Representing Teleological Structure in Case-Based Legal Reasoning: The Missing Link

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Abstract

We argue that robust case-based models of legal knowledge that represent the way in which practicing professionals use legal decisions must contain a deeper domain model that represents the purposes behind the rules articulated in the cases. We propose a model for representing the teleological components of legal decisions, and we suggest a method for utilizing this representation in a HYPO-like framework for case-based legal argument.

1. Introduction.

By the use of frame-based structures, transition nets, semantic networks, issue-case discrimination trees, and connectionist models, AI researchers have made significant advances in modelling various ways that lawyers reason from previously decided cases [Ashley 1990; Ashley & Aleven 1991, 1992; Branting 1989, 1991; Gardner 1987; Goldman 1987; Hafner 1981, 1987; Rissland 1987; Rissland & Skalak 1989,1991; Vossos et al 1991] Several models generate outputs that to some degree simulate human adversarial discourse. [Ashley & Aleven 1991; Ashley 1990; Branting 1991]. Another model represents the adversarial techniques for interpreting open textured statutory predicates with an elegance and thoroughness not found in any comparable legal text [Skalak & Rissland 1992].

To date, these case-based computational models of judicial opinions represent the knowledge as a concatenation of disembodied symbols divorced from the real world of clients, lawyers, money, changing social values, history, politics, etc. In these models an objective symbol or set of symbols found in a current case is matched, or not matched, against symbols found in a prior case. But these sophisticated indexing pattern-matching algorithms lack the robustness needed to represent intelligently the thought processes of practicing lawyers because they do not incorporate the purposes underlying the decisions. The need for deep structure in rule based systems has already been noted [Smith & Deedman 1987]. In this paper we begin to examine the requirements for adding a teleological component to case-based reasoners. Unlike Smith & Deedman who formulated their deep structure model without reliance on the doctrines or concepts articulated in judicial opinions [Smith & Deedman 1987, p. 89] we suggest a method of representing teleological arguments in a case-based system for legal reasoning by incorporating the teleological arguments that we believe were actually made or would have been made by skilled advocates. Thus, we treat teleogoical arguments in a manner similar to argument moves described elsewhere [Skalak & Rissland 1992; Klare 1992; Kennedy 1991; LLewellyn 1951].

2. Teleological Concepts in Legal Arguments

From their first day at American law schools, students learn that the relevance of facts can not be divorced from the purposes behind legal rules. Consider the following three cases which are studied by many (if not most) American law students [e.g. Casner & Leach 1984, pp.10-21]. The plaintiff in *Pierson v. Post* ("*Pierson*"), 3 Cai. R. 175, 2 Am. Dec. 264 (Supreme Court of N.Y, 1805), was fox hunting on open land. While the plaintiff, with horse and hound, pursued the fox the defendant, "well knowing the fox was so hunted...did, in the sight of Post, to prevent his catching the same, kill and carry it off." The Court ruled that to recover the plaintiff had to have gained possession of the fox. In ruling that the plaintiff had not gained possession because he neither captured nor mortally wounded the fox the Court explained,

> [We so hold] for the sake of certainty, and preserving peace and order in society. If the first seeing, starting, or pursuing such animals...should afford the basis of actions...it would prove a fertile source of quarrels and litigation.

The Court articulated a vision that if they did not establish strict guidelines for obtaining title to wild animals then the court might be swamped with disgruntled hunters arguing over who first saw the animal.

The dissenter, in an intense effort to justify a contrary result, argued,

> When we reflect ... that the interest of our husbandmen, the most useful of men in any community, will be advanced by the destruction of a beast so pernicious and incorrigible, we cannot err, in saying, that a pursuit like the present ...confers ...a right to the object of it...

The dissenter had the vision of many additional foxes ravaging local farms unless hunters are rewarded in their pursuits.

Since factual relevance is determined within a broad philosophical and jurisprudential context, judges may not adhere to a uniform definition of "possession" in all wild animal cases. Given the dissenter's justification, he might have agreed with the majority's result had the hunter been pursuing a quail rather than a fox. Similarly, the majority might have reached a contrary decision had violence among sportsman escalated as a result of such confrontational behavior.

