mean is that it leads to a result different from the one we would have endorsed if we had considered all the reasons bearing on that situation, with each assigned its proper weight, or priority, and arrived at a decision on that basis. But, of course, a decision arrived at through natural reasoning simply is one reached on the basis of all the relevant reasons, with each assigned its proper priority. This style of reasoning, therefore, can be taken as defining what it means for a decision to be optimal.

The disadvantage of decision making based on natural reasoning is that, in allowing for full consideration of all reasons bearing on a

particular situation, it sacrifices the various advantages, discussed earlier, associated with decision making based on serious rules. Natural reasoning need not be particularly efficient: while the direct application of rules is straightforward, reflection on reasons, their priorities, and the decisions they support can be slow and agonizing. Nor is this form of reasoning, by and large, replicable: different individuals facing the same situation may well identify different reasons as relevant, and even if they agree on the relevant reasons, they are likely to assign them different priorities, so that different outcomes will be supported when these reasons are considered along with their priorities.²² Since those affected by the judgments of decision makers will no longer be able to replicate the reasoning behind these judgments, they will have less confidence in the judgments themselves, and will be less likely to comply; and if they wish to question this reasoning, they will find it more difficult to do so in a useful way.

Most important, if the reasoning behind a court's previous decisions cannot be replicated, it is unlikely that the court's future reasoning can be predicted either—with the result that individuals will no longer be able to anticipate judicial decisions, and the advantages of social coordination will be lost. Returning to our earlier example, just imagine a system in which zoning decisions were made not in accord with serious rules, but by a number of different courts, each engaged in natural reasoning, with the possibility that the different courts assign different priorities to the various reasons in play. The result would be chaos, or paralysis. Ann could never begin building her shopping center without worrying that a court that happens to place great weight on environmental concerns, or on the rights of Ann's neighbors to enjoy their property, might force her to halt construction. Bob could never buy property for his vacation home without worrying that a

21. My own account of how priorities are assigned to reasons, and of how reasons along with their priorities support the results they do, can be found in Horty (2012).

22. If we accept the account proposed in Horty (2012) of the way in which reasons support outcomes, there could be a further source of indeterminacy, since one version of this account allows that even the same set of reasons, with the same assignment of priorities, might at times lead to different, and conflicting, results.

court favoring commercial development would allow construction of a shopping center next door.

The contrast between the two accounts of decision making considered here, based on serious rules or on natural reasoning, is especially stark when it is seen from the perspective of our concern with the balance between constraint and freedom in the common law. From this perspective, it is clear that the weight of the first account, based on serious rules, lies entirely on the side of constraint: courts are constrained to follow the existing rules exactly as they have been formulated, without any freedom to modify these rules in certain situations in order to avoid suboptimal outcomes. By contrast, the weight of our second account, based on natural reasoning, lies entirely on the side of freedom: courts are free to consider all reasons bearing on a particular situation, along with their priorities, in order to reach the best decision possible in that situation, without any constraint at all from the rules articulated in previous decisions, except to the extent that those rules may themselves provide reasons, to be balanced against others in reaching a judgment.

Now, as I said earlier, it often appears that the correct picture of common law decision making must lie somewhere between the two accounts described here, with their attendant advantages and disadvantages—allowing more freedom than reasoning based on serious rules alone, but requiring more constraint than natural reasoning.²³ And there are, in the literature, two reactions to this idea. The first is to deny that there is, in fact, any defensible middle ground lying between these two familiar accounts, so that we are forced to assimilate decision making in the common law to one of these accounts or the other, with no further options. This hard-headed position is advocated most forcefully by Alexander and Sherwin, who go on to argue

23. Alexander (1989, p. 28) makes this point by alluding to the children's story, writing of readers presented only with these two models that, "Like Goldilocks and the bowls of porridge and beds, they will complain that the natural model of precedent is too weak to capture their sense of how precedents operate and that the rule model of precedent is too strong."

that it is best for everyone, both theorists and practitioners, to understand common law reasoning in accord with the account of reasoning based on serious rules.²⁴ The second reaction, of course, is to try to define this middle ground, and argue that it is defensible. This project has been pursued by a number of writers, in different ways; but a representative, and very attractive, proposal can be found in Frederick Schauer's "presumptive positivism."²⁵ According to this proposal, common law reasoning proceeds on the basis of serious rules in the vast run of cases, even in cases in which the direct application of these rules leads to moderately suboptimal outcomes. There is thus a strong presumption in favor of rule application, and so constraint. The exception, according to Schauer, is that, in cases in which suboptimality resulting from pure rule-based decision making threatens to become extreme, the rules can then be ignored in favor of natural reasoning, allowing courts the freedom to avoid the most egregious outcomes.

