An Advisory System for Pro Se Protection Order Applicants

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Abstract

Pro se litigants constitute a growing burden to the judiciary. Advisory systems designed to help litigants understand the available legal remedies and satisfy the substantive and procedural requirements to obtain those remedies have the potential to reduce this burden. This paper presents a four-component model of advisory systems for pro se litigants. This model was implemented in the Protection Order Advisory (POA), an advisory system for pro se Protection Order applicants. POA illustrates how existing inference, document-drafting, and interface-design techniques can be used to construct advisory systems for pro se litigants in a wide range of legal domains for which (1) determining whether a prima facie case is satisfied does not require open-textured reasoning, and (2) the documents required to initiate an action are characterized by homogeneity and simple structure.

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1 Introduction

Increasing numbers of litigants represent themselves in court. This swelling tide of pro se[1] litigants constitutes a growing burden to the judiciary. Advisory systems are a promising technology to reduce this burden by helping these litigants both to understand the legal remedies available to them and to satisfy the substantive and procedural requirements for those remedies.

Section 2 of this paper describes the challenge presented to the courts by pro se litigants and the key services these litigants need. A model for computer systems intended to provide these services is proposed in Section 3. Section 4 then describes the development and functionality of the Protection Order Advisor (POA), an advisory system for pro se Protection Order applicants, a representative class of pro se litigants.

2 The Challenge of Pro Se Litigants

Recent years have seen a dramatic increase in the number of pro se litigants in the United States, particularly in domestic relation cases. For example, a recent study conducted for the American Bar Association in the Superior Court of Maricopa County, Arizona, showed that at least one of the parties was self-represented in over 88 percent of domestic relation cases and both parties were self-represented in 52 percent of the cases. There have also been significant increases in pro se litigants non-domestic cases, particularly tort and other civil cases, and in federal criminal appeals (Goldschmidt et al., 1998).

Several factors appear to be responsible for this growth in pro se litigation. First, there is a shortfall in legal services for poor persons in the United States (Quatrevaux, 1996). Domestic abuse victims are particularly likely to have few resources and little opportunity to obtain an attorney. An equally important factor, however, is the consumer movement. Books, document kits, computerized forms, and other legal materials are increasingly available on the Internet for consumers who feel that reasonably educated persons should be capable of handling their own legal problems. The relatively high education level of pro se litigants—the most common level of education for pro se litigants is 1–3 years of college—attests to choice, rather than necessity, as the motivation for many pro se litigants (Goldschmidt et al., 1998) at 12.

The growing ranks of pro se litigants represent a challenge to the courts because these litigants typically require much more assistance from both court staff and judges than do attorneys. Pro se litigants typically know little about the substantive requirements for the relief that they seek, the procedures that must be followed to establish that these substantive requirements have been met, or the documents required to initiate the legal procedures. As a result, pro se litigants frequently present staff and judges with a dilemma: providing too much help can constitute unauthorized practice of law (for court staff) or bias (for judges), but providing too little help can effectively deny a pro se litigant access to the courts.

Court staff are permitted to provide "legal information," such as what forms are required to initiate a given action. However, the boundary between permissible "legal information" and prohibited "legal advice" is unclear in most jurisdictions. Court staff may therefore be torn between a desire to help an inexperienced layperson and the need to avoid unauthorized practice of law that could subject them to legal or criminal liability. This conflict can be particularly acute in the case of pro se domestic violence victims, whose physical safety is often in jeopardy.

Judges are subject to an analogous conflict. Judges have no obligation to perform the functions for a pro se litigant that would normally be performed by a litigant's attorney. Indeed, judges have an obligation of impartiality that proscribes them from helping one party more than another. However, in some cases a judge's failure to assist a pro se litigant would result in the litigant's inability to assert valid claims. Judges may feel very uncomfortable when it appears that a different legal result would occur were a pro se litigant to take appropriate action (Goldschmidt et al., 1998) at 53.

A long tradition of self-representation within the Anglo-American legal system limits the ability of courts to restrict pro se litigants' access to the courts. The origins of the right to self-representation in the English common-law tradition stretch back to the Magna Carta (1215). In the United States, the right of self-representation is embodied in several different constitutional principles, including the privileges and immunities clause of the United States Constitution (Const. Art. 4, §2), the First Amendment, the due process clause of the Fourteenth Amendment, and the equal protection clause of the Fourteenth Amendment (Goldschmidt et al., 1998) at 19–24.

In summary, pro se litigants are burdensome to courts because they typically lack the information necessary to assert their claims effectively and because providing this information is not consistent with the institutional expectations of court staff and judges. The next section argues that advisory systems can function as an alternative source of this information.

3 Advisory Systems for Pro Se Litigants

An *advisory system* is a computer system intended to provide specialized information to a non-specialist user. Four key tasks for an advisory system for pro se litigants can be distinguished:

1. Informing the user of the available forms of legal relief.
2. Determining whether the user can make a prima facie showing of the substantive requirements for some form of available legal relief.
3. Informing the user of the procedural requirements for the forms of relief for which a prima facie case can be established.
4. Assisting the user in drafting any documents necessary to initiate the action.