Students next read Keeble v. Hickeringill ("Keeble"), 11 East 574, 103 Eng. Rep. 1127 (Queen's Bench, 1707). There the plaintiff owned a pond upon which he placed duck decoys. The defendant, intending to injure the plaintiff's livelihood, used guns to scare away the ducks. Even though the plaintiff had neither wounded nor captured the ducks the court, nonetheless, found for the plaintiff by reasoning,

> [W]here a violent or malicious act is done to a man's occupation, profession or way of getting a livelihood, there an action lies in all cases. But if a man doth him damage by using the same employment; as if Mr. Hickeringill had set up another decoy on his own ground near the plaintiff's, and that had spoiled the custom of the plaintiff, no action would lie...This is like the case of 11 H. 4,47. One schoolmaster sets up a new school to the damage of an antient school, thereby the scholars are allured from the old school to come to his new. (The action was held there not to lie) But suppose Mr. Hickeringill should lie in the way with his guns, and fright the boy from going to school...sure that schoolmaster might have action.
>
> *****
>
> And when ...decoy[s] have been used...in order to be taken for profit of the owner of the pond...and whereby the markets of the nation may be furnished; there is great reason to give encouragement thereunto...

Once the purpose of the rule is understood, analogous cases setting forth the rights of school masters become more relevant than cases dealing with foxes.

In dealing with these cases law students also develop the ability to isolate and match the relevant factors. Obvious similarities exist. Both cases involved unfettered wild animals and both involved defendants motivated by malice. Students distinguish *Pierson* from *Keeble* on the grounds that the plaintiff in *Pierson* was hunting the fox on open land while the plaintiff in *Keeble* set out the decoys on his own land, and the plaintiff in *Pierson* was hunting for sport while the plaintiff in *Keeble* was pursuing his livelihood.

The importance of this type of symbolic mapping becomes evident when the students move to an examination of *Young v. Hitchens* ("*Young*"), 1 Dav. & Mer. 592, 6Q.B. 606 (1844). In *Young* the plaintiff, a commercial fisherman, spread a net of 140 fathoms in length across a portion of open ocean. After the plaintiff had closed the net to a space of a few fathoms the defendant went through the opening and spread its net and caught the fish. Students, focusing on the plaintiff's need to make a living, map to *Keeble* which would portend a plaintiff's victory. Students also map to the open land in *Pierson* which suggests that the defendant should prevail. In *Young* the Court found for the defendant.

Figure 1 shows the relevant factors in the "wild animal" domain, and the relationship among the three cases based on those factors, following the approach of [Rissland and Ashley, 1987, Ashley 1990]. This data structure can be used to generate the following 3-Ply argument [Ashley 1990, p. 70-71]

Argument I.

> ==> Point for Defendant
>
> Where: Plaintiff seeking capture of a wild animal and did not mortally wound or capture the animal the defendant should win a claim for trespass. Cite: *Pierson v. Post.*
>
> <== Response for Plaintiff
>
> *Pierson* is distinguishable because: In *Pierson* the Plaintiff did not make his living from the capture of wild animals. The open land in Post is like the open sea in the current case.

Relevant Factors:

Animal Not Caught or Mortally Wounded (NOTCAUGHT, Favors D)
Open Land vs Own Land (OPEN, Favors D; OWNLAND, Favors P)
Plaintiff Pursuing Livelihood (LIVELIHOOD, Favors P)
Defendant in Competition with Plaintifff (COMPETE, Favors D)

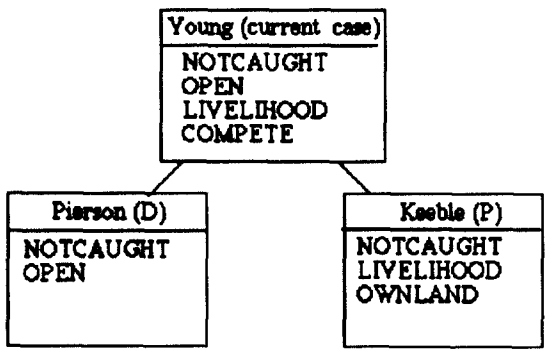

Figure 1. Factors and Case Analysis in Wild Animal Domain

Counterexample:

Keeble v. Hickeringill held for the plaintiff even though the plaintiff was seeking to capture wild animals and did not mortally wound or capture the animals.

==> Rebuttal for Defendant

Keeble v. Hickeringill is distinguishable because: In *Keeble* the plaintiff was conducting his business on his own land.

Keeble v. Hickeringill is also distinguishable because: In *Keeble* the defendant was acting maliciously while here the defendant was engaged in business competition.

Though accurately transcribing many law school class discussions the model is incomplete because at some point the student must answer the question - "which case should govern and why?". Even though attorneys wield their adversarial foils with considerable dexterity judges, when studying legal arguments, do not act as referees at an intellectual fencing match. Rather, judges make rules that significantly affect human lives and their decisions necessarily embody their views (or prejudices) as to which rules improve the quality of life in society. Therefore, lawyers, in addition to arguments based on factual distinctions, suggest to judges various "policy" arguments that should affect the decision. Here are some of "teleological" or "policy" arguments that the court may have considered in *Young*.[1]

ARGUMENT II:

==> Point for Defendant

You should apply the rule in *Pierson* because the uncertainty about what constitutes property rights to fish swimming in the open sea will cause endless controversy.

