

LEGAL PROFESSIONALISM AND INFORMATICS

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PART 1: INFORMATION AND KNOWLEDGE IN LEGAL PRACTICE

Introduction

There is something quaint about the story of the concerned mother of a law student who asked her son at the end of the first week, "how many laws did you learn this week?". Lawyers find the question funny - even if it looks innocuous to the lay person - for lawyers know that the question betrays a total naivete about legal expertise. For what students have to learn are not discrete laws as such but a specific *style of thinking*. The thinking is what counts and what people pay for. The concerned mother has confused, I shall argue below, information with knowledge. While she may not understand the nature of knowledge, I also want to argue, that experts do not fully understand and so fail to exploit the nature of information.

What is the value of such a distinction between knowledge and information? The short answer is that while law students learn a *style of thinking*, an understanding of the process of information will enable them to deliver a *quality of service* that is intimately tied to the specific legal intricacies of their work. Without this understanding of information, questions of service quality have to draw on generic know-how about 'customer service' that might just as easily apply to the customer service travel agents offer. The longer answer is that the next century will see a proliferation of social data as a basic cultural resource. The very nature of legal practice and jurisprudence generally will need an informatic if legal practice is to cope productively with this resource (Kirby, 1981)

Nothing particularly deep is implied by the term 'informatic'(1). The term is used here simply to refer to the development of understandings regarding the nature of information - in all its processes and forms. (Belkin, 1974)

The informative vs the knowledgeable

A first step is to distinguish a little more clearly between knowledge and information. Too often they collapse to imply the same reference.

The way we use language suggests some relevant insights into this distinction. When someone is described as a very *knowledgeable* lawyer, the image is of someone who is 'in the know'; who can react to situations by isolating the key elements of a problem; link them to

relevant principles as embodied in various laws or judgements; and suggest ways in which specific moves might lead to specific consequences. Knowledge is expertise. Such expertise is a tool of trade (Foucault, M., 1972).

A key value of professional expertise, in whatever discipline, is its capacity to calculate and react to risk. The *style of thinking* that the client is buying has value in that it gives *peace of mind* by having someone 'in the know' anticipate possibilities and think about remedies. The common argument against Do-It-Yourself legal practices, for instance in conveyancing or divorce, is that the expensive improbables of a case may not be addressed. The novice cannot judge whether his or her situation is as normal as it appears. Such fear is one of the forces that lead people to seek expert advice.

An expert or knowledgeable lawyer need not however be an informative one. It may happen that a client can give over the running of some problem to lawyers (or the legal department in the case of a corporation). All that the client wants are results. He or she may not care how, or may not even understand why, certain courses of action are pursued. He or she trusts the expert to deliver a service. In such an instance, the legal service may be rich in knowledge but not very informative. More generally a lawyer or a judge might be described as "very knowledgeable but not very informative". This suggests someone who has knowledge but does not put it to good use or if it is put to good use, few get to see its operation. A similar example might be with a plumber: we typically do not want to know why there is a blockage or how it was fixed; all that matters is that plumbing expertise gets the flow moving again.

The reverse situation, of an *informed* lawyer, does not necessarily suggest someone who has to be expert. But they cannot be a complete novice. A law student providing legal advice, during 'Law Week', to passing shoppers might be described as 'very informative' by those he or she advises. Such an individual may however *not* be very knowledgeable. This does not mean that the information is suspect, since it can surely be possible for simple but useful points of law to be communicated such that people know more than they did before. Knowledge comes into its own, as it were, when judgements of *detail* or delicate *nuances* of interpretation are at issue. But even in this context, such expertise can be informative if what is going on and why is explained to the client.

How is the social phenomenon of information to be contrasted with knowledge? Knowledge is a cognitive tool used, maintained and protected by a professionalised, perhaps even cloistered group. Credentials provide the basis for membership. The application of such knowledge produces an information service. When someone has been informed, what they knew has changed. The service aspect can in fact lead to self-service. We hear of information kiosks, information kits, information hotlines, information weeks. The accent is on public access and serving the needs of busy people. Knowledge happens *within* a professional group; information happens mostly *between* the group and those who want its services.

An understanding of information within legal contexts provides initially a basis for determining the components of service quality. Quality assurance can remain internal to the profession. This would then protect the practice from quality assurance regimes that are simply imposed from outside - a common threat when there is a competitive edge to the practice, as in the US.

The argument in outline

The structure of the argument can be outlined as follows (2). A clear specification of information and the process of informing achieves a number of benefits. First, it becomes possible to define the *quality* of service within legal practice in terms consistent with legal notions. Second, the role of data in legal practice can be given more centrality. Rather than treat data as they come, there is great potential for legal practice to guide what is called *social measurement* to produce data *intrinsically* relevant to legal definitions. Third, a clearer picture emerges of how data can be analysed and its insights made part of legal outputs like advice, advocacy and judgements. A fourth benefit emerges from how these outputs are used, particularly by clients who will normally wish to be informed about the implications of advice, advocacy or judgements. It becomes possible for the implications of these outputs to be modelled beyond the narrow confines of legal interpretations. Of particular significance here is the use of legal expertise to inform corporate culture in the construction of mission statements and their operating principles.

All of this in turn gives clients more to use and thus more to ask - bringing them back to the legal profession with new problems. Legal professionalism should encompass a strong service orientation which in turn requires an *informatic of legal practice* to be established. The final part of the discussion reviews specific initiatives in the training of law students in an informatic that has jurisprudential coherence.

PART 2: AN INFORMATIC VIEW OF LEGAL PRACTICE

The process of informing

Some clarification about the nature of information is needed if an informatic, appropriate to legal practice, is to be elaborated. A useful start is with language use - of the verb 'to inform' and to contrast this with a similar verb, 'to tell'.