These tasks differ greatly in their information-processing requirements. Task 2 is a form of *legal analysis*, the process of determining whether a legal conclusion follows from a given set of facts (Branting, 1999) at 4–6. Legal analysis requires a representation of the *legal warrants*, e.g., rules or precedents, that can justify legal conclusions. A complete model of legal analysis requires some method of modeling the *open texture* of legal concepts (Hart, 1961), such as case-based reasoning (Ashley, 1993) or competing rule-based arguments (Bench-Capon and Sergot, 1988).

Advisory systems for attorneys are, arguably, useful only to the extent that they provide both the arguments for and against open-textured legal conclusions and the legal authorities supporting these arguments. Pro se users, by contrast, may find complex, conflicting arguments at best unnecessary and at worst confusing. Such users instead need simply to know whether they have a tenable, prima facie case. Simple rule-based reasoning systems are adequate for analysis of routine cases not involving open-textured reasoning (Branting, 1999) at 146–147. Such systems are therefore adequate for

Task 2 in legal domains in which satisfaction of a prima facie case can be determined without open-textured reasoning.

Task 4 is an instance of *document drafting*, a configuration task that entails selecting and arranging textual elements to satisfy the drafter's legal goals and the stylistic constraints applicable to the document genre (Lauritsen, 1993; Gordon, 1989; Branting et al., 1998). The most appropriate approach to automated document drafting depends on the complexity and variability of the documents and the importance to the user of understanding the structure and content of the document. *Template-based* approaches to document drafting are suitable when document complexity and variability and the need for explanation are all low. *Discourse-based* approaches, by contrast, are better suited when documents are complex or highly variable or if users require explanations of document structure and content (Branting, 1998).

In advisory systems for pro se litigants, two factors make template-based document drafting techniques more appropriate than the alternative discourse-based techniques. First, the initiating documents (e.g., petitions or complaints) in the legal domains popular with pro se litigants (e.g., divorce, domestic violence) are typically simple and homogeneous. Second, pro se litigants (in contrast to domain experts, such as attorneys) do not generally require an elaborate explanation of the structure and content of the initiating document. Thus, discourse-based drafting techniques, which require much greater development resources than template-based techniques, are probably seldom necessary.

Tasks 1 and 3—informing the user of the forms of relief available and the procedural requirements for the forms of relief for which a prima facie case can be made—are far simpler. Prospective litigants typically have relatively specific goals that they wish to achieve through legal action. They therefore need only details of the specific forms of legal relief relevant to these goals. For example, a married couple seeking an amicable divorce typically have a clear idea of their goals—dissolving their marriage and dividing their assets—and need to know only what legal actions can achieve those goals and what procedures are required to execute those actions. Similarly, a domestic violence victim typically has a clear goal—enlisting the police in keeping an abusive domestic partner away—and needs only to know what legal action will achieve this goal and what procedures are required for this action.

There are a number of different possible approaches to "informing" tasks, such as Tasks 1 and 3, varying in their balance between the system's and the user's control of the presentation of information. At one extreme are tutorial approaches, under which the system controls the order and pace of information presentation, possibly based on a dynamic user model (Anderson et al., 1990). At the other extreme are text or hypertext systems, in which access to information is under the control of the user with little or no guidance from the system. The most effective approach is often a hybrid or "mixed initiative" system that permits the user to select the most appropriate balance between guidance from the system and freedom for the user (Horvitz, 1999).

The proposed model for advisory systems for pro se litigants consists of 4 modules, corresponding to the 4 tasks set forth above. First, the user is informed about the forms of legal relief relevant to the user's goals through some mixture of tutorial, textual, and mixed-initiative techniques. Second, a rule-based legal analysis component determines whether the user can make a prima facie showing that the substantive requirements for some form of legal relief are established. The rule-based component elicits the facts relevant to the applicable legal rules from the user.

Since a rule-based legal analysis systems generally have limited capacity for reasoning about non-routine "hard cases" (Gardner, 1987), the legal analysis component must qualify its advice with disclaimers stating that the analysis is tentative, that the user's entitlement to legal relief depends on a judge's decision rather than on the analysis by the program, and that the user should seek the advice of an attorney to get a more complete legal analysis.

The third module should inform the user of the required procedural steps, again through some mixture of tutorial, textual, and mixed-initiative techniques. Finally, the program should use template-based techniques to draft the petition, complaint, or other documents needed to initiate the legal action, eliciting any necessary facts from the user.

Each of these components can be implemented using existing computational techniques. Thus, advisory systems for pro se litigants are quite feasible for a wide range of legal domains in which (1) determining existence of whether a prima facie case does not require open-textured reasoning, and (2) the documents required to initiate an action are characterized by homogeneity and simple structure.