<== Response for Plaintiff

You should apply the rule in *Keeble* because it is important that people earn a living and the defendant has interfered with the plaintiff's right to make a living.

==> Rebuttal for Defendant

Unlike the defendant in *Keeble* this defendant defendant was not acting maliciously and was merely engaged in vigorous competition like the school master who merely sets up a competing school or the owner of adjoining land who also deploys decoys. Society benefits from such competition.

<== Surrebuttal for Plaintiff

Society tolerates vigorous competition but not unfair competition. The actions of the defendants will force the plaintiff to take wasteful actions to protect their catches when the defendants could be pursuing other fish which would increase the amount of fish available to consumers.

==> Surrebuttal for Defendant

Guidelines for determining whether competition among fishermen is fair or unfair should be left to the legislature otherwise there could be endless lawsuits attempting to establish what fisherman may or may not do.

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1 We have inferred from the reported opinions the policy arguments that were considered in *Young* because cases were argued orally, and written briefs are not available. Also, since opinions were delivered orally and transcribed by reporters the opinions tended to be rather short. Finally, common law judges used a form of verbal shorthand that embodied their policy determinations. As evidence that these kinds of arguments are routinely considered in law school classes see [Dukeminier & Krier 1988, pp. 8-20].

Lord Denman's opinion in *Young* indicates that he was moved by the plaintiff's argument but denied relief because the plaintiff had made a procedural error. Judge Patteson's concurring opinion in *Young* suggests that he was influenced by the thrust of the defendant's surrebuttal. It would appear that Judge Wightman's concurring opinion accepted the endless quarrels rationale.

3. An Assessment of Existing Systems

Current CBR models suffer from the same limitations as SHRDLU [Winograd 1972, pp. 8-11], a program that asks questions, makes statements and issues commands to a robot that arranges blocks of different sizes, shapes, and colors. One can tell SHRDLU that "I don't own anything which supports a pyramid" from which SHRDLU can report that "I don't own a box".

> ...although SHRDLU's answer to the question is quite correct, the system cannot be said to understand the meaning of "own" in any but a sophistic sense. SHRDLU's test of whether something is owned is simply whether it is tagged "owned". There is no intensional test of ownership, hence SHRDLU knows what it owns, but doesn't understand what it is to own something. [Simon 1977, p. 1064]

An analysis of the output of Karl Branting's sophisticated case-based reasoner, GREBE [Branting 1991], generated in response to the following hypothetical demonstrates the limitations of 'unintensional' symbolic manipulation.

> Joan and Donald were employed by the school district as teachers at a middle school and carpooled together. Each workday, the driver of the carpool was responsible for picking up some sandwiches on the way to work for both teachers to eat because there was no cafeteria at the school. Donald picked up Joan at her house and drove toward the school. Donald then deviated from the direct route to the school on his way to the sandwich shop. Before reaching the sandwich shop, Donald had an automobile accident in which Joan was injured. Does Joan have a claim for worker's compensation against the school district? [Branting 1991, p. 150]

GREBE retrieved three relevant cases. The first, *Janak v. Texas Employer's Ins. Co*, 381 S.W. 2d 1976 (1964) ("*Janak*"), involved an accident that occurred during a deviation from the direct route to an oil drilling site. The driver and the injured passenger worked on the drilling crew. The purpose of the deviation was to get ice to cool the crew's drinking water. In holding that the traveling was in the furtherance of employment, the Texas Supreme Court reasoned, in part, that the ice was "reasonably essential" for the drilling activities because of the extremely hot working conditions. *Janak* also decided that the passenger in the car pool would be deemed in course of his employment if the driver were in the course of his employment.

Second, *Vaughn v. Highlands Underwriters* ("*Vaughn*"), 445 S.W. 2d 234 (1969) held that where the

> employee was told by dispatcher to go get something to eat while his truck was being unloaded, and who would not have made trip in absence of such order, was in course and scope of his employment while traveling ...from place of his employment to the restaurant... [*Vaughn*, p.234].

