

Models of cognition and the definition of institutions¹

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Abstract

This paper explores whether the importation of contemporary models of cognition into new institutionalism will enable us to resolve some of the conflicts between “new” and “old” theories of institutionalism. The paper assumes that institutions, as social objects, are stored cognitively the same way as physical objects. Using Barsalou’s theory of frames and Rosch’s theory of categorization, this assumption makes it possible to develop rich cognitive models of institutions that overcome many of the conflicts. However, this modelling exercise also suggests strongly that social practices become objectified much more rarely than is assumed by the current literature.

Models of cognition and the definition of institutions

The so-called “old” and “new” institutionalists constitute a central division within the organizational version of the institutional literature. Both seek to understand the way social structure regulates behavior. The old institutionalists, drawing on authors such as Selznick (1957), Bendix (1956), and Veblen (1934) claim that, when considering institutions, we should focus on explicitly material factors, and on the detailed operations of particular institutions (eg. Stinchcombe 1997). The new institutionalists advocate a much more cognitive orientation. Structure, they claim, resides principally in the mind of the social participant, and we should focus on the way those beliefs are created and diffused through populations of participants (Barley and Tolbert 1997; Berger and Luckmann 1967; Giddens 1984; Tolbert and Zucker 1997; Zucker 1991 (1977)).

Each side has launched effective critiques of the other. Stinchcombe (1997), for instance, argues that contemporary institutional theory is excessively narrow in its conception of institutions, because a narrow conception is easier to mathematize (and subject to large-scale empirical tests). Unfortunately, such narrow conceptions lead to an empiricism that ignores the complexity of real life, and may substitute what is measurable for what is meaningful. Stinchcombe’s argument suggests strongly that any model of institutions must be able to account for explicit material factors in its operation. Particularly, if we are going to pursue a cognitive approach, such an approach must be able to account for the role of power in institutions.

Stinchcombe claims that courts of law attain their legitimacy through the use of a jealously guarded judicial process as one of his three examples of material, rather than symbolic

sources of legitimacy (Stinchcombe 1997, pp.2-3). A new institutionalist counter-critic might point to the Australian Family Court in response. It is not clear that the court's practices, while invoking high-quality judicial process, are legitimate to the people on whom it acts. "The murders of a judge and the wife of another judge, the bombings of the Parramatta registry in the 1980s, death threats to registrars, the murder-suicides by men involved in custody disputes and demonstrations outside the court" (Milburn 1998), all seem to indicate that a closely guarded judicial process is not enough. Participants in the institution must "buy-in" to it to accord it legitimacy. That is, a cognitive element is also necessary. Similarly, tribunal officers (essentially judges) working for the Australian Refugee Tribunal report that new immigrants facing the Tribunal act as if they have no real basis on which to respect that body. Claimants appear to understand neither what is going on, nor the basis on which the tribunal makes its decisions. Instead, they act as if they are simply hoping that this coercive body is sympathetic to their cause (Kissane, pers. comm. 10 Nov 1998).² To them, the tribunal is not an institution, just an instrument of force. Just as Stinchcombe's critique suggests that an institutional model must account for explicit material factors, a counter-critique of Stinchcombe suggests that those material factors must be linked explicitly to particular cognitive processes in order to be legitimate and to become institutionalised. The material and cognitive aspects of institutions are not an either/or proposition. People acted on by a court need a cognitive map that converts the court's mixture of ritual, coercion, and strategic action into a legitimate institution. As such, while institutions may well have a material basis to their action (Sewell 1992), they cannot be wholly material. Such a counter-critique also suggests that any cognitive model of

² Brendan Kissane sits on the Australian Refugee Tribunal.

institutions must be able to account for differences between social groups in the way they understand and enact the institution of interest.

While the new institutionalists point to the centrality of cognition in their models of social structure, the theorization of human cognitive processes in their models is surprisingly weak. In particular, while many contemporary theorists talk of a reciprocal interaction between cognition and action, they are extremely vague when it comes to the “cognition” part of their argument. Berger and Luckmann (1967) are probably the most specific. When they define institutions as “a reciprocal typification of habitualized action by types of actors” (p.72) they flag the importance of categorization processes (hence the talk of typification and types) in our understanding. Subsequent authors are much more vague about the underlying cognitive processes. For example, Giddens (1984:377) argues that “structure exists only as memory traces, the organic basis of human knowledgeability, and as instantiated in action.” In the same vein, Sewell (1992), in his critique and synthesis of the work of Bourdieu and Giddens, defines structure as having two parts, cognitive representations (schemas) and material resources. All of these authors appear happy to leave the “cognition” part of the equation to the psychologists (see also DiMaggio 1997; Mohr 1998).