4 The Protection Order Advisor

4.1 Background

The Protection Order Advisor (POA) is an advisory system for pro se protection order applicants developed in collaboration with the Idaho Supreme Court. POA had its genesis in the decision by the Idaho Supreme Court Technology Committee to fund a demonstration project to evaluate the applicability of Artificial Intelligence (AI) to judicial administration. Several different domains for a demonstration project were considered, including sentencing, pre-trial release, child support, and protection order applications.

The Technology Committee ultimately selected protection order application assistance, even though the substantive legal rules governing protection orders are relatively simple, because the inability to offer advice to pro se protection order applicants was distressing to staff in Idaho courts. The Technology Committee felt that this distress could be alleviated by making PCs with an advisory program available in district court lobbies. This would permit protection order applicants to obtain answers to many of their questions about whether they satisfy the requirements for a protection order and to draft a petition. This would relieve court staff of the painful choice between providing unauthorized legal advise and ignoring the needs of domestic violence victims.

4.2 The Governing Statute

The statute governing protection orders in Idaho is the Domestic Violence Crime Prevention Act, Idaho Statutes §39-6301 et seq. (1988 as amended). The Idaho Act's statement of purpose, at §39-6302, declares that:

> It is the intent of the legislature to expand the ability of the courts to assist victims by providing a legal means for victims of domestic violence to seek protection orders to prevent such further incidents of abuse.

The Idaho act defines domestic violence as "physical injury, sexual abuse or forced imprisonment or threat thereof of a family or household member." Idaho Statute §39-6303(1). The Act defines "family or household member" to include "spouses, former spouses, persons related by blood or marriage, persons who reside or have resided together, and persons who have a child in common regardless of whether they have been married or have lived together at any time.” Idaho Statute §39-6303(2).

The Act’s mechanism for protecting domestic violence victims is an “action for protection” initiated by the filing of a Petition for a Protection Order under §39-6304 of the Act. The Petition is based on a sworn affidavit and is filed in the magistrate’s division of the district court. The petition must allege that the person seeking relief (the “petitioner”) or a family or household member is a victim of domestic violence by the person against whom a protection order is sought (the “respondent”).

The forms of relief available under the Act include restraining the respondent from committing acts of domestic violence, excluding the respondent from the dwelling shared by the parties, temporary custody of children, treatment or counseling, and any other form of relief that the court deems necessary. The order restraining the respondent from committing acts of domestic violence often includes a “no contact” order prohibiting the respondent from contact with the petitioner or other family members. A respondent who violates the terms of a protection order is subject to arrest.

A protection order may be granted for a fixed period of up to three months and can be renewed for additional terms of up to one year. To facilitate access by petitioners with few resources, no fees are charged for protection order proceedings. A standard form for protection order petitions has been adopted by the Idaho Supreme Court.

4.3 The Development Cycle

Software development often entails a lengthy dialogue between the intended user and the system developer during which the user clarifies and elaborates the desired behavior of the program and the developer explains and demonstrates the available computational resources. This dialogue is particularly important in the development of legal AI systems because judges, attorneys, and other members of the legal community seldom have a clear understanding of AI technology, and AI developers often have little understanding of the nature of legal problems solving.

POA was developed in a series of three iterations. After each iteration, one or more family law judges, domestic violence advocates, and judicial administrators evaluated the revised program and provided feedback about refinements and modifications desired for the next version. Occasionally, differences in goals and perspectives among judges, domestic violence advocates, and administrators led to conflicting recommendations. The design of POA reflects a compromise among these conflicts.

Several noteworthy design issues emerged during the development process. The first concerned the tenor of the program's language. The initial version of POA used language on screens and in its "help" facility that was couched in terminology associated with domestic violence advocacy: the petitioner was described as a "target" of violence, and the respondent was described as "the person who committed or threatened violence." The judges strongly objected to this language on the grounds that courts must maintain strict neutrality. The neutral terms "petitioner" and "respondent" were therefore substituted for their more emotionally charged alternatives. Similarly, requests to include examples of narratives that clearly satisfy the requirements for a protection order in POA's help facility were rejected by the court on the grounds that they might bias a petitioner's own description.

A second design issue concerned testing for malformed or inconsistent data. The court felt that it was desirable for the program to prevent spelling and punctuation errors whenever possible. As described below, POA automatically capitalizes the first letter of proper names and elicits many data items through selection lists or "combo boxes" that give the user the option of selecting from a list or entering a new value, reducing the user's opportunity for spelling errors. POA detects obvious logical inconsistencies, such as a petitioner stating both that the petitioner is both married to and divorced from the respondent, and gives the user a warning that the data seems to contain a contradiction. However, the court decided against having the program entirely preclude such inconsistencies on the grounds that inconsistencies provide information about the credibility of the petitioner. Thus, POA permits the user to leave inconsistencies uncorrected.