When A *tells* B about C, is B being informed? It is possible that although A told B about C, B did not, for whatever reason, understand. Informing implies more than telling (or communicating): the receiver has to *understand* what he or she was told. (For fuller arguments, see Fox, 1983) What is meant by someone understanding something?

The answer need not slide into a philosophical elaboration. There are specific practical aspects to understanding that can be isolated. If a client is told that a restraining order means he can no longer make contact with his estranged wife, the telling becomes 'informative' only when the client understands what this means. The understanding can be checked by

asking questions to see if the client has fully grasped the practical implications of the restraining order. More generally, it will be argued below that such understanding alters someone's *state of readiness* by revealing *what* (else) can be done in a situation, *how better* to do what is to be done or *why* something ought to be done (see Ackoff, 1958). For the moment though it is worth dwelling, by continuing the contrast between informing and telling, on the social status of the informer relative to the 'informee'.

There is a certain formality and importance about informing when compared with telling. A policeman *informs* someone of their rights (and has to be sure that the person understands what was said). A lawyer informs someone of the implications of a judgement. This leads to the idea that informing implies what has been termed an *epistemic authority* to inform.

"A policeman is an epistemic authority about the rights of arrestees but not (generally) about the investment market. Hence policemen inform arrestees of their rights but tell their friends about investments" (Fox, 1983:177)

The execution of such epistemic authority would not normally be carried out frivolously. Informing normally implies informing someone about something *important*. Even though a lawyer has the authority to inform a client about the ways a judge typically responds, an aside about a judge's foible to a client is really a case of 'telling' unless the foible might have an impact on the client's case.

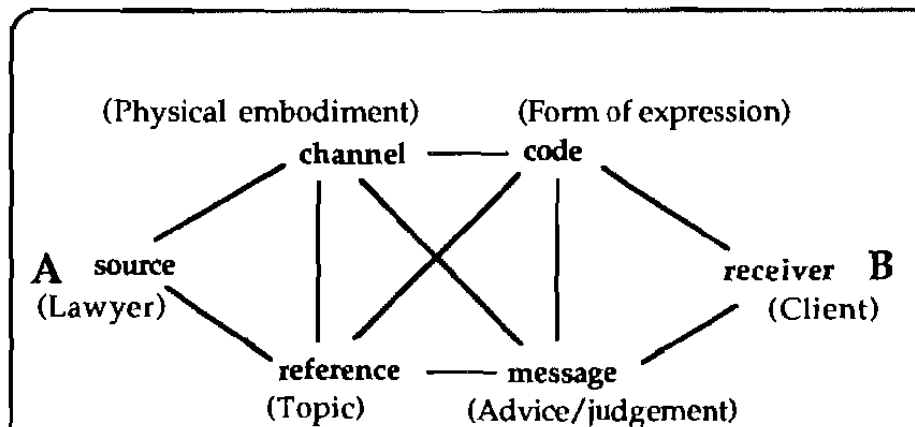
Any authority works on the basis of trust. Any trust needs to be validated every so often. In the case of *epistemic authority* this means that what is being passed on as informative has to be checked to be correct. A lawyer informing someone about how long a case will take, for example, has to be able to show how such an estimate could be obtained. (Reference to past similar cases, a look at the court backlog, an assessment of complicating factors, and so on, might all be relevant). It may happen of course that due to busy schedules of the lawyer, a lack of understanding of what was being asked by the client or whatever, that a lawyer may appear to be 'in the know' without actually being able to show that, with respect to the details of this case, he or she has taken due care to find out about the relevant details and thus cannot adequately execute this epistemic authority.

From these introductory remarks, I wish to argue that the act of informing is a *specialised performance with an attendant set of responsibilities which require specific skills and tools to be executed competently*. In formal terms, we can say that:

- A, the informer (or *source*) has to be in a position to know about a topic C (the *reference*),
- has taken steps to find out that C is the case,
- tells B (*receiver*) of C by a way of *messages*,
- the messages are transmitted through a *channel*, and
- expressed in an understandable way (i.e. a *code*), and
- B, on hearing about C, understands what been said.

Diagrammatically, the flow between source and receiver (A and B) is mediated by the following links:

Figure 1: Components of Informing



Informatics is the study of the interactions between these six elements within a specific field of knowledge. Of particular technical importance is the nature of flows between any three elements (for details see Fairthorne, 1975). Initially the source and receiver refer to the two participants in a consultation. However, as will become apparent, this can be generalised to a wider range of sources and receivers.

To illustrate, the lawyer (A) has to be in a position to know (i.e. has done relevant training), about some point of law (C), uses his or her training (knowledge) to find out that C applies to the matter at hand and passes on appropriate advice (message) about C to B (the client) having ascertained (earlier) that this is relevant and needed. Moreover the lawyer tells B about C in a form B can understand. This has two components. The message has to have some physical embodiment (or channel) - spoken words, diagrams, pictures, written material, body language. Each embodiment is a channel and each channel may distort the message (by introducing ambiguity or extraneous material). The message has to be expressed in some idiom (or code) that is understandable by the client (receiver). For instance, it should be plain English, or with a diagram appropriately labelled. Using written words as a channel may be effective, but the coding may be weak because of undue reliance on 'legalise' codes (which others may not understand). In such an instance the channel is being filled with 'semantic noise'. There are many choices available to A trying to get some message about C to B. One general maxim of practice that emerges from this view is that redundancy of messages ought to be used to minimize noise for the client rather than to show off the expertise of the source (Arrow, 1974).

The whole process also works in reverse: the flow of information is from B to A. At the core of this lies a very simple observation: an 'information aware' lawyer asks many more questions than he or she

offers in answers. All too often, legal training and professional standing lead to the social projection of expertise being validated through the giving of answers that display 'being in the know'. This in turn encourages clients to assume they should not ask questions either. Such reciprocal expectations diminish the prospects for information flow.