The account of decision making suggested by the reason model of precedential constraint is different. It is not an attempt to combine reasoning based on serious rules with natural reasoning; indeed, there is no appeal to rules at all. Instead, this account is entirely reason-driven, just like decision making based on natural reasoning, but with the sole difference that a common law decision maker, constrained by the precedents from a background case base, must adapt his or her own priority ordering on reasons so that it coheres with that derived from the case base. Because this form of reasoning is like natural reasoning, but with the priority ordering on reasons constrained to cohere with the ordering derived from a background case base, I refer to it as *constrained natural reasoning*.

To describe this account more precisely, recall that decision making on the basis of natural reasoning depends on two things: first, the reasons the agent sees as bearing on the situation at hand, and second,

24. See Alexander (1989) throughout, and then Alexander and Sherwin (2001, pp. 136–156) and (2008, pp. 27–127).

25. See Schauer (1989, pp. 469–471) and (1991, p. 117n, pp. 196–206).

the weights, or priorities, that the agent assigns to those reasons. We can simplify by imagining that the reasons bearing on some situation X are clear, and suppose that $<_i$ is the priority ordering assigned by the agent i to those reasons, so that it is this ordering that would guide the agent's natural reasoning. All that differs, then, when the agent is engaging in constrained natural reasoning, against the background of a case base Γ , is that the agent's own priority ordering $<_i$ on reasons must be revised to cohere with the ordering $<_\Gamma$ derived from this background case base—leading to, let us say, $<_{i/\Gamma}$ as a new ordering—and that it is this new ordering, rather than the original $<_i$, that guides the agent's decision.

How is the revised ordering $<_{i/\Gamma}$ to be determined, given the agent's original ordering $<_i$ together with the ordering $<_\Gamma$ derived from the background case base? We can assume, as an idealization, that the revised ordering must be consistent—that we cannot have both $W <_{i/\Gamma} Z$ and $Z <_{i/\Gamma} W$, for reasons W and Z . And since the agent's reasoning is supposed to be constrained by the derived priority ordering $<_\Gamma$, we must require also that the revised ordering $<_{i/\Gamma}$ should extend $<_\Gamma$ —that we should have $W <_{i/\Gamma} Z$ whenever $W <_\Gamma Z$, so that the revised ordering tells us that Z has higher priority than W whenever this relation can be derived from the background case base, no matter how the agent's original ordering might have ranked these reasons.

Beyond these two conditions, I believe there is very little of a systematic nature to be said. It may be tempting, from a conservative perspective, to imagine that the revised ordering $<_{i/\Gamma}$ should represent some minimal modification of the agent's original ordering $<_i$ —or more exactly, that $<_{i/\Gamma}$ should result from combining the ordering $<_\Gamma$ derived from the background case base with some maximal subset of the agent's original ordering $<_i$ that is consistent with $<_\Gamma$. But I can think of no justification for such a strong requirement. Of course, a particular agent might take such a resolute, unyielding stance toward his or her own ordering on reasons that the agent is unwilling to accept any modifications at all, apart from those strictly necessary for

reconciling this ordering with that derived from the background case base. But it is also possible for an agent to adopt a more open-minded, or receptive, attitude, perhaps extrapolating from the actual decisions contained in the background case base to a broader theory underlying those decisions, and then, in light of this broader theory, modifying his or her own priority ordering on reasons in ways that may go well beyond those strictly necessary for accommodating the ordering derived from the case base. Which attitude the agent adopts, and how, exactly, the agent's original ordering on reasons is modified to cohere with that derived from the case base might depend on a number of variables—including psychological facts about the agent, structural facts about the relation between the agent's original ordering and that derived from the case base, and substantive facts about the nature of the reasons under consideration.

Once the agent has revised his or her own original ordering of reasons $<_i$ so that it coheres with the ordering $<_\Gamma$ derived from the case base, leading to the new ordering $<_{i/\Gamma}$, the suggestion, once again, is that, to reach a decision in the situation X , the agent simply reasons in the natural way about this situation, except with the priority ordering on reasons given by the revised $<_{i/\Gamma}$ rather than the original $<_i$. Suppose that, reasoning in this way, the agent arrives at a decision in favor of the side s , say, on the basis of the rule r . The case base Γ will then be supplemented with this new decision, resulting in the richer case base $\Gamma' = \Gamma \cup \{ \langle X, r, s \rangle \}$ and the stronger ordering $<_{\Gamma'}$, which will then constrain the reasoning of the next agent deciding the next case. At each stage, then, the case base will be supplemented, and the derived priority ordering strengthened, in a way that reflects the particular decision maker's own priority ordering among the reasons bearing on the situation at hand, but only after this ordering has been revised to cohere with the ordering derived from the existing case base.