Finally, there was an issue concerning treatment of the data gathered by the program after the user's consultation is completed. If the judge issues a protection order, the contents of the order will duplicate much of the material in the petition. Ideally, this information should be retained and reused by a document-drafting program to automatically draft the order. However, data residing on a PC in a public place, such as a court lobby, has little security. Conceivably, an abusive domestic partner or a third party could discover the existence and contents of a petition by searching the disk drive of the PC.

The initial solution was to make the program impossible to exit from without a password known only to the administrative staff. This was at best only an incomplete solution, however, since a determined intruder could circumvent this measure by restarting the computer. Moreover, some PCs running POA are used by the court to run other programs as well during the course of a typical day. The current version of POA therefore simply deletes all data after the documents have been printed at the conclusion of the consultation. An alternative to this approach is to put the program in a secure kiosk that prevents users from accessing the disk drive, interrupting the program, or restarting the computer.

4.4 Program Functionality

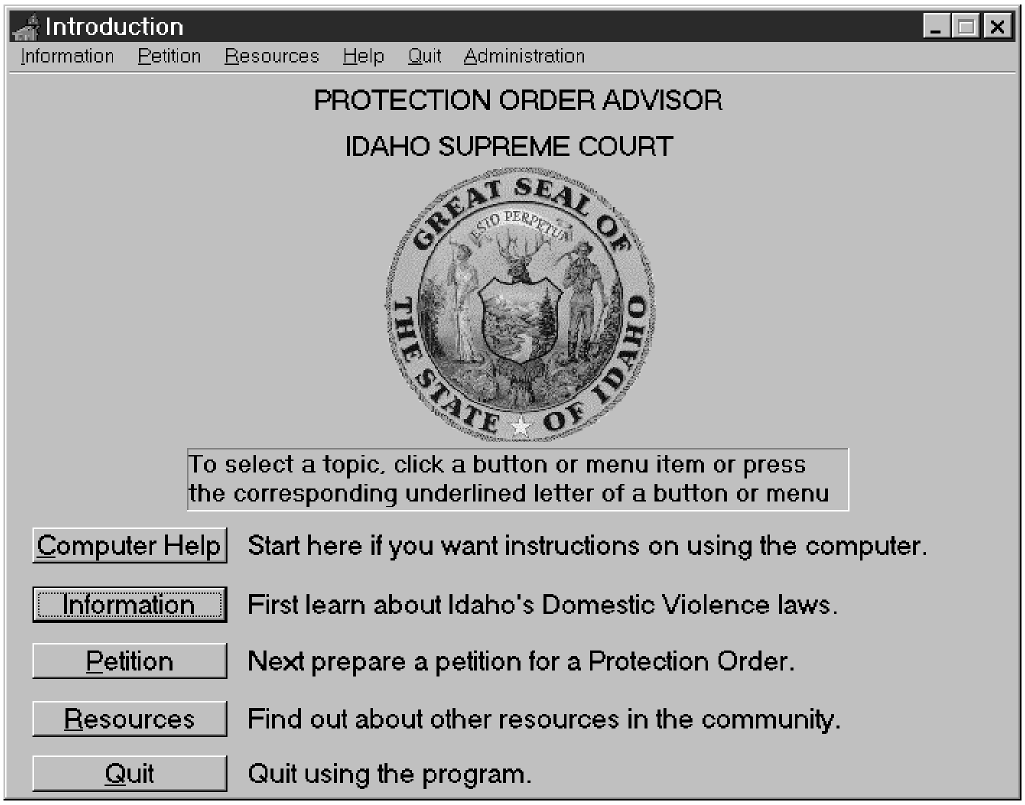
POA starts with a splash screen displaying the Seal of the State of Idaho and an image of Blind Justice. When the user clicks on this screen, the user is presented with a standard liability waiver, followed by an introductory screen (shown in Figure 1) displaying five options: "Computer Help," "Information," "Petition," "Resources," and "Quit."

4.4.1 Centralized Help

"Computer Help," "Information," and "Resources" consist, respectively, of information about how to use the computer, the requirements and procedure for obtaining a protection order, and alternative resources in the community for help with domestic violence. This information is presented as hypertext, so that the user can get any additional information needed about terms appearing in any given explanation.

To simplify maintenance and to permit help information to be easily customized for individual sites, all help information is centralized in a single hypertext file. This file can be edited by a site administrator using MS Word, Word Perfect, or other RichTextFormat-enabled editors. Selecting "Computer Help," "Information," or "Resources" leads to the corresponding portion of the help file. Similarly, every screen that appears during the consultation has hyperlinks from terms that the user might not understand into the help file. The help file contains a hyperlinked table of contents and a glossary and can be reached from a button on every screen. Figure 2 shows the "Topics" portion of the help file. Each of the topics shown is hyperlinked to a later portion of the file that explains the topic.

Figure 1: POA's introduction screen.