Third, *American General Ins. v. Coleman* ("*Coleman*"), 303 S.W.370 (1957) which set forth the general rule that

> an injury incurred in the use of public streets or highways in going to and returning from the place of employment is not a compensable injury because not incurred in the course of the employment as required by ... Texas Statutes...[*Coleman*, p. 375]

From *Janak* GREBE concluded that Joan had the "stronger" argument. GREBE inferred that there is a strong argument that Joan's trip to the sandwich shop was in furtherance of her employment because she was a member of a carpool and her case was analogous to Janak's trip to obtain ice water which was held to have been in furtherance of his employment. To reach that conclusion, GREBE had to conclude that obtaining sandwiches was "reasonably essential" to employment because the court in *Janak* had concluded that obtaining the ice water was "reasonably essential" for oil drilling. But since the hypothetical did not specify whether food was necessary for teaching, GREBE then used *Vaughn* to support the proposition that food was reasonably essential to employment. GREBE then noted a difference between the hypothetical and *Janak* based on the fact that the temperature of the school was unrelated to the need for food. [Branting, pp. 151-52].

GREBE illustrates a sophisticated algorithm that triggered a plausible analysis of a complex legal problem. However, the last part of the analysis would seem odd to some skilled advocates because few judges would base their decision on the temperature of Joan's workplace. More to the point, an understanding of the underlying purposes of worker's compensation law would suggest to many practitioners that Joan has the weaker case.

The confluence of four 19th century judge-made rules made it very difficult for injured workers to collect

damages from their employers. First, the employer had to have acted negligently. Second, the injured worker had be free from contributory negligence. Third, the employee could not have voluntarily assumed the risk of injury. Finally, the employer was not responsible if the negligent acts were committed by another employee [Larson 1992, §4.30]. These rules were harsh because the United States did not (and still does not) have a broad social safety net so that most citizens had no medical coverage and no income protection when injured.

As part of a 20th century legislative compromise employers were denied these four defenses in exchange for workers' receiving a reduced amount of damages in all cases of injuries that occurred during the course of employment. But worker's compensation was not intended as a form of general social insurance. The costs of injuries to an employer's workers were seen as a cost of doing business and, therefore, should be born by the employer. Conversely, an employer should not have to bear the costs of injuries that were not work related [Larson 1992, §4.30].

Since legislators had no intention of requiring employers to insure against all injuries sustained by people who were employed judges navigate between a visceral desire to assist injured workers who may have little or no medical or disability insurance and their duty to avoid converting worker's compensation into a system of general social insurance. State judges are also aware that unduly increasing the cost of worker's compensation insurance may make their states' businesses less competitive.

When the language of the statute "sustained in the course of employment" is read in light of these purposes most cases are easily decided. If the worker slips at the factory and breaks his leg he is covered but if he breaks his leg while going down his front steps on the way to work he is not. But there exists a class of cases like injuries sustained while commuting that involve some elements of personal and business activity. In this class of case the worker shows a "but for" causation between his injury and work - but for my job I would not have been commuting to work and, therefore, would not have been at the place where the accident occurred. But it is almost uniformly conceded that workers compensation was not intended to cover workers injured during normal commuting [Larson, §15.11] because compensating so many workers would constitute a form of social insurance that unduly burdens employers.

The following lawyerlike argument that mirrors these policy concerns would convince most judges that the purpose of compensating injured employees rather than providing some form of general social insurance would NOT be furthered by permitting workers to recover for injuries sustained while buying their lunches on the way to work:

> To permit Joan to recover would logically require compensation for the worker who deviates from her route to go to the supermarket the night before to buy cold cuts and sandwich rolls. [See Larson, §§15.12(b)].

Texas case law is consistent with this policy analysis. In *Janak* the court stated,

> If the deviation... had been for the purpose of picking up tools essential to the drilling operation, the travel would clearly be impliedly directed by the employer. **On the other hand, if the deviation...had been for the purpose of permitting one or more of the crew members to buy a particular kind of hamburger for lunch, the travel would just as clearly not be impliedly directed by the employer** (emphasis supplied). [Janak, p. 182].

Vaughn, decided five years later, does not, as GREBE suggests, support Joan's case because the court in *Vaughn* went to great lengths to make clear that the employee could recover only because he made a trip that he would not otherwise have made **and the trip resulted from a direct request from the employer.** *Vaughn* follows the general principles set forth in *Coleman* that commuting injuries are not compensable unless the transportation is furnished by the employer or the transportation is paid for by the employer or the employee takes on a special mission for the employer or performs a service for her employer with the express or implied approval of the employer [*Coleman*, p. 375-76].

It has been suggested that Joan's case becomes stronger if the facts demonstrated that the school was located in a remote area similar to the drilling site in *Janak*.[2] We do not believe that the remoteness of the job site would necessarily control the result. To prevail, Joan must distinguish her or Donald's activities from the daily actions of the many thousands of Texas employees who pick up their lunches on their way to work. For example, her case becomes winnable if the fact that "the driver of the carpool **was responsible** for picking up some sandwiches " is interpreted to mean that her employer either expressly or implicitly requested her or Donald to pick up sandwiches.[3]

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[2] This suggestion was made by an anonymous reviewer of this paper.