What of the balance between constraint and freedom, and of the respective advantages and disadvantages associated with decision making on the basis of serious rules or natural reasoning? Unlike decision making on the basis of serious rules, which provides constraint

without freedom, or entirely on the basis of natural reasoning, which allows freedom without constraint, decision making on the basis of constrained natural reasoning offers a balance. In considering some new situation against the background of an existing case base, a decision maker is constrained by the requirement that the reasons bearing on this situation must be evaluated not in accord with the priorities that the decision maker would naturally assign to them, but instead in accord with a priority ordering that has been revised to cohere with that derived from the existing case base. Once this requirement has been satisfied, however, the decision maker is then free to engage in an open-ended process of deliberation that brings all reasons bearing on that situation into play, and that proceeds in the natural way.

Although constrained natural reasoning offers this balance between constraint and freedom, it is important to see that the balance shifts as the law matures. Initially, while the law in an area is just beginning to be developed, the background case base Γ will contain very few decisions, so that the derived priority ordering $<_{\Gamma}$ will be weak. This derived priority ordering will therefore have relatively little impact on the revised ordering $<_{i/\Gamma}$, so that reasoning in accord with this revised ordering will approximate reasoning in accord with the agent's original ordering $<_i$. At this early stage, constrained natural reasoning will share many of the advantages and disadvantages of unconstrained reasoning: common law decision makers will have a good deal of freedom to reach solutions they consider to be optimal, but their reasoning will not necessarily be predictable, and advantages of social coordination will be sacrificed. As the law is developed, and the case base Γ becomes more populated with decisions, the ordering $<_{\Gamma}$ derived from this case base will grow stronger. Because the revised priority ordering $<_{i/\Gamma}$ must extend the derived ordering $<_{\Gamma}$, this derived ordering will have an increasing influence on the nature of the revised ordering, so that reasoning in accord with this revised ordering will diverge more significantly from reasoning in accord with the agent's original ordering. In these later stages of legal development, constrained natural reasoning will come to share the characteristics of reasoning on

the basis of serious rules: common law decision makers will have less freedom to reach decisions they view as optimal, but their decisions will become more predictable, supporting social coordination.

6. Objections and replies

Although the reason model of precedential constraint, summarized in Section 4 of this paper, is equivalent to the standard model developed in Section 3, I have argued that the reason model should be taken as fundamental, first of all, because it supports an attractive picture of common law reasoning as constrained natural reasoning. In this final section, I continue the argument by showing how the perspective provided by the reason model helps us understand two further features of the common law that may seem puzzling, or objectionable, when viewed from the perspective of the standard model. The first of these is the nature of the distinction between distinguishing and overruling previous decisions, two different ways of changing the law; the second is the constraining effect of precedent.

The distinction between distinguishing and overruling is generally taken as central to the common law. All courts are thought to have the power of distinguishing previous decisions, through which they carry out a process of gradual, incremental, adaptive legal development. Overruling a previous decision, by contrast, is viewed as a more radical operation, generally available only to courts either above or, sometimes, at the same level as that which decided the case to be overruled. Even then, this option is avoided whenever possible, since the resulting legal transformations can be abrupt and extreme: when a precedent case is overruled, it is as if the case were completely "wiped off the slate," or removed "root and branch."²⁶

To provide a concrete illustration of the distinction between distinguishing and overruling, we return to our initial example from this paper. The example centered around a situation in which Jack and Jo

26. The first phrase is due to Cross (1968, p. 119), who attributes it to Lord Dunedin; the second is due to Raz (1979, p. 189).

have two children: Emma, age nine, who did not finish dinner but did complete her homework, and Max, age twelve, who neither finished dinner nor completed his homework. Both children wanted to stay up and watch TV. We imagined that Emma first asked Jo, who granted the request, justifying her decision with the rule, “Children age nine or greater can stay up and watch TV.” Next, we imagined, Max asked Jack, who denied the request, distinguishing this case from that of Emma by appeal to the fact that Max failed to complete his homework—thus, both introducing the new rule “Children who have not completed their homework cannot stay up and watch TV” and also modifying Jo’s previous rule to read, “Children age nine or greater who have completed their homework can stay up and watch TV.” Since Jack’s modification of Jo’s rule satisfies the Raz/Simpson conditions—merely narrowing the rule, and doing so in a way that continues to support the previous decision—it can be taken as a legitimate case of distinguishing.