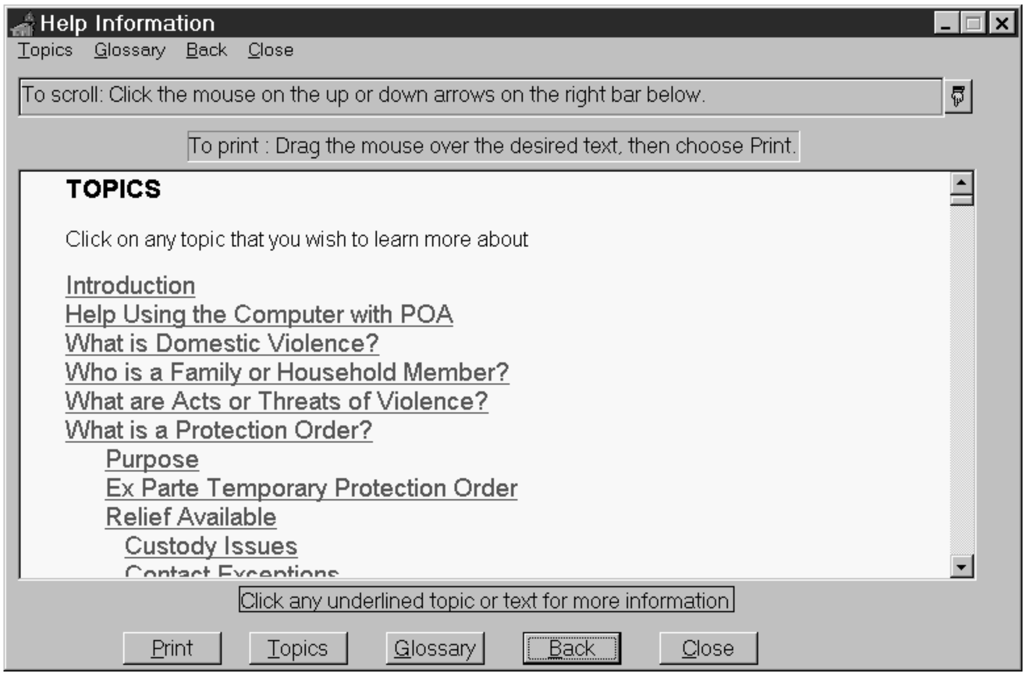


4.4.2 Consultation

When the user selects "Petition," POA performs a three-phase consultation. In the first phase, POA elicits information from the user to determine whether there is a prima facie case for a protection order. If a prima facie case is established, POA enters the second phase, elicitation of the data needed for the petition and "service information sheet," a document containing information needed by the Sheriff to serve the petition on the respondent. In the final phase, the templates for the petition and service information sheet are instantiated with the data gathered in the second phase.

Every screen appearing during the consultation has a "Back" button that the user can use to return to earlier screens to correct or change data entered previously. After changing data in a screen, the user can move forward through subsequent screens to the screen from which the user began backing

Figure 2: POA's help file topics.

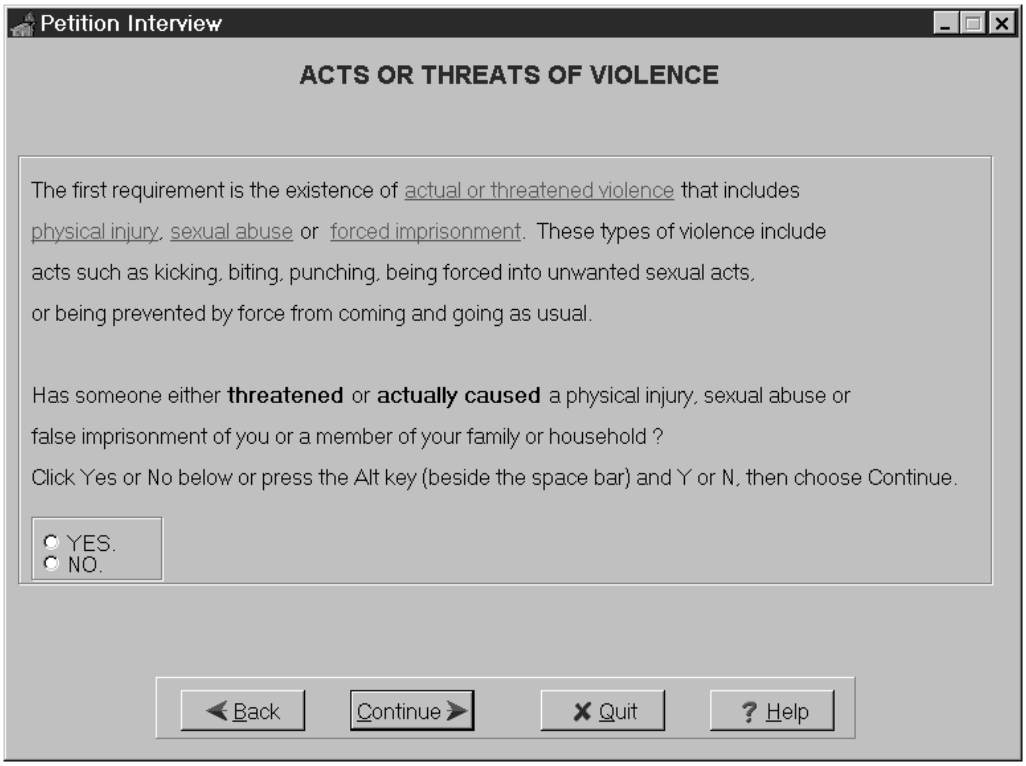


up without having to reenter the data in the intervening screens.