To anticipate, it can be seen that these considerations have significance in defining the adequacy of professional service. If the entire interaction between lawyer and client is viewed from the perspective of the operation of the law, then the process of informing has only a secondary significance - despite its obvious primacy for the client. This is because if anything goes wrong due to some piece of information not having been passed on at the right time, the legal complications arising require lawyers anyway: the consultations continue.

The three impacts of information.

What happens when someone is informed? At a simple level, what they knew has *changed* (MacKay, 1969:23-28). The significance of this is that an actor's 'state of readiness' to their surroundings has been altered. The change can occur in three distinct directions. The process of information may alter the 'state of readiness' in three different ways depending respectively whether means, ends or the efficiency of their coupling are being affected.

On being informed of some new law, or a loophole within a law, or some tactic within a court proceeding, a client has been informed in the sense of having the courses of action available to them extended (or contracted). In other words, and more technically, the probabilities of using a specific course of action have been altered. (Martin, 1963)

Regardless of which course of action is chosen, there is always the possibility of it going wrong, of producing an undesired outcome. Information can also affect the probabilities of such success. In this instance, information does not alter the course of action chosen, but rather the efficiency with which it is accomplished. For example an effective advocate may be able to carefully control his or her summation of a case by relying on feedback from other persons (eg jurors) in the court. Or the use of database system may be far more efficient in finding relevant case material. (Ackoff, 1958)

Finally, information may alter the significance of what is being sought and thus the effort or urgency that applies to its pursuit. For example on discovering that a company is about to become insolvent may radically alter the priorities of a client seeking redress for wrongful dismissal. (Ackoff, 1958)

When A is informing B, it becomes apparent then that A, in discussing C, may be *describing* (to someone, what can be done), *instructing* (someone, how to do it well or better) or *motivating* (someone as to why something has to be done now). The picture becomes more complex when it is realised that the flow of information can be in *both* directions: client to lawyer and vice versa. (A fuller discussion of these notions of information can be found in Ackoff, 1958).

Self awareness of expertise often leads to a focus on describing - of the lawyer informing someone of what can be done. The questions of efficiencies are left to the lawyer while questions of motivations are left undisturbed within the mind of the client. It ought to be apparent with even such a cursory overview that there is a clear field of competences and tools that lawyers ought to be drawing on as adjuncts to their legal expertise in order to maximise information flows in all three directions, for legal practice involves clients and lawyers informing, instructing and motivating each other to get the best result.

Professional service and information needs

Services involve clients, or as some would say, customers. There was a time (or was it simply an image?) when clients arrived to an office opulent with the *vanitas* of legal expertise. In such hallowed settings clients revealed some problem which the lawyer first diagnosed and then suggested how it could be solved, typically through recourse to legal means.

Lawyers use four key resources loosely labelled: contracts, codes, cases and contacts. They can 'read' contracts in terms of implications that might escape a lay reading. They understand and know how to use various legal 'codes' - laws, regulations, and jurisprudential concepts. How they read contracts and understand codes can be tested in relation to 'cases' with similar elements. Finally, they operate within a web of professionally based contacts, be they with other lawyers or with cognate specialists. The use of these four resources underpins legal expertise.

The double role - of diagnosis and solution - puts many special responsibilities on professionals. These have been embodied in ethical and peer review arrangements to provide protection for those who, because of an obvious lack of expert knowledge, have to trust the expert (Arrow, 1974). But such ethical standards do not mean that legal consultations and the general operation of legal practice in all its forms are therefore guaranteed to run well.

Whatever else is going on in a legal consultation, it is first and foremost, a *social accomplishment*. (Giddens, 1976:71-86) Each participant has roles to play which require not only effort but social competence. This might suggest that lawyers should, as part of their training, learn social *etiquette*, or more adventurously, strategic interaction. Under this rubric would come such matters as decor, arrangement of furniture, sociability of support staff, a 'customer focus' and so on. It might seem appropriate to copy the social competences of any 'selling profession'. Some legal firms have gone down this path. The point of such moves is to conjure up ambient conditions where the client thinks: "this isn't so bad, the legal firm I went to was great: they really make you feel they understand you....." What I want to argue is that this is entirely too superficial.

The client may *feel* they are being understood, but are they? And if they are being understood how is it known that such understanding actually occurred? There is a far deeper way to encourage trust and manage the social encounter that is intrinsic to legal activity. It relies on ensuring adequate *information flows*.

Both the lawyer and the client have something in common: information needs. The lawyer has to find out what exactly is the situation of the client and the client needs to know what can be done and how it can be done. Information needs are a sub-set of ignorances. The two involved in the legal consultation need to explore only those ignorances that, if left in place, *curtail action* - be in on the part of the lawyer or the client. The constraints on action can relate to any of the three directions information can take (i.e. descriptions of means, efficiencies of means or significance of ends).

While this seems obvious in principle, in practice there is a major hurdle: people do not know necessarily what they need to know. Information needs can remain obscured. A client may not realise that some piece of information is crucial if the lawyer is to be effective. Conversely, the lawyer may not realise that some implication of a proposed action has not been spelled out for the client. To minimize inadvertently leaving some information need unspecified, there needs to be a strong sense of trust. This lowers the threshold at which individuals are prepared to mention some doubt.

Trust can be underwritten by ethical standards and peer review. (Parsons, 1970) But this protects clients from major mishaps, it does not enable them to say more. The kind of trust that works is the sort that is produced through the *very activity of the consultation* in which the client participates in trust engendering activities related to their situation. This can take many forms. The key is that such activities should be centred on maximising information flows, rather than say the social niceties of offering a cup of tea.

Beyond candid and relaxed conversation, information can be collected and transferred through the filling in of forms, group discussions, structured activities like nominal group techniques and on. The details need not be of concern, the point is that the traditional, highly individualised form of legal consultation, may not be the most effective way for trust to be engendered and information needs to be specified for all the relevant parties. In other words, the manifold of options that arise in combining specific channels, codes, and messages, given the topic and the receiver (client) have strategic value in getting information moving.