[3] We do not argue that a Texas Court would not have ruled for Joan. Since the Texas court decided *Janak* in 1964 and *Vaughn* in 1969 several other state courts extended coverage to claimants in Joan's position. see *Hornyak v. Great A&P Tea Co.*, 305 A. 2d 65 (N.J. 1973). We only

To hold otherwise would permit recovery for an injury sustained while travelling to the supermarket the night before. Indeed, the Texas Court in *Employer's Casulty Co. v. Mary Jane Hutchinson* [4] recently reaffirmed this need to link the injured worker's activity to actions of the employers

> An injury received while using the public streets is compensable when the employee has undertaken a special mission at the direction of the employer or is performing a service in furtherance of the employer's business with the express or implied approval of the employer...

4. Modelling Teleological Concepts

To develop a "deep" model of legal purposes is one of the ultimate goals of the AI and Law field; however, we are not attempting to do that in this paper. Instead, we attempt to make our case-based reasoning system a little smarter by attaching some information about the purposes involved in its case knowledge base. To do this, we must consider what these purposes are, how they are related to each other in the domain of interest, and how they can be used within the framework of case-based legal argument.

Discovering the relevant legal purposes in a domain is the goal (along with finding the relevant authorities and factors) of a skillful legal researcher. By reading judicial opinions and consulting appropriate commentary, it is generally possible to understand what purposes the courts are trying to advance. Our approach to selecting purposes in a legal domain will be the same one used to select factors or "dimensions" [Rissland and Ashley 1987] in current legal CBR systems: that is, a knowledge engineering approach, where the human expert determines what concepts to include in a domain model. For the wild animal cases, the purposes we will discuss are those mentioned in Argument II above:

a. to define "possession" in a way that promotes certainty and reduces unnecessary disputes
b. to protect a person's livelihood from interference
c. to protect free enterprise and competition
d. for the judiciary to respect the powers of the legislature
e. protect rights of property owners
f. no property rights in resources found on public lands

For the worker's compensation cases the purposes are: to compensate injured workers, and to avoid over-burdening employers with claims not directly related to employment.

There are several kinds of relationships among legal purposes, which are illustrated in Figure 2:

a. the taxonomic relation (ISA) relates a general purpose, such as the achievement of certainty and predictability in the law, to a more specific exemplar, such as the achievement of certainty and predictability in the legal definition of possession of wild animals. The ISA relation also connects the purpose of encouraging useful enterprise to the more specific purpose of encouraging fox hunting.

b. the instrumental relation (INST) relates a general purpose to a purpose which contributes to it; for example, the goal of protecting a person's livelihood against interference has an instrumental relationship to the general purpose of encouraging useful enterprise.

c. A limitation relation (LIMIT) expresses the fact that one purpose may impose a limit on the pursuit of another purpose: for example, the purpose of protecting the public from obscenity imposes a limit on the purpose of protecting freedom of speech. In the current example, the purpose of preventing unfair competition imposes a limit on the purpose of protecting free enterprise and competition.

d. the opposing relation (OPP) is the most striking relationship among legal purposes: for each purpose advanced by one side of a legal case, there is a competing purpose which is advanced by the other side [Kennedy 1991, p. 101]. The fundamental adversarial structure of legal argument is often analyzed in terms of such competing social purposes.

Figure 2 shows three pairs of opposing goals:

i. certainty of legal rules competes with context sensitivity, which permits the encouragement of useful activity.

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maintain that any fair reading of the three Texas cases used by GREBE and the policies underlying those decisions do not support such a ruling. Indeed, the language of those cases supports a contrary ruling.

Our assessment of GREBE suggests the need to study methods of validating the performance of AI systems in the legal domain. One might present the problem for consideration by ten practitioners, half of whom represent workers and the other half who represent employers. Though a theoretical mechanism for validating a system in the legal domain, such a proposal would meet with resistance since many skilled lawyers would not respond wihout a rather complete file that included a client interview, statements of co-workers, statements of the employer, the medical records, maps of her route, etc. [See Peterson & Waterman 1985, pp. 642-653].

[4] 814 S.W.2d 539(Tx 1991) at 543.