The first phase of the consultation—determining whether there is a prima facie case—starts with a series of screens explaining the nature of domestic violence and the requirements for a protection order. POA then asks, in successive screens, whether the two key requirements are satisfied: actual or threatened violence by the respondent against the petitioner or members of the petitioner's family or household; and a domestic relation between the respondent and the petitioner. The screen asking the user whether there were acts or threats of violence is shown in Figure 3. The key phrases "actual or threatened violence," "physical injury," "sexual abuse," and "forced imprisonment" are hyperlinked into the help file.

If the user's response indicates that either requirement for a protection order is apparently unsatisfied, a screen appears stating that the requirements are not met and suggesting that the user review the responses in previous screens to make sure that they are correct. If the requirements for a prima facie case appear to be satisfied, POA enters the second phase, gathering information for the petition and the service information sheet.

Figure 3: The screen asking whether the violence requirement for a protection order is satisfied.

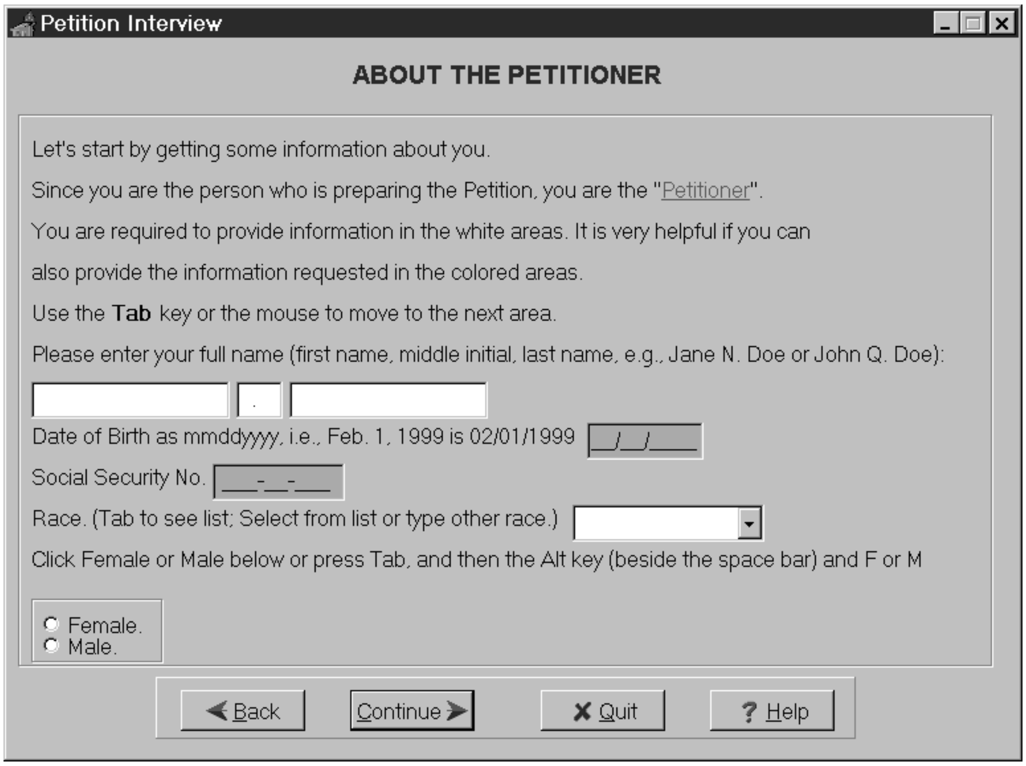


A typical screen in in the second phase (data elicitation) is shown in Figure 4. Entries in the "Name" fields are automatically capitalized. The "Race" field is a "combo-box," that can be filled by typing an entry or by selecting an element from a drop-down list. Tinted fields, such as Social Security Number, are optional, whereas all untinted fields are required. POA does not permit the user to move to the next screen until values have been entered for all required fields.

When all information required for the forms has been elicited, POA enters the third phase in which the petition and service information sheet are drafted and displayed to the user. Figure 5 shows the screen containing a petition. The petition and service information sheet are not directly editable by the user, but the user can return to previous screens and correct any erroneous information.

When possible, POA assists the user in completing screens by inferring

Figure 4: A data elicitation screen.