Unless these other ways and modes of accomplishing 'consultations' are explored, there will be a growing gap between professional legal practice and the growing array of para-legal services. By way of digression, it has been commonly assumed that para-legal services have arisen as a function of the cost of legal services on the one hand and the proliferation of minor tribunals and administrative functions that involve disputes. Some attention could also be paid to the 'market pull' these services have when they explicitly emphasize *information* based services.

In summary, the quest of service quality within the legal profession - whether in client consultations or within administrative contexts where lawyers are employed - involves more than applying generic ideas about social interaction, service or 'selling'. The critical component to the quest of service quality is information quality —

ensuring all information that *can* flow, *does* flow and in both directions. The implications for the training of lawyers are obvious. Students need to become socially and informatically competent to execute the responsibilities in informing and being informed. The same informatic provides a basis for improving service even when there are no people as such to be dealing with socially. This is particularly so with the emergence of social data as a resource.

The ubiquity of data

The argument so far has concerned the operation of professional service as it has evolved over the last 100 years. There is another way to deploy an informatic within legal practice: bringing the practice up to date so as to be more productive in using data (rather than simply 'testimony' and traditional forms of evidence). The four resources of legal practice mentioned above - contracts, codes, cases and contacts are all being altered by the proliferation of data. Data, it will be argued is the information resource *par excellence* (Volpato 1990)

There is much talk these days about an 'information explosion'. (Lyon, 1988) Given what has been said above about information, such a notion is a nonsense. What is actually meant in most cases, is that there is, what might be termed, a *data deluge*. The problem with this deluge of data is that *not enough* information is derived from the masses of data that proliferate modern societies.

The proliferation of data is a problem for many different professions and ordinary citizens. There are however no general solutions to this. Each profession needs to appropriate the data into its own knowledge base. While various professions might find common problems the solutions are very different. This is notwithstanding the alluring sales pitches for computing technology that claim it will 'manage information'. Mostly, such technology 'processes data' - only people can 'manage information'. (3)

Data and particularly social data, in the case of the law, is of critical importance because it involves human agents. Increasingly, one can expect that much legal practice involves reacting to data without the individuals to whom the data refers even being consulted. For example, the use of data from medical trials might be used in court without those actually involved in the medical trial being consulted - all that they have to offer is already in the data.

Following on from the discussion of information above, the question arises as to how data relates to information. The most obvious answer is that data 'contain' information which has to be unlocked if it is to be used. The issue of extracting information can be left to later. A more immediate question concerns how the information, so contained, got there in the first place.

People these days fill in forms, answer phone polls, have their credit card transactions logged, are photographed going through certain shopping areas, and are interviewed at home. Modern citizens leave long trails of data behind their actions. The law has tended to follow somewhat slowly on the heels of some of the cunning that goes into effective data acquisition. Rules of evidence have begun to emerge about what is

admissible and under what provisos. A simple example is the use of social survey materials in court cases. (Smith 1982)

More challenging for legal practice and jurisprudence generally are the prospects of legal notions actually guiding the very production of the data in the first place. There are well established rules regarding the cross-examination of witnesses - which is a specifically legal practice of getting data (albeit 'soft' data as social scientists might say).

Take the example of the advertising of alcoholic beverages. There is, in Australia, a code of practice and regularly individuals take offence at some advertisement and bring the matter to the appropriate tribunal. An individual might claim that *to them* the advertisement implies that drinking some alcoholic beverage is linked to improvements in social or sexual prowess - expressly forbidden by the code of practice. In many of the cases, the tribunal members look at the advertisement and decide that it makes no such *explicit* claim. Any such claim is simply imputed.

The problem with this is that the whole point of modern advertising is to produce specific *subliminal* effects despite what the actual words or pictures literally suggest. The task here is to develop a relevant measurement tool that measures precisely this subliminal effect and whether such an effect goes towards or beyond some standard as set. The design of such a measurement tool has to be linked to the ways in which evidence can be presented. It is not a separate technical matter with the lawyers coming in on the act after the data are collected by other specialists.

There are many possible areas in which the practice of measurement needs to be *internal* to legal practice if data is to have the necessary power of persuasion. Without such legal guidance, the data simply does not contain the information needed. This suggests that legal firms ought to be commissioning social measurement ventures to collect data, which in a *legal* sense are information-rich.

Converting data into informative reports

Lawyers produce information. It is their key output. Whether they are giving advice, advocating a case, or making a judgement or determination, what they produce is information as defined above. What they *use* and know might more generally be called knowledge or expertise. But what is *delivered* is information.

One feature about legal outputs is their unabashed textuality. It is (still) uncommon to see advice, advocacy or judgements presented as videos, animations, graphs, or simulations. In informatic terms there is a strong rigidity about which channels and codes are appropriate and a resistance to testing the communication efficiency of trying something else. In many instances, more information would be conveyed through these non-textual 'channels'. Of course such media do not then easily lend themselves to subsequent re-appropriation into the legal corpus since this corpus remains encoded and channelled in textual media.

Much legal practice concerns developing and applying the kind of thinking that can extract appropriate information from the stock of

knowledge (of contracts, codes, cases, and contacts). However the emergence of data in legal contexts presents various difficulties to producing legal outputs. A common question concerns the capacity of judges and juries to follow any argument in which data are being used as evidence. A common approach is to use expert testimony. But why is there this alleged difficulty? The usual answer is that data is the province of statisticians. They in turn have a notorious history of making data less accessible as they seek to reduce data to statistical summaries, the mathematics of which few lay persons can follow (Shaw & Miles, 1979). In fact, individuals can explore or understand data directly once the data are adequately visualised (Bertin, 1983).