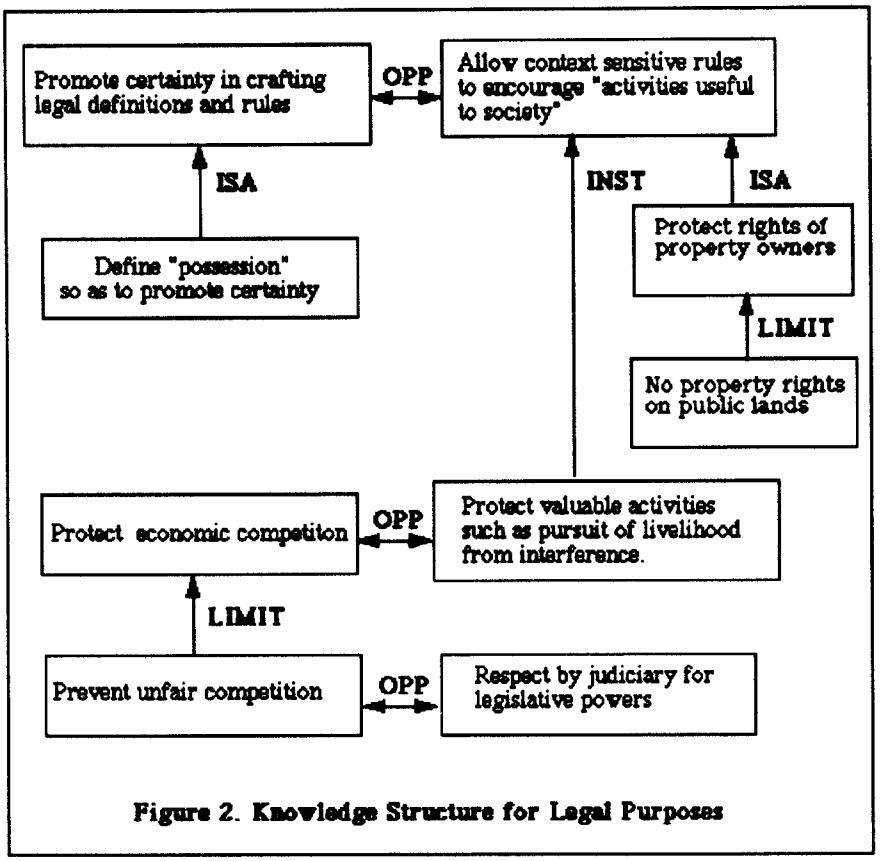


Figure 2. Knowledge Structure for Legal Purposes

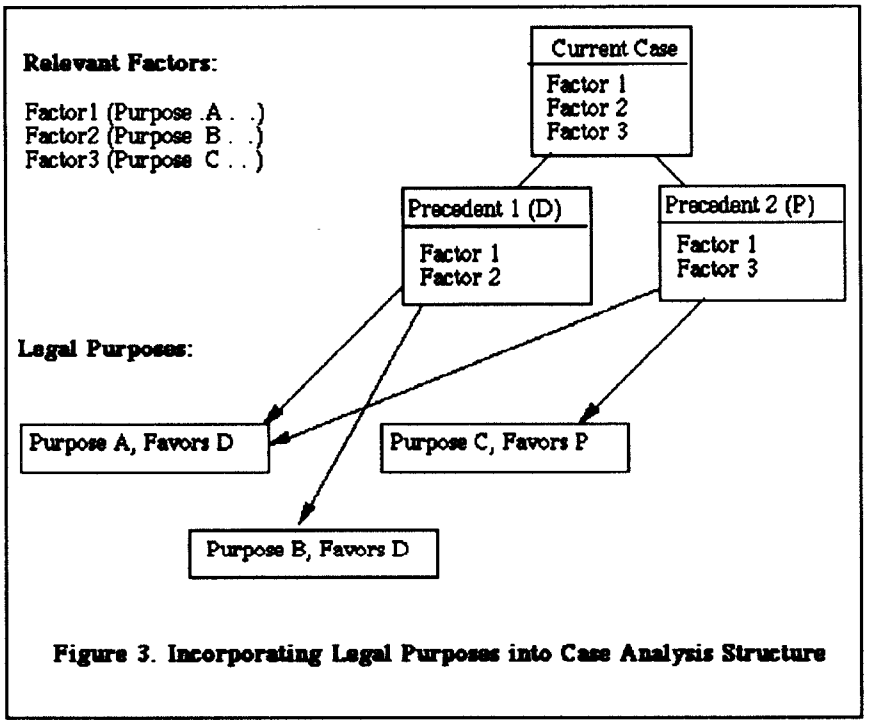


Figure 3. Incorporating Legal Purposes into Case Analysis Structure

ii. protection of livelihood competes with protection of economic competition.

iii. prevention of unfair competition by judicial decision competes with respect by the judiciary for the regulatory powers of the legislature.