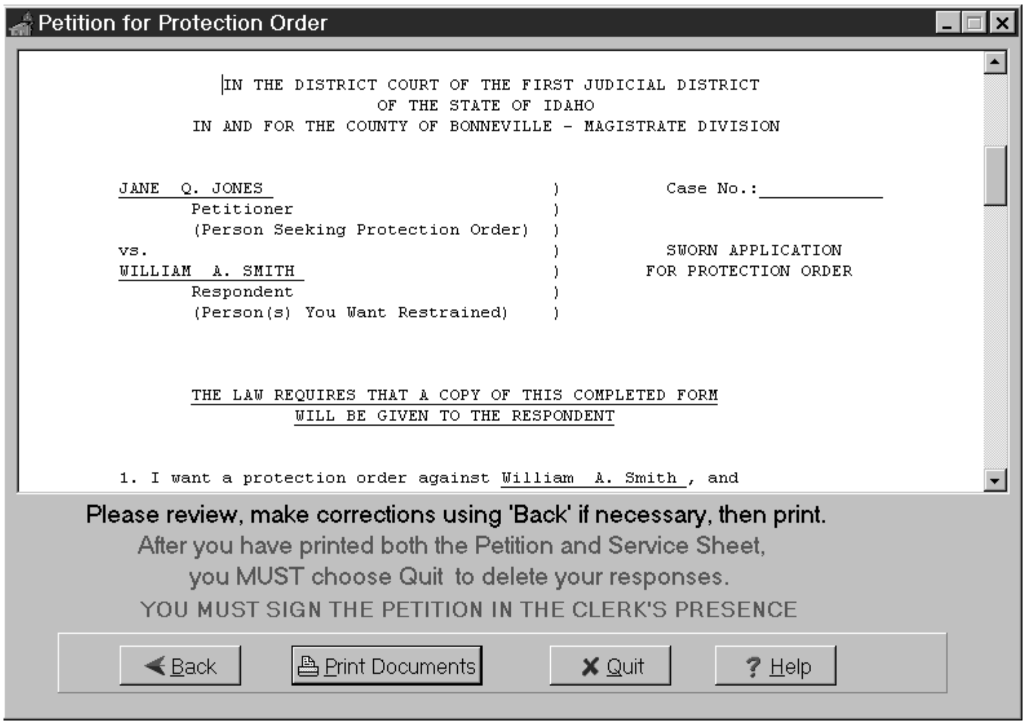


likely values for data fields, which the user can then accept or overwrite. For example, if the user states that the respondent and petitioner share the same house, the data fields for respondent's address default to the same value as petitioner's address.

4.5 Implementation

POA's top-level control strategy is the standard backward-chaining, depth-first search strategy used in first-generation expert systems (Buchanan and Shortliffe, 1984), implemented in Prolog. There are three reasons for the use of Prolog for implementation of POA's control strategy. First, backward-chaining, depth-first search is built-in to Prolog, simplifying programming. Second, Prolog's declarative representation of rules as ASCII text means that the program and its data can be updated and maintained by site administrators without recompilation. Finally, Prolog's built-in unification algorithm

Figure 5: The Petition for Protection Order drafted by POA.



(Russell and Norvig, 1995) greatly simplifies implementation of the document drafting component of the program.

The characteristics of Prolog that make it advantageous for rule-based reasoning and document drafting—declarative knowledge representation and built-in search strategy and unifier—are not helpful for interface implementation. Indeed, the event-driven character of modern windows interfaces has little congruence with Prolog's logical, declarative framework. A separate software tool, Borland Delphi, was therefore chosen for the interface. The Prolog development environment selected for POA—Amzi! Prolog—includes "extended predicates" for communicating with Delphi or other interface software.

To control the presentation of screens to the user, a predicate is associated with each screen. Each of these predicates is a goal in the consultation. When the user enters the data required for a screen and clicks "Continue," POA tests that all required information has been entered. If the user has provided all the required information, the predicate corresponding to the screen is asserted into the database (along with the data itself).

The association of screens with predicates greatly simplifies implementation of the "Back" button. When the user selects "Back," the most recent screen predicate in the database is unasserted and the consultation restarted. Each goal corresponding to a screen predicate prior to the most recent screen is already satisfied and therefore generates no screen. However, the goal corresponding to the most recent screen is unsatisfied. POA therefore redisplays the last screen with the data values entered by the user appearing as defaults. This pattern is repeated with each additional invocation of "Back." When the user clicks "Continue" to move forward to the screen from which the user began backing up, each intervening screen appears with the values previously entered as defaults. Since all necessary values are already present, the user need only press "Continue" again to reassert the screen predicate and move to the next screen. For a more detailed description of the implementation of POA, see (Hanna, 1998).