For example in a murder case, the prosecution argues that the death of an individual in the forest was a murder carried out by a fellow bushwalker because the forensic evidence showed that the scatter of brain tissue on the foliage was consistent with the shot gun being pointed virtually at a horizontal plane, a feat not possible for an individual to do or to fall and have happen as an accident (the defense's claim). The prosecution might call in an expert who has developed a model showing the projectile trajectory at given gun angles. This expert talks as if the trajectory is fixed given the angle. Another expert, for the defense, suggests instead that brain tissue flies out in the shape of a cone and that the overall trajectory of this cone of tissue would vary even if the angle would remain constant. While such testimony might clarify matters, what is needed is a *simulation model*. (Philips, 1985:353-386). With computer animation, the projection could be modelled and 'seen' in all its relevant detail. Technical debate could perhaps then be resolved in the specification of the model prior to its admission.

In other cases, where data have to be dealt with, it may be appropriate to present graphs. The design of graphical displays within legal practice contexts need not be the same as those that apply to the production of glossy graphs in journals or magazines. In fact there ought to be standards established regarding the *admissible form* of the more common graphs. The revolution that is going on in data analysis in which complex analyses are carried out through visualisations of patterns rather than complex mathematical summarisations means that many more people can 'understand data' than is currently assumed.

As the law moves into areas in which non-individual actors are studied (eg corporations) data will grow in significance as a key form of evidence. This is because the investigation of responsibility of corporations will be detected in *patterns* of behaviour (any single instance of which may not be irresponsible but the combination of which suggests otherwise). In such instances, data may be the only way of seeing the behaviour being investigated.

As data becomes a more common form of evidence, the dominance of textuality as the prime form of legal outputs will diminish. Moreover the challenge of converting data into information will not be left to other experts, but will become part of legal professionalism.

Modelling implications with the client

The client will not only want the outputs he or she has bought from legal practice, the client will also want guidance about the implications of any such output. Just as it often happens that the client does not know quite what the problem is, he or she may not be in a position to follow through on the outcomes of the legal process they initiated. More generally, the client may need to 'model' the implications of advice or judgements for their future. At present, lawyers are ill-equipped to do this except within the confines of legal implications. On wider matters, they provide some informal discussions with the offer that if others things crop up, they are available for further service. The lawyer's scenario stays within the legalities of the problem, while the client has to live with all the non-legal components of resulting situations.

The major challenge of modelling lies in seeing whether non-legal means may be more appropriate to resolve the problem. A common area here is in the mediation of conflicts which may be formally resolved through legal channels but which leave a wake of burdensome implications that have to be lived with. A simple and obvious example is in divorce legislation. While individuals might be 'empowered' by knowing what they can do to protect their interests, there are many other aspects to the divorce process that can continue as burdens long after 'legal resolution'. There are now a variety of simulation systems - both software and social - in which intending divorcees can see or experience the kinds of scenarios that are likely to unfold. (Phillips, 1985)

More generally an information-rich legal service would have any advice accompanied by a modelling of its implications. In fact the very elicitation of information needs mentioned earlier can be extended by mocking up alternate advice and scenarios. In this way, the advice is more 'informative' in the sense described above.

There is a major obstacle to this line of thinking. Lawyers cannot become general social modellers or counsellors. Yet there are many unexplored possibilities for what might be terms 'value added partnerships' in which legal advice is bundled with other kinds of advice so that the client can obtain a wider view of what is going on.

Legal expertise and the construction of mission

In discussing legal practice, the focus has been on private practice and its traditional forms. However, it is obvious that individuals trained in law do not all become lawyers practicing in legal firms. Legal thinking is spreading everywhere. A major source of employment of law students is in large organisations that need individuals who can apply legal thinking to their operations. This thinking becomes embodied in a range of quasi- and para- legal structures involving boards, tribunals, review panels, and the like— all dealing with laws, regulations, custom and practice and common sense.

If this suggests a kind of horizontal spread of the legal professionalism, there are also prospects for 'vertical' spread. As organisations find they have to make explicit much of what they do (in

standard operating procedures, manuals, management systems and so on), it becomes imperative for them to clearly define what they are on about. In particular, they have to manage their 'corporate culture'. (Anderson, 1984) This can be done in a number of ways and involves a variety of professionals. Legal professionals have a specific role to play here. As mission statements come to embody the values of an organisation, it becomes imperative that all the operating principles within the organisation are congruent with this mission. Legal training provides a basis for this. However the basis alone is not enough: legally trained individuals tend to think in terms of mishaps and their avoidance rather than hopes and their realisation. If this legal basis is extended to include information processes as described above legally trained individuals will be able to exercise leadership within corporate cultures.

PART 3: THE TRAINING OF LAW STUDENTS IN INFORMATICS

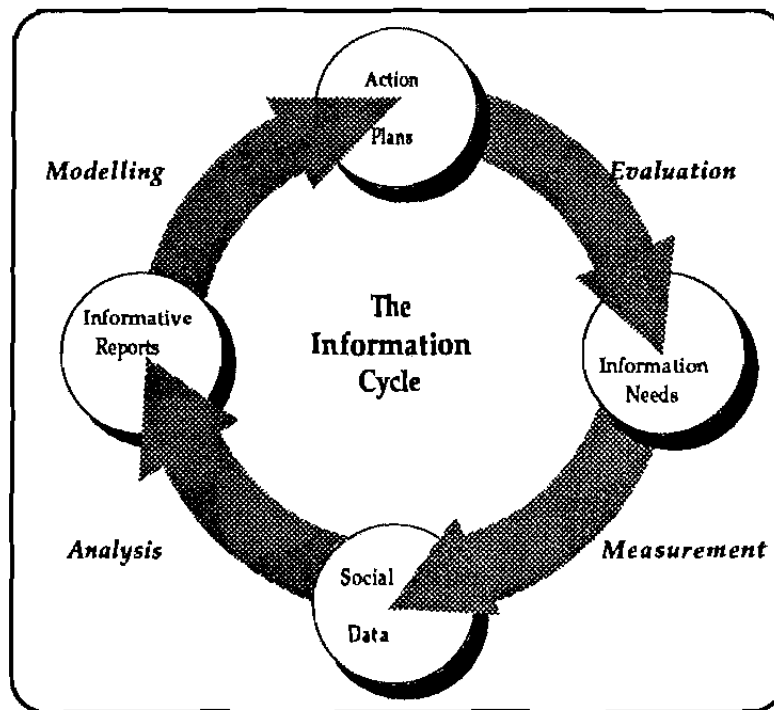
Outline of a legal informatic

The core of legal practice is service. This service is mostly an information service. In parallel to their usual training law students should therefore be trained in the *informational* components of their work as distinct competences.