This scenario can be represented in our framework by taking the factor f_1^π to represent the fact that the child in question is at least nine years old, and then f_1^δ and f_2^δ , respectively, to represent the facts that the child failed to finish dinner and failed to complete homework. The initial situation confronting Jo, then, was $X_9 = \{f_1^\pi, f_1^\delta\}$, which she decided on the basis of the rule $r_9 = \{f_1^\pi\} \rightarrow \pi$, leading to the case base $\Gamma_4 = \{c_9\}$, containing only the single case $c_9 = \langle X_9, r_9, s_9 \rangle$, where X_9 and r_9 are as above, and where $s_9 = \pi$. Next, Jack was confronted by the situation $X_{10} = \{f_1^\pi, f_1^\delta, f_2^\delta\}$, which he decided on the basis of the rule $r_{10} = \{f_2^\delta\} \rightarrow \delta$ —both supplementing the existing case base with the new case $c_{10} = \langle X_{10}, r_{10}, s_{10} \rangle$ where X_{10} and r_{10} are as above and where $s_{10} = \delta$, and also modifying Jo’s original rule to carry the force $r_9' = \{f_1^\pi\} \wedge \neg\{f_2^\delta\} \rightarrow \pi$. Since Jack’s modification of Jo’s rule satisfies the Raz/Simpson constraints, it was taken as a legitimate instance of distinguishing. The case base resulting from Jack’s decision is thus $\Gamma_4' = \{c_9', c_{10}\}$, with $c_9' = \langle X_9', r_9', s_9' \rangle$ as a modification of the previous c_9 , where $X_9' = X_9$, where r_9' is as above, and where $s_9' = s_9$; and with c_{10} as above.

Suppose, however, that Jack had disagreed with Jo’s original de-

cision, which downplays the significance of failing to finish dinner, and chose to use the case of Max to reaffirm the importance of this factor. We can then imagine that, rather than proceeding as in the initial scenario, Jack had instead chosen to justify his decision with the new rule “Children who have not finished their dinner cannot stay up and watch TV,” represented here as $r_{11} = \{f_1^\delta\} \rightarrow \delta$, and so leading to the new case $c_{11} = \langle X_{11}, r_{11}, s_{11} \rangle$, where $X_{11} = X_{10}$, where r_{11} is as above, and where $s_{11} = \delta$. This new rule would no longer satisfy the Raz/Simpson conditions—it is neither a narrowing of Jo’s original rule, nor does it support the previous decision—and so Jack would now have to be taken not simply as distinguishing but as overruling Jo’s decision. How can this operation be modeled in the present framework? If an overruled case is indeed to be “wiped from the slate,” then it is natural to suppose that one logical effect of this operation is that the overruled case should be removed from the case base entirely.²⁷ On this view, Jack can be seen as both supplementing the background case base with his new decision and then not modifying but simply removing Jo’s previous decision, leading to

$$\begin{aligned}\Gamma_4'' &= (\Gamma_4 - \{c_9\}) \cup \{c_{11}\} \\ &= \{c_{11}\}\end{aligned}$$

as the updated case base, with c_{11} as above.

From an intuitive standpoint, a comparison between these two scenarios seems to support the standard distinction between distinguishing and overruling previous decisions as different ways of modifying the law. It does seem, for example, that the rule set out by Jack in the

27. There may be other logical effects as well. Perhaps, in overruling a case, a court should be taken as removing from the case base not only that particular case, but every other case that shares the same rule; or perhaps there is a temporal dimension, so that the court should be taken as removing every other case sharing the same rule as the original that was decided at a later date. Overruling can be a complex operation, but there is no need to consider its complexities here, since our example contains only a single case to be overruled.

second scenario represents a much more radical challenge to Jo's decision than Jack's rule in the initial scenario; and we can understand why, in a stable legal system, only certain courts should be able to challenge earlier decisions in such a radical way. Nevertheless, in spite of the intuitive force of the distinction between distinguishing and overruling, Alexander and Sherwin argue that this distinction is both confused and dangerous. On confusion, they write that we should not

distinguish between overruling precedent rules and modifying or "distinguishing" them. When a judge makes an exception to a rule to accommodate a particular case, the judge is effectively eliminating the precedent rule and announcing a new rule in its place.²⁸

And on danger:

The practice of distinguishing precedent rules is dangerous to the stability of rules because it creates an illusion of modesty. Judges may intervene more often when they believe they are merely modifying, rather than overruling, established rules. This belief is mistaken because modifying or distinguishing precedent rules just *is* overruling them.²⁹

In fact, when they are viewed from the perspective of the standard model, I believe these objections to the distinction between distinguishing and overruling make good sense. To begin with, we must agree with Alexander and Sherwin that, even in instances of legal development typically classified as distinguishing, where the Raz/Simpson conditions are satisfied, a later court is not, strictly speaking, modifying an earlier rule at all, but instead removing that rule from consideration and introducing one or more new rules; these new rules may have more or less similarity to the original, but they are nevertheless

different rules, exhibiting different syntactic structures and yielding different results in a variety of situations. In the first of our two scenarios, for example, Jack removes Jo's original rule $r_9 = \{f_1^\pi\} \rightarrow \pi$ and introduces the new rules $r_{9'} = \{f_1^\pi\} \wedge \neg\{f_2^\delta\} \rightarrow \pi$ and $r_{10} = \{f_2^\delta\} \rightarrow \delta$; in the second, Jack again removes Jo's original rule and introduces the new rule $r_{11} = \{f_1^\delta\} \rightarrow \delta$. In each scenario, then, Jo's original rule is eliminated entirely, and none of the new rules support the same result as the original in the new fact situation presented by Max. Why, then, should we think of distinguishing as any less radical than overruling—why should we think that Jack's challenge to Jo's original decision in the first scenario is any less radical than his challenge in the second?