5 Discussion

POA is currently in use in three Idaho counties and in several Idaho domestic violence advocacy offices. Although no formal evaluation of its use has yet been completed, the informal assessment by the administrative staff is that a significant proportion of pro se protection order applicants successfully use the program. Unfortunately, many users are apparently reluctant to use POA. This may reflect the fact that many protection order applicants have little experience with computers and may find it difficult to use even the most user-friendly PC-based system. In addition, many applicants have Spanish as their first language, and POA is current available only with an English interface.

POA illustrates both how advisory systems for pro se litigants can be constructed using well-understood AI and interface-design techniques. However, POA also demonstrates how the success of such advisory programs tends to be more dependent on carefully tailoring the interface to potentially users than on the technical issues of knowledge representation and algorithmic design.

Several enhancements of POA's design should be considered by builders of advisory systems for pro se litigants. First, it is very desirable to have a choice of languages for the program. In the U.S., Spanish and English should both be available. Adding a choice of language would add only a trivial step to the design of the program, although it would entail development and maintenance of parallel help files and screen captions. Second, optional natural language output would make such programs easier to user, particularly for users who are inexperienced with or anxious about computers. However, ordering and control of speech output presents some issues not present in purely text-based expert systems (Maybury and Wahlster, 1998). Third, the most efficient delivery of advisory systems for pro se litigants may in the long run be the Internet. Use of the Internet simplifies system maintenance because the program and all accompanying files can be centralized in a single location. The Internet also simplifies delivery, freeing users from the necessity of coming to one of a small number of specific locations to use the program. PCs or kiosks running the program could still be placed in court lobbies or other public places.

6 Conclusion

This paper has presented a four-component model of advisory systems for pro se litigants and has shown how that model was implemented in POA. POA illustrates how existing inference, document-drafting, and interface-design techniques can be used to construct advisory systems for pro se litigants in a wide range of legal domains for which (1) determining whether a prima facie case is satisfied does not require open-textured reasoning, and (2) the documents required to initiate an action are characterized by homogeneity and simple structure. Improvements in interface design, including multi-language text, speech output, and web delivery, have potential to greatly increase the acceptance of advisory systems for pro se litigants.

Acknowledgments

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Footnotes

1. Pro se means "for himself; in his own behalf; in person." An alternative term, "pro per," is an abbreviation of "in propria persona," meaning "in one's own proper person." BLACK'S LAW DICTIONARY 712, 1099 (5th ed.) 1979.

References

Anderson, J., Boyle, C., Corbett, A., and Lewis, M. (1990). Cognitive modeling and intelligent tutoring. *Artificial Intelligence Journal*, 42(1).

Ashley, K. (1993). Case-based reasoning and its implications for legal expert systems. *Artificial Intelligence and Law*, 1(2–3).

Bench-Capon, T. and Sergot, M. (1988). Towards a rule-based representation of open texture in law. In Walter, C., editor, *Computing Power and Legal Language*. Greenwood/Quorum Press, New York, NY.

Branting, K. (1999). *Reasoning with Rules and Precedents: A Computational Model of Legal Analysis*. Kluwer Academic Publishers.

Branting, L., Lester, J., and Callaway, C. (1998). Automating judicial document drafting: A unification-based approach. *Artificial Intelligence and Law*, 6(2–4):111–149.

Branting, L. K. (1998). Techniques for automated drafting of judicial documents. *International Journal of Law and Information Technology*, 6(2):214–229.

Buchanan, B. and Shortliffe, E. (1984). *Rule-Based Expert Systems*. Addison-Wesley Publishing Co., Menlo Park.

Gardner, A. (1987). *An Artificial Intelligence Approach to Legal Reasoning*. Bradford Books/MIT Press, Cambridge, MA.

Goldschmidt, J., Mahoney, B., Solomon, H., and Green, J. (1998). *Meeting the Challenge of Pro Se Litigation*. American Judicature Society.

Gordon, T. (1989). A theory construction approach to legal document assembly. In *Pre-Proceedings of the Third International Conference on Logic, Informatics, and Law*, pages 485–498, Florence.

Hanna, S. (1998). A legal advisory system for pro se petitioners. Master's thesis, Unversity of Wyoming.

Hart, H. L. A. (1961). *The Concept of Law*. Clarendon Press.

Horvitz, E. (1999). Principles of mixed-initiative user interfaces. In *ACM SIGCHI Conference on Human Factors in Computing Systems*, pages 159–166, Pittsburgh, PA. ACM Press.

Lauritsen, M. (1993). Knowing documents. In *Fourth International Conference on Artificial Intelligence and Law*, pages 185–191, Amsterdam. ACM Press.

Maybury, M. and Wahlster, W., editors (1998). *Readings in Intelligent User Intefaces*. Morgan Kaufmann Publishers, Inc.

Quatrevaux, E. (1996). Increasing legal services delivery capacity through information technology. Technical Report LSC/OIG-95-035, Legal Services Corporation. `http//oig.lsc.gov/tech/techdown.htm`.

Russell, S. and Norvig, P. (1995). *Artificial Intelligence: A Modern Approach*. Prentice Hall, Englewood Cliffs, New Jersey.