The first requirement for such training is that it be internal to legal training rather than an 'add-on' to give law students a peek at useful things outside the profession. The second requirement is that it has to be grounded in practical challenges so that the payoff of informatically guided practice is seen as professionally rewarding. Third, information *products* have to be distinguished from information *processes*.

The following comments convey the core ideas and some of the 'feel' of the training. Technicalities of which there are many are kept to a minimum and pedagogy is only mentioned in a few final comments.

The course outline (and the logic underlying the argument given) can be summarised in the following diagram:

Figure 2 : Information Products and Processes

The four little circles define four specific information *products*. Technically, these products are called information vehicles. The large arrows refer to sets of skills, tools and intellectual work. These are information *processes* that transform the information content held in one form into the next one along. Historically, the cluster of skills that cover this range emerged in the field of social research (Babbie, 1989). Modern information tools and accessible data have extended the reach and relevance of these skills. Each pair of information process and product (E.g. measurement produces social data; analysis produces informative reports and so on), defines a specialised course. Without going into the complexities involved, it can be said that each transformation of information products involves a distinct set of operations using the model diagrammed earlier (Figure 1) in which each information product is an informational 'source' to the next product. A cycle of operations can be developed in which there is potential for continual value-adding of information services.

Social measurement and social data

The nature of measurement and its potential for defining forms of data appropriate to legal requirements of admissibility and plausibility have already been noted. Beyond treating the client as a 'source', it becomes immediately apparent that lawyers need to use a number of 'sources' that can produce relevant data.

From a training point of view, students have to learn to deal with four distinct data 'sources' beyond the traditional one of the 'client'. Each of these 'sources' have data to offer that can feature in legal practice. They are: populations, groups, individuals and settings.

Populations are 'surveyed' and there are a number of skills involved in designing appropriate questions and forms, selecting representative samples and measuring specific and at times complex concepts. The coding of opened ended questions and the recoding of existing response categories are of critical importance in getting data 'into shape' for analysis. The measurement of the effect of alcohol advertising mentioned above is an example of a population operating as a 'source'.

Groups have merit as sources when it is important to explore the nuances of meanings that operate on some issue or object by means of group interviews (or what is technically known these days as 'focus group' techniques). An appropriate area of application is in exploring the issues that emerge within jury groups and how sentiments and other non-rational components of judgement arise. Such interviews are usually video-recorded and edited. A variety of skills are required.

In the case of individuals, a useful method is the familiar procedure of 'interviewing'. However from an informational point of view, interviewers require skills that enable them to 'navigate' between the interrogation model (as carried in police work) and the sympathy model (as carried out in social work practice). These latter two are commonly used but have low information yield efficiencies.

In the case of using social settings as an informational source, a range of observational skills are required which are developed through various observational field exercises. These exercises provide students with access to a wide range of social encounters and refine their observational astuteness even in familiar settings. Exercises might involve looking at queues, negotiations, courtrooms, and so on. Video work and the coding of behavioural sequences into types require specific analytical skills. Skills in this area mean that students can 'get a feel' of a place. In turn they are better equipped to understand what someone is really saying from such a place. They are also in a position to communicating a sense of such a place to others (e.g. jurors or judges).

All these data acquisition regimes involve recording and note-taking skills. These in turn can be assisted with hyper-text software tools, database programs and audio-visual recording equipment. Apart from generic value, such skills can be taught with a full range of examples from legal practice. Indeed, a course that uses legal examples and exercises to train students in the necessary skills, looks and feels more practical and real than the core legal courses - with their heavy reliance on textbooks, memorisation and exams. The aim of such 'enskillling' is not to produce lawyers who can operate as social researchers. The aim is more subtle: to use social research to give students access to their *own* practice while also familiarising them with information processes that have merit for their future work. In particular, it would enable law students to advise others on how some measurement process ought to occur for the data to be admissible, relevant, plausible, and informative.

The key challenge with data analysis is to show students how to *enjoy* and *explore* data. Unless data are seen as much more informative than magazines, books, or films the current cultural tendency to see data as 'necessary evils', or as mute symbols that are best left to other specialists to deal with will continue. Once this world is opened, the skills required to deal with data fall into three sets: graphical, writing and statistical.

Once data can be visualised, graphical tools provide a powerful means to communicate insights (Tufte, 1983). These in turn promote a clearer form of writing (Christensen, 1967). For instance, one exercise carried out to encourage the integration of graphs with text is to have students produce a graph on a screen, turn the screen off and 'write blind' using the keyboard, explaining what they saw. Effective graphs leave strong memory traces and these in turn provide the initial basis for the formulation of sentences that tell a story. In this way, students learn graphic design principles and practical writing heuristics. The exercise immediately reveals to students how *useless* glossy graphs (produced by modern graphics packages) in leaving a strong memory trace. They also discover how inarticulate they are in reacting in writing to an object.

Statistical analysis proper is confined to the assessment of inferential risks - of making the wrong inferences from the available data. Statistics is a doubtful management tool. To be effective, it has to be used in relation to the penalties which apply to wrong inferences. In legal contexts such cost functions, as they are called, have specific forms, often quite removed from the generic but bland tests taught in classical statistics courses. A simple example of this kind of logic, is that the use of averages in statistics are far less appropriate in describing distributions in legal contexts. Far more effective (in minimising penalties) are the median and quartiles. These are more statistically robust and far more effective as evidence when compared with averages (Tukey, 1977).