However, this problem for the standard model, with its emphasis on rules, has a happy solution when the matter is viewed from the perspective of the reason model, which allows a clear semantic distinction between distinguishing and overruling to be drawn in terms of the priority ordering on reasons derived from a background case base. Since both decisions that distinguish and decisions that overrule change the case base, both kinds of decisions change the derived priority ordering as well; but they do so in very different ways. A court that distinguishes a previous decision merely expands the existing case base with a new decision, with the result that the derived priority ordering on reasons is strengthened. But a court that overrules a previous decision both expands the existing case base with a new decision and contracts it through the removal of a previous case, with the result that the derived priority ordering is strengthened in some ways but weakened in others, and is therefore incomparable to the original.

This point can be illustrated by returning to our two scenarios. In the first scenario, when Jack distinguishes Jo's earlier decision, moving from the original case base Γ_4 to the new case base Γ_4' , the derived priority ordering is strengthened: it is easy to see that $W <_{\Gamma_4} Z$ implies $W <_{\Gamma_4'} Z$ for any reasons W and Z , and the new ordering yields $\{f_1^\pi\} <_{\Gamma_4'} \{f_2^\delta\}$ while the original ordering did not support the corresponding $\{f_1^\pi\} <_{\Gamma_4} \{f_2^\delta\}$. But in the second scenario, when Jack overrules Jo's earlier decision, now moving from the original case base Γ_4 to

28. Alexander and Sherwin (2008, pp. 114–115; see also pp. 59, 84). Schauer voices a similar concern when he argues that a rule that can be modified at the moment of application is "in an important way not a rule at all" (1991, p. 117).
29. Alexander and Sherwin (2008, p. 124).

the new Γ_4'' , the resulting derived priority ordering is incomparable to the original: it is stronger in some ways, since we have $\{f_1^\pi\} <_{\Gamma_4''} \{f_1^\delta\}$ but not $\{f_1^\pi\} <_{\Gamma_4} \{f_1^\delta\}$, but it is also weaker in some ways, since we have $\{f_1^\delta\} <_{\Gamma_4} \{f_1^\pi\}$ but not $\{f_1^\delta\} <_{\Gamma_4''} \{f_1^\pi\}$.

What this shows, to use technical jargon, is that overruling is a *destructive* operation, removing existing information in addition to adding new information. The operation of distinguishing can likewise appear to be destructive from the perspective of the standard model, since it involves the removal of existing rules—this is Alexander and Sherwin’s point. But when it is viewed from the perspective of the reason model, we can see that this operation is entirely *constructive*, merely adding new information to the priority ordering, not removing any existing information. The reason model thus provides us with a principled way of respecting the standard common law distinction between distinguishing and overruling previous decisions, and of explaining why overruling is a more radical way of changing the law than distinguishing.

I now turn to a second objection to the standard model: that, as long as the rules set out by courts can be distinguished—even if the modifications involved are required to satisfy the Raz/Simpson conditions—common law decisions can have no real constraining effect on future courts at all, since there will always be features available for these courts to use in distinguishing the situations they face from those confronted earlier. Again, this objection is set out forcefully by Alexander and Sherwin, who illustrate the problem with their story of the ocelot and the alligator.³⁰ We are asked to imagine that an earlier court has already considered the question whether a certain individual could keep an ocelot at home and arrived at a negative decision, justifying this decision with the rule, “Wild animals in residential neighborhoods are nuisances”—where we can assume it is already settled that animals can be kept at home just in case they are not nuisances. A later court

now faces the question whether another individual can keep an alligator. This court is sympathetic to the alligator, wishes to arrive at a positive decision in the case at hand, but is aware that it must distinguish the previous rule in order to do so. The court therefore notes that ocelots but not alligators are furry, and proceeds to distinguish on that basis, modifying the previous rule to read, “Furry wild animals in residential neighborhoods are nuisances,” and, we might as well suppose, justifying its decision with the new rule, “Animals without fur are not nuisances.”

By modifying the earlier rule in this way, the later court has rendered it inapplicable to the case of the alligator, giving itself the freedom to decide the new case however it wishes, without constraint from the rule. And as Alexander and Sherwin point out, this instance of rule modification satisfies the Raz/Simpson conditions, merely narrowing the previous rule, and narrowing it in such a way that the modified rule continues to support the decision arrived at in the previous case. The example thus highlights the fact that any two cases can be differentiated in any number of ways, even if many of these differences are only incidental—that one dangerous wild animal but not the other is furry, for example, or that the defendant in one case but not the other has freckles, or plays the harmonica, or has an aunt living in Idaho. And if all a court needs to do in order to shield the decision it wishes to reach from some previous rule is to narrow the rule by appeal to one of these incidental differences, then it really is hard to see, from the perspective of the standard model alone, how the decisions reached in earlier cases constrain later decisions.