Note that the structure of legal purposes shown in Figure 2 (and legal argument II, which is derived from the *Young* opinion) leads to argument points that are not obviously related to the earlier wild animal cases -- points involving unfair competition and judicial/legislative competency. Teleological knowledge allows a legal argument system to go beyond factual similarities to include these broader jurisprudential concepts.

There are several approaches that might be used to incorporate legal purposes into the current framework of legal CBR systems, as exemplified by the HYPO system [Ashley 1990]. One could create knowledge structures "that package the reasoning underlying explanations [of cases]." [Schank & Leake] Such explanations might constitute a slot in a case frame and these slots could be indexed in numerous ways to retrieve both similar and analogous cases. So the explanation of *Pierson v. Post* might be "not possession to avoid unnecessary disputes" while *Keeble v. Hickeringill* might be "possession to protect the plaintiff's livelihood". Such a scheme would have problems since the explanations would need to be "unpacked" when only some of the dimensions of the current case match the prior case, and then re-combined in a system such as GREBE which is capable of combining partial arguments from several cases.

We have chosen a slightly different scheme, illustrated in Figure 3, which builds on the central role of factors or "dimensions" in legal CBR systems. In current systems, each factor indicates whether it favors the plaintiff or defendant. One limitation of current CBR systems is the lack of explanatory power as to why a factor favors the plaintiff or defendant, and why that factor is considered legally relevant. In our scheme, each factor indicates the legal purposes which it advances, and each legal purpose in turn specifies whether it favors the plaintiff or defendant. Finally, each legal purpose is linked to its opposite, so that the system "knows" when purpose A is advanced, that purpose A' is generally defeated.

Several forms of argument can be generated using this knowledge structure. In a case such as *Young*, an argument can be generated that resembles Argument II more than Argument I. In Argument I, the defendant points out that the fish had not been captured or mortally wounded, just as in *Pierson*. However, with the structure

proposed here (illustrated for the wild animals domain in Figure 4), an argument can be created whose first step might be:

==> Point for Defendant

This case is like *Pierson v. Post*, since plaintiff did not capture or mortally wound the fish. It is important to define possession in a way that promotes certainty and avoids unnecessary disputes.
<== Response for Plaintiff

This case can be distinguished from *Pierson v. Post,* since in that case the plaintiff did not make his living from the hunting of wild animals.

This case is more like *Keeble v. Hickeringill,* since in that case plaintiff was prevented from pursuing his livelihood. It is important to protect citizens from interference with their pursuit of a livelihood.

==> Rebuttal for Defendant

This case can be distinguished from *Keeble*, since in Keeble the interference was malicious, while in this case the defendant was in competition with plaintiff. The law should protect free enterprise and competition.

In distinguishing a case (as the plaintiff in *Young* would attempt to do), the adversarial link from "certainty" to "encourage useful enterprise" can be used to help the case-based reasoner create teleological arguments. For example, the plaintiff in *Young* might bolster his response by stressing the importance of fishing as a more useful activity than fox hunting:

<== Response for Plaintiff (additional point)

If fishermen who spread their nets must bear the additional risk that anyone can come along and take the fish out of the net, this will hurt our economy. Fishing will become such a risky occupation that people will avoid it. The entire commercial fishing industry may be at risk.

The limitations of this scheme are several: first, the reasons for a rule may change. If society were to implement adequate insurance coverage through no-fault automobile insurance, universal health care, and universal disability insurance then plaintiffs may have difficulty winning cases similar to *Janak* and *Vaughn*.

Second, attorneys and courts perceive and express purposes at varying levels of abstraction. In the hypothetical case of Joan, although the precedents suggest that merely buying lunch on the way to work would not be recognized as a service for the employer, it is possible that a court would object to employers who fail to provide amenities (including cafeterias) for their employees, and would find in favor of Joan in order to advance that purpose.
We concede that our selection of the relevant "policies" or "purposes" for inclusion in the case-based reasoner represents an arbitrary judgment on the level to which we elevated the teleological

abstractions. An advocate for the defendant in *Young v. Hitchens* who believed that a judge would be persuaded by arguments drawn from the law and economics movement might argue

==> Point for Defendant

The defendant should win because this type of competition will encourage the most efficient methods of trapping fish.