Another set of skills involves the production of the physical report. This may involve page layout, text/graph integration challenges, and writing 'flow' issues. It may also involve live presentations - using projection screens, with graphs designed around 'story boards'. Generally speaking, students are woefully ill-prepared to use such presentations. Many lack the basics of writing. (Without such matters addressed, students invariably learn to hide inadequacies by ritually following the traditional channels and codes of their elders).

These data analytical skills are not to be seen as a luxury add-on to the core of legal training. Such skills can be expected to become more significant as data proliferates through legal practice.

Modelling and action plans

Once reports are developed, of whatever form, there are a number of skills involved in modelling the implications of whatever is reported. Three specific areas need to be covered in this area: retrieval of related matters, the construction of simulation models and the arriving at consensus about implications when diverse expert opinion is being

consulted. All three provide ways of drawing out the implications in the most informative way.

The retrieval of material from databases is already well advanced. Initially training to use indexes to journals, laws, judgements and so on is useful. Related to this is the training needed to navigate through electronic networks. There will be situations in which there is more to be found out about a legal decision by 'networking' with those living in its wake rather than retrieving the highly codified textual material that embodies the decision itself. Legal practice can be expected to be radically changed by such global electronic networking.

A second less visible area of skills is in the construction of simulation models to assess consequences. These used to be seen as the province of mathematical specialists. However, modelling software is available for non mathematicians to mock up systems that capture key elements of processes. (Phillips, 1985) All kinds of processes are all amenable to such modelling: courtroom dynamics, jury deliberations, risk structures, judicial interactions. One advantage of model construction is the discipline it forces on students to isolate the key elements of a process - *before* the model is refined to deal with specific processual vicissitudes.

Finally, there are a range of procedures in which seemingly incommensurate knowledges from diverse professional sources can be aggregated to mock up scenarios of what might happen. Some legal outputs only make sense once their implications are drawn out with respect to other expert opinions (for instance what the implications of an injunction on cash flow or a production schedule or reactions by competitors). Lawyers often have to be involved in such teams and at critical points need to exercise leadership when their line of expertise is a critical ingredient to overall success. Methods like the Delphi technique, cross-impact analysis and other nominal groups techniques all provide ways in which estimates of some outcome are aggregated from diverse sources and then the aggregate is re-submitted for each expert to reconsider. The aim of such methods is to reach a consensus about the upper and lower bounds of some outcome, without wasteful 'cross-talk' between experts who are using very different knowledge bases.

All such skills have generic value. Their specific value within legal contexts is in enabling lawyers to widen their professional gaze when advising on the implications of some legal decision. The capacity to simulate scenarios improves the client's ability to develop optimal and well informed plans of action.

Evaluation and information needs

More often than not, recourse to legal advice occurs late in the day: the proverbial horse has long bolted. Legal practice is used in such contexts to minimize damages, recoup lost ground, or seek damages. Whatever the situation or the branch of law involved, it is crucial to find out what information there is that bears on the case. At one level, evaluation refers to the skills required to elicit this information along the lines described earlier. There are also higher level skills that enable lawyers to operate more productively (4). In many contexts, practicing

lawyers may not see any need for such proactive evaluation: they only ever have to react. The skills have specific value when legal expertise is used in social engineering or social pragmatics. The most common area here is in the design of effective norms. Increasingly such normative specification is not done against the backdrop of what 'society wants, needs or tolerates' but within highly defined niches of social activity: corporations, neighbourhoods, associations, or branches of government.

To be trained in this area, students are introduced to scenarios in which a process is producing a *series* of complaints or problems (the complaints might be due to tensions between landlord and tenant, or husband and wife, or business and creditor). While these can be 'solved' one at a time and routinely as legal issues, there is the question of whether the problem or complaints, *as a series*, can be 'dissolved' by redesigning the very nature of the encounter so that such parties might in future operate in different ways. This leads into social design issues about the formulation of laws, the operations of social norms and mores and the role of sentiments in public life. Evaluation in this context provides, in effect, a sociologically informed alternative to general concepts of jurisprudence which are often used when lawyers become involved in ventures of social engineering or social pragmatics. The difference is that the design issues are located within highly specific social settings and require detailed analysis rather than the easy application of general principles.

Increasing numbers of law students are moving into in large organisations and dealing with design and policy issues. There is a belief that such students would benefit from broader studies, particularly in sociology and economics. However these disciplines do not address *design* issues in quite the way needed. Sociological analysis too often gives individuals an ability to 'explain' just about anything that happens from a wider perspective of social structural constraints. This dampens social imagination. Economics by contrast tends to encourage highly generic solutions derived from very general models of choice behaviour. The solutions usually involve reworking pricing mechanisms. The former tradition has produced too few actual solutions to, even if there is an overabundance of 'diagnostics' of, specific problems; the latter has produced too many solutions based on too narrow a set of analyses. The evaluation skills dealt with draw from both these traditions but force their application on specific problems, in all their complexity. Here the match with legal thinking is far better (see Parsons, 1977).

These higher level evaluations generate their own set of information needs which to be specified. As design options are canvassed and feasibility assessed, it becomes apparent that in many cases detailed social investigation is required in order to isolate which design or design components have the best chance of working. This part of evaluation provides a link to the general area of socio-legal studies and is best suited to be managed at the level of legal professional association or academic research rather than individual legal practices. The information cycles described above thus becomes a spiral in which wider social design issues branch off from questions about whether routinely produced problems might not, under other social arrangements, be dissolved. (Of course other problems requiring legal intervention might then emerge, but at

least the law then moves with history rather than staying exclusively with legacies).