But let us look at the example from the standpoint of the reason model, focusing in particular on the accompanying account of decision making through constrained natural reasoning. Suppose the court considering the case of the alligator reasons in accord with this account—that is, suppose the court reasons about the issue in the natural way, but with the weight it would normally assign to certain reasons modified to cohere with the priority ordering derived from the background case base, including the case of the ocelot. And imagine that the court,

30. See Alexander and Sherwin (2008, pp. 84–86).

reasoning in this way, and reasoning sincerely, really does conclude that the alligator's lack of fur is a reason against classifying it as a nuisance, and indeed a stronger reason than that provided for the opposite conclusion by the fact that the alligator is a wild animal. In that case, I believe it would be right, at least from an internal perspective, for the court to reach exactly the decision described in the example—that the previous case should be distinguished, and the alligator allowed because it has no fur. The court, after all, has an obligation to reach the decision it sincerely thinks is best, taking into account both the reasons bearing on this situation and the priorities it sees among these reasons, once these priorities have been adjusted to cohere with those derived from the background case base.

What is so odd about this scenario, and what gives the example its force, is not some problem with the idea of distinguishing, but simply the assumption that the court might actually conclude, in all sincerity, that this particular decision is best—that any court, reasoning in the natural way, could ever conclude that lack of fur is a consideration that bears on the situation at all, let alone a reason strong enough to outweigh important considerations favoring the other side. Surely any such court would be criticizable, in the same way that those who engage in poor natural reasoning in any other domain are criticizable. There is also the suggestion, in Alexander and Sherwin's presentation of the example, that the court, by introducing lack of fur as a reason, is being disingenuous. But this would be criticizable as well—not in the way that poor natural reasoning is criticizable, but in the way that we might criticize a person who is misleading or dismissive about a matter that should be taken seriously. And it is by focusing on this general idea of criticizability, I think, that we can locate a response to Alexander and Sherwin's objection concerning the possibility of constraint: earlier courts constrain later courts not by preventing these later courts from reaching certain decisions, but by limiting the resources available to these courts for arriving at or justifying decisions in ways that are not criticizable.

This suggestion can be illustrated with a slightly more elaborate

version of the same example. Suppose that, in both the initial case of the ocelot and the later case of the alligator, there are two considerations with real bearing on the question whether the animal at hand is a nuisance: both animals are wild, but both are kept in sturdy pens. And also, of course, there are a number of incidental factors: one animal has fur while the other does not, for example. It is natural to imagine that, in deciding whether the ocelot should be classified as a nuisance, the initial court weighed the inherent danger of keeping a wild animal at all against the security derived from keeping that animal in a sturdy pen. Either decision would have been understandable, but we can assume, as in the original scenario, that the court eventually concluded that the ocelot should be classified as a nuisance because it is a wild animal, even though it is kept in a pen. As a result of this decision, the priority ordering derived from the case base will—according to the reason model—contain the information that the property of being wild carries more weight in favor of the conclusion that an animal is a nuisance than the property of being kept in a sturdy pen carries for the opposite conclusion.

Now, against this background, how should the court reach its decision in the later case of the alligator? Just as before, there are good reasons favoring each conclusion: the animal is wild, but it is kept in a sturdy pen. And we might even suppose that the judge in this case, reasoning as an individual, would assign greater weight to the latter of these considerations—so that, if the initial question of the ocelot had come before this court, it would have been found not to be a nuisance, since it is kept in a sturdy pen. Nevertheless, that question has now been decided for the other side, and as a result of this decision, it has now been established that the case base supports the opposite priority relation on the relevant reasons. According to our account of common law reasoning, therefore, the judge, deliberating in an official capacity at least, must now revise his or her own individual priority relation to cohere with that derived from the background case base, so that being wild will be assigned greater weight than being kept in a sturdy pen.

The later court will, therefore, no longer be able to arrive at, or

justify, a decision that the alligator is not a nuisance on the basis of the reasonable consideration that it is kept in a sturdy pen, since the consideration that it is a wild animal, supporting the other side, has already been given greater weight. Suppose, then, that the court reaches, or justifies, its decision in favor of the alligator by appealing instead to an incidental feature of the situation, such as the fact that the alligator lacks fur. In that case, as we have seen, there are two possibilities. If the court reaches this conclusion sincerely—if it really does assign this consideration sufficient weight to override the danger posed by the alligator as a wild animal—then the court can be criticized for its poor natural reasoning, and for its very odd prioritization among reasons. On the other hand, if the court realizes that its revised priority ordering on reasons no longer provides any real basis for its desired conclusion, but introduces lack of fur as a consideration supporting this conclusion in a misleading or disingenuous way, then the court can be criticized on other grounds. In either case, the earlier decision regarding the ocelot deprives the later court of resources for reaching, or justifying, the conclusion that the alligator is not a nuisance in a reasonable way, leaving open only paths to this conclusion that are more questionable, and more easily criticized.