Or believing that a judge would be influenced by arugments attributable to critical legal theorists the attorney for the defendant might argue

== Point for Defendant

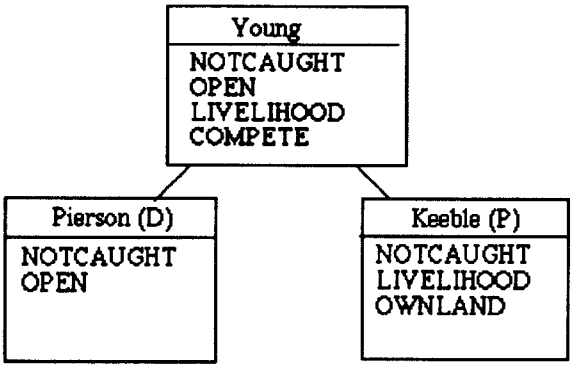
The defendant should win because protecting the plaintiff is protecting established business interests at the expense of smaller entrepreneurs.

Though arbitrary and incomplete our proposed arsenal of teleological arguments more closely approximates real world advocacy in common law jurisdictions. Granted, there is no ineluctable limit to the levels of abstraction that one could incorporate into a case-based reasoner so we can not replicate the full range of argument moves found in the arsenal of a truly gifted advocate. Nonetheless, we anticipate that case-based reasoners that incorporate teleological arguments will prove more useful to less skilled advocates or legal educators desirious of enhancing the advocacy skills of their students [Ashley & Aleven 1991].

Relevant Factors:

Animal Not Caught or Mortally Wounded (NOTCAUGHT)
Purposes Advanced: Define Possession to Promote Certainty

Plaintiff Hunting on Own/Open Land (OWN/OPEN)
Purposes Advanced: Protect Property Rights/No property rights on public land
Plaintiff Pursuing Livelihood (LIVELIHOOD)
Purposes Advanced: Protect Valuable Activities from Interference)
Defendant in Competition with Plaintifff (COMPETE)
Purposes Advanced: Protect Free Enterprise and Competition



Legal Purposes:

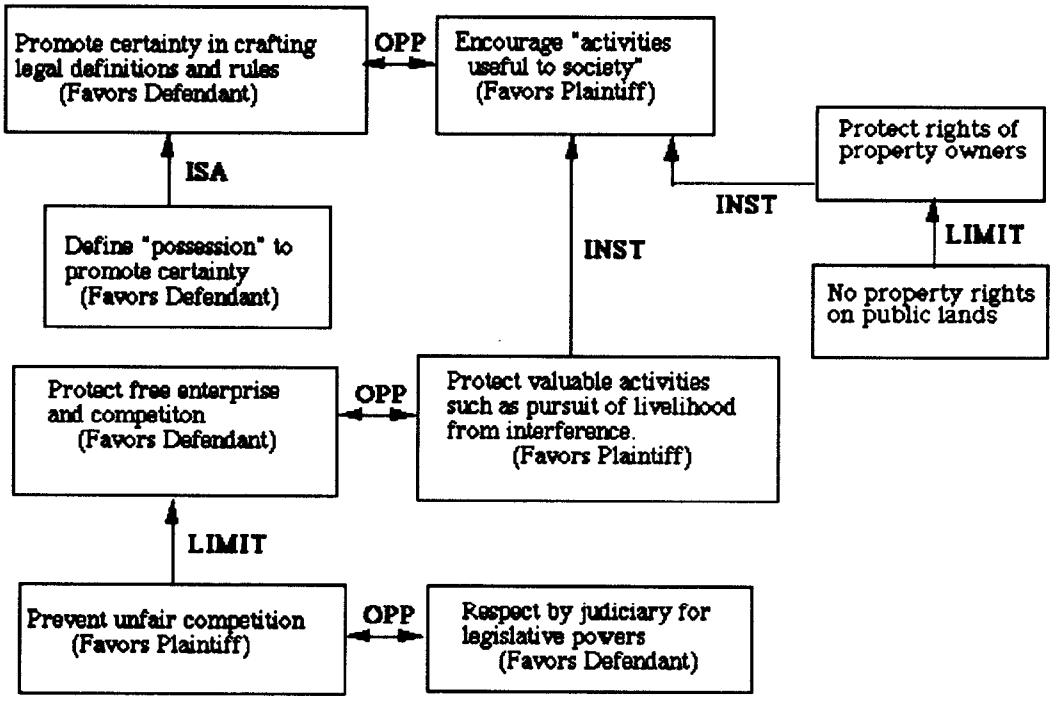


Figure 4. Teleological Analysis of Wild Animal Cases

5. Conclusion

We have argued that the purposes of legal rules are an important component of legal argument, and have begun to explore ways of representing such purposes in a case-based reasoning system. We have shown how one representation scheme for legal purposes could be used to make legal arguments more realistic. The representation suggested for legal purposes raises many more questions than it answers -- questions that ought to be the subject of much more research by the AI and Law community.

6. References

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