Pedagogical Strategies

Informatics defines the basis of a craft of using information effectively. Training in this craft involves practical exercises, field exposures and tutelage. It is one of the distortions of the age that the execution of pedagogy has become intimately tied to the epistemic authority of the teacher, which in many professional contexts and in the wake of rapid social change is probably not a well founded authority. The result is that useful field experience and the specification of actual skill deficiencies that will undermine professional performance are left too late in individuals' careers.

The training envisaged above takes about 500 hours of work (in total). It can be compressed into the regime of an academic year; strung out throughout a degree; or approached as a series of intensive workshops. There are a number of features about the training that are worth mentioning.

First, the areas to which the skills are applied derive from *legal* material. Consequently, there is potential for a subtle 'interleaving' of traditional law course materials from an informational rather than a knowledge angle.

Second, much of the training involves socially demanding encounters: students are not simply dealing with the 'holy writ' of texts and the authority of the teacher. For example, in getting a form to work, students who have designed it have to confront the challenge of real people filling in the forms. In getting a graph or diagram to work, they have to confront the reality of a tired audience and so on. Presentations are done with live audiences. Simulations have to service real doubts about which course of action to take. Thus a portion of the time is really 'field experience'. This has major benefits in building up social skills and self-confidence generally, beyond giving students legally relevant information skills.

Third, the training has only become possible because of the revolution in information technology, software and the convergence of these with developments in video. Training here prepares students for the offices of the future and the work styles that go with this (including the obvious capacity of having legal practices dispersed geographically through tele-computing). The learning experience tends also to be more autonomous and structured: computer labs and simulation rooms are continually used. The awesome centrality of the law library is diminished.

Finally, the training in this area puts a premium on *skill* rather than knowledge. It is what you can do and show you can do, not what you know that has salience for students. The resulting sub-culture plays down the social value of the credential (which, in law school, is given such a premium that students all too often see their study as an ordeal to be endured until they get the credential). Instead, students discover the value of building up a 'portfolio' of work and activities. To put it in an

analogy, the aim of the training is to have students looking more like they are equipped to climb the mountain of a successful and self made career than simply expecting that a credential is an admission ticket to a career escalator requiring little effort to ascend. While the latter view has a basis in social reality, given professional closure and its close links with wealthier families, as a basis of learning motivation, it does not offer much. Not surprisingly, students who cannot draw on cultural or financial capital find this style of training particularly gratifying.

Conclusion

The foregoing argument started with the separation of information from knowledge. In Part 2, it outlined what is involved in the process of informing and how an informatic of this process provides the basis for moving legal practice into the next century when data will be the prime source of information. Part 3 gives a 'feel' for what the training would look like. It is consistent with modern approaches to 'adult learning'. Only passing references have been made to the technicalities involved. It will suffice here to suggest that a fully fledged informatic involves the integration of the two diagrams presented here. Each of the information processes described in Figure 2 can be decomposed into the flow model depicted in Figure 1. In turn each component piece then has to be mapped to a relevant set of legal examples and frontiers. (For further details see Note 2). In the longer term, it is in such information process components that the design of highly specialised software tools (or agents) can be developed and tested. But this is another story.

How socially and politically realistic is the informatic proposed? There have been claims that some modern societies are becoming unduly litigious. The courts are filling up with matters that appear ill suited for them to solve. It may be that spare cash and personality insecurities of the well-off lead them to hire lawyers to fight out battles which do not really need the courts. Similarly it may be that many business corporations use lawyers to frustrate other business competitors, control their own markets and generally use the law as a weapon within the economic arena. On such a reading, it may seem that lawyers are akin to gladiators who fight spectacularly to ever wider audiences who are primarily after entertainment, not justice; and to patrons who are after control or revenge rather than equity. Legal expertise might be akin to gladiatorial agility and prowess. It may also be that by controlling the profession and feeding the social forces that drive social conflicts to become legally mediated, the profession is not likely to have a cash flow problem.

This might seem an unduly uncharitable scenario. Anyone who listened to law students in 1980's will recognise the scenario. TV viewers will also recognise it. In the end the scenario depicted is a cost scenario: citizens, businesses and the wider society carry the cost of such processes. Those societies, businesses, and individuals who can cope with uncertainties and conflicts more efficiently, spare themselves this cost. This is one basis for the spread of para-legal services.

In the 1990's the key challenge of survival for legal expertise will depend on service quality and a capacity to use data and information technology tools. The informatic above provides a foundation for this

future. As the pressure from customers grows for service quality, it would be a great pity if legal practices simply combined the up-market gladiatorial role with down-market 'selling' of high turnover legal services. In such a scenario, para-legal services will fill the gap and exploit the kind of informatic described above. This may seem appropriate from a cost point of view, but further disassembles the legal corpus and all the received wisdom (knowledge) it contains. The costs of litigation might be growing but so too are the uncertainties: the best legal knowledge has to be applied to the widest set of problems. The informatic proposed above leads legal practice in this direction. Information is what makes legal professionalism capable of excellence, not just efficiency.

Notes

- 1 For detailed investigation of the relationship between informatics and the law see Burkett, 1982
- 2 I would like to thank Eugene Clark for encouragement and advice; Maria Kunda for reading the manuscript; and the final year students in social research who provoked so many questions. The thinking in this paper has emerged from teaching and training students and professionals to make the most of information. Initial facilities were developed in the 1980's in the Department of Sociology, University of Tasmania (at Hobart). Course notes and other material are available through the DOXA Institute, P.O. Box 550, Sandy Bay, TAS. Australia. More immediate contact can be made via E-mail:
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- 3 Confusion emerges because the theory of data transmission is called the theory of information. (see Shannon & Weaver, 1964)
- 4 Evaluation is used here in a specialised sense of assessing the future prospects of some action or program. Evaluation typically covers the assessment of performance against originally established goals. See Rossi and Freeman, 1990.

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