From the perspective of the standard model, then, it may appear that the constraint of common law is minimal, since a court can distinguish a previous rule on the basis of any consideration at all, as long as the modification of that rule satisfies the purely formal Raz/Simpson conditions. But the reason model allows us to see that there is more to it than that. Whenever a court distinguishes a previous rule, it puts forth, at the same time, a claim about the priority relation among reasons—that lacking fur is a more important consideration than being a dangerous wild animal, for example—which is itself subject to evaluation.³¹ Common law constrains because each decision settles the

priority relations among certain reasons, and so limits the ability of later courts to claim otherwise. After a sufficient number of decisions, the priorities among all the important reasons in some domain will be well enough understood that a later court can then distinguish an earlier rule only by offering further claims of priority that are unlikely to withstand evaluation.

7. Conclusion

In this paper, I have presented—for the first time, I believe—a precise formulation of the standard model of precedential constraint, shown that this model is equivalent to the reason model developed in my previous work, but argued that, in spite of their equivalence, the reason model provides us with a better perspective than the standard model on the nature of precedent in the common law. My argument hinged on the observations that the reason model supports a satisfying account of legal decision making as constrained natural reasoning, and that it allows a response to two important criticisms of the standard model: it provides a principled distinction between the familiar legal practices of distinguishing and overruling previous decisions, and it helps us to understand the constraining role of precedent.

Much work remains. The present analysis is carried out against the background of a rudimentary factor-based representation of legal cases, which would have to be enriched in several ways. Let me list just two, both of which have been explored in the field of artificial intelligence and law. First, the current representation is flat, picturing legal reasoning as moving from a collection of base-level factors favoring the plaintiff or defendant immediately to a decision for one side or another; a realistic case, by contrast, often has a more hierarchical structure in which several stages of intermediate conclusions are established, which are then taken to support the final outcome.³² Sec-

31. How are claims about priority relations among reasons to be evaluated? Two different accounts of the way in which these claims can be evaluated by appeal to further reasons are offered in Schroeder (2007, pp. 123–145) and Horty (2012, pp. 111–121); the latter explores an example (pp. 119–121) in which pri-

ority relations among legal reasons, in particular, are established by appeal to further legal reasons.

32. For hierarchical factor-based representations of precedent cases, see Aleven (1997), already mentioned, and also the work of Branting in (1991) and (1993);

ond, there is no trace of teleology—the values or purposes advanced by particular decisions—in the current representation, yet teleological considerations can be important in determining the constraining force of precedent cases.³³

I am optimistic that the ideas advanced in this paper lie at the heart of the concept of precedential constraint, but this optimism can be confirmed only by developing these ideas in a richer framework, with resources for modeling both hierarchical and teleological information, and for exploring other aspects of common law reasoning as well—such as the relations between precedential constraint and analogical generalization, for example, or the connections between case-based and statutory reasoning.³⁴ At the same time, I believe that these ideas could have applications even outside the legal domain, to other areas in which actions seem to be governed by rules, or principles, that are subject to modification. In the field of practical ethics, for example, Henry Richardson has proposed an approach according to which concrete normative conflicts are to be resolved by specifying the relevant norms.³⁵ If I am right, it may be better to think of this approach as one that involves the development of a weighing relation, or priority ordering, among reasons.

hierarchical factor-based reasoning is analyzed from a logical perspective by Prakken and Sartor (1998).

33. Within artificial intelligence and law, the importance of representing teleological aspects of precedent cases was first emphasized by Berman and Hafner (1993); more recent work can be found in Bench-Capon (2002), Prakken (2002), and Sartor (2010).

34. There is, of course, a vast literature on analogy in the common law, with some legal theorists and cognitive scientists, such as Brewer (1996), Spellman (2010), Sunstein (1993), and Weinreb (2005), arguing that this form of reasoning is central to the enterprise, and with others, such as Alexander and Sherwin (2008), Posner (2006), and Schauer (2008), questioning its value; a recent, more balanced discussion is presented by Lamond (2014). For an introduction to work on case-based reasoning in a statutory domain, see Rissland and Skalak (1989) and Skalak and Rissland (1991).

35. See Richardson (1990) and, for a later perspective on this work, Richardson (2000).

An entirely different kind of question arises when we reflect on the process of common law development—as the reason model invites us to do—from the standpoint of social choice theory. What the common law yields, according to the reason model, is a social ordering on reasons, constructed as a result of decisions by individual courts engaged in constrained natural reasoning, each deciding cases on the basis of their own personal ordering on reasons, once this ordering has been modified to cohere with the social ordering already established. The common law can thus be seen as the realization of a particular kind of preference aggregation procedure—a particular way of aggregating individual preferences, or priorities, among reasons into a group preference. Unlike the preference aggregation functions usually studied in social choice theory, however, the procedure realized by the common law does not simply take a collection of individual preferences as inputs and output a group preference, all at once. Instead, the common law constructs its group preference ranking on reasons through a procedure that is piecemeal, distributed, and responsive to particular circumstances. What is the justification for a procedure of exactly this kind? What social needs did it evolve to meet, and how can we establish its efficacy at meeting those needs?

Appendix A. Verification of Observation 1

Observation 1 Let Γ be a case base. Then Γ is reason consistent if and only if its refinement Γ^+ is itself a case base.

Proof The proof is divided into two parts.

Part I: If Γ is a reason consistent case base, then its refinement Γ^+ is a case base.

Proof of Part I: Suppose Γ is a reason consistent case base. Γ^+ is constructed from Γ by replacing each case $c = \langle X, r, s \rangle$ from Γ with the new $c'' = \langle X, r'', s \rangle$, where the new rule r'' has the form $\text{Premise}^s(r) \wedge D_c \rightarrow s$, as specified in Definition 1. Since all of the new rules involved in moving from Γ to Γ^+ support the same outcomes as the original, we can verify that Γ^+ is a case base as well simply by establishing that, for each $c'' = \langle X, r'', s \rangle$ from Γ^+ , the new rule r'' continues

to be applicable to the fact situation X —that is, that $X \models \text{Premise}(r'')$, or that $X \models \text{Premise}^s(r) \wedge D_c$. We know, of course, that $X \models \text{Premise}^s(r)$, since Γ is a case base, and so need only show that $X \models D_c$.

It follows from Steps 2 and 3 of the construction that establishing that $X \models D_c$ amounts to showing, for each $c' = \langle Y, r', \bar{s} \rangle$ from Γ_c , where $c = \langle X, r, s \rangle$, that $X \models \neg \text{Premise}^{\bar{s}}(r')$. So suppose the contrary—that $X \not\models \neg \text{Premise}^{\bar{s}}(r')$, or $X \models \text{Premise}^{\bar{s}}(r')$, from which we can conclude that (1) $\text{Premise}^{\bar{s}}(r') \subseteq X^{\bar{s}}$. Since $c' = \langle Y, r', \bar{s} \rangle$ belongs to Γ_c , we know from Step 1 of the construction that $Y \models \text{Premise}^s(r)$, from which we can conclude that (2) $\text{Premise}^s(r) \subseteq Y^s$. From (1), we can then conclude by Definition 3 that (3) $\text{Premise}^{\bar{s}}(r') <_c \text{Premise}^s(r)$, and from (2), that (4) $\text{Premise}^s(r) <_{c'} \text{Premise}^{\bar{s}}(r')$. But since both c and c' belong to Γ , the combination of (3) and (4) contradicts the stipulation that Γ is reason consistent. Hence, our assumption fails, from which we can conclude that $X \models D_c$.

Part II: If Γ is a case base whose refinement Γ^+ is also a case base, then Γ is reason consistent.

Proof of Part II: Suppose Γ is a case base whose refinement Γ^+ is a case base, but that Γ itself is not reason consistent. Since Γ is not reason consistent, there are reasons A and B such that (1) $A <_c B$ and (2) $B <_{c'} A$ for cases $c = \langle X, r, s \rangle$ and $c' = \langle Y, r', \bar{s} \rangle$ from Γ . From (1) we have (3) $A \subseteq X^{\bar{s}}$ and (4) $\text{Premise}^s(r) \subseteq B$, and from (2) we have (5) $B \subseteq Y^s$ and (6) $\text{Premise}^{\bar{s}}(r') \subseteq A$. Together, (4) and (5), along with the fact that $Y^s \subseteq Y$, yield $\text{Premise}^s(r) \subseteq Y$, or (7) $Y \models \text{Premise}^s(r)$. In the same way, (3) and (6), together with the fact that $X^{\bar{s}} \subseteq X$, yield $\text{Premise}^{\bar{s}}(r') \subseteq X$, or (8) $X \models \text{Premise}^{\bar{s}}(r')$.

Γ^+ is constructed from the case base Γ by replacing each case $c = \langle X, r, s \rangle$ with the new $c'' = \langle X, r'', s \rangle$, where the new rule r'' has the form $\text{Premise}^s(r) \wedge D_c \rightarrow s$, as specified in Definition 1. Step 1 of this construction, together with (7), tells us that c' belongs to Γ_c , and then Steps 2, 3, and 4 allow us to conclude that $\neg \text{Premise}^{\bar{s}}(r')$ is one of the conjuncts of D_c , and so of the new rule r'' . From (8), however, we know that $X \models \text{Premise}^{\bar{s}}(r')$, from which it follows that $X \not\models \neg \text{Premise}^{\bar{s}}(r')$. As a result, the rule of c'' does not apply to its facts, from which it

follows that c'' is not a case, and so Γ^+ not a case base, contrary to our assumption.

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