In contrast, the central contention of this paper is that many (but not all) of the above disputes and critiques can be reconciled by taking the psychologists and cognitive scientists seriously. The aim of this paper, then, is to see the extent to which the incorporation of contemporary thinking in cognitive science into institutional theory can shed light on the above issues. The argument will proceed in four stages. The next section presents Berger and Luckmann’s original model and discusses and critiques some subsequent elaborations

of it. From this will come a definition of institutions. The second section takes a simple case from the literature. It involves soldiers standing to attention before firing a gun. It appears to represent, and was claimed by its author to represent, institutionalized behavior. On closer examination, however, we'll see that this is much less clear than it first appears. Our analysis of this simple case will point to the need to separate pragmatic knowledge (which is concerned with "things") from symbolic knowledge (which is concerned with social relations). An implication of this separation will be that institutionalization involves bringing these two types of knowledge together by turning symbolic knowledge into pragmatic knowledge. The following two sections discuss these two types of knowledge. Pragmatic knowledge is best understood using frame theory (Barsalou 1992b), while symbolic knowledge requires a more open theoretical approach, such as is offered by sensemaking theory, strategic choice theory, or post-modern theories of action. The model of pragmatic knowledge will enable us to develop a coherent model of institutions which can deal intelligently with phenomena such as the way power is enacted within institutions, the way different people enact the same institution differently, and the way different institutions are linked to each other. The model of symbolic knowledge, on the other hand, will highlight the difficulties of institutionalizing new practices, especially in open systems, such as organisations, and will, if nothing else, show why the "new" and "old" institutionalisms are so far apart.

Contemporary models of institutions

The starting point for our discussion of institutions will be Berger and Luckmann's (1967), elaboration of the work of Schutz (1962). They suggested that institutions could be modelled as the cognitive representations of sets of routinized behaviors, as represented by

parties associated with those behaviors. More specifically, they defined an institution as “a reciprocal typification of habitualized action by types of actors” (p. 72). In essence, this means that the process of institutionalization involves the routinization of sets of behavior, the creation of categories to describe the routinized behaviors, and through that process, the creation of categories to describe the various actors involved, with those categories or actors referring to differences in categories of behavior (Tolbert and Zucker 1997).

Contemporary authors build on Berger and Luckmann in different ways, and it is important to critique them. First, some authors, similar to Berger and Luckmann’s original formulation, define institutions as a set of routinized behaviors that are encoded cognitively (eg. Barley and Tolbert 1997; Jepperson 1991). That is, they argue that the behavior must be repeated through time. While Barley and Tolbert believe that we should treat people as reflexive agents (and therefore argue for recognizable rather than routinized behavior, as would Giddens), they propose a research methodology which makes a contrary assumption. Since their argument for encoding is the least deterministic of authors arguing for an essentially deterministic position (ie. cognition determines behavior), an effective critique of it is also a critique of others’. Therefore, I’ll consider it in depth. Having stated initially that their approach is strictly Giddensian, they move to the empirical question of studying institutionalization. They say:

“With regard to day-to-day interactions, it is useful to think of institutions as being enacted through scripts (Barley 1986) ... [where] scripts are observable recurrent activities and patterns of interaction characteristic of a given setting...

“The notion of a script usefully substitutes for Giddens’ more abstract notion of modalities because scripts can be empirically identified, regardless of the type of actor or level of analysis in which a researcher is interested.” (pp. 97-98) (emphasis added)

They then propose that we study institutionalization by studying the way these scripts vary over time. That is, in constructing their empirical program, Barley and Tolbert take two steps away from Giddens' original formulation. First, rather than focus on the institutions (cognitions) themselves, they suggest we should focus on the way they are enacted. Second, in as far as we examine the behaviors, only the recurrent, patterned, and observable parts should contribute towards our definition. This has proved to be a very successful approximation for some empirical studies (eg. Barley 1986). The problem with this approach is that it removes all measurement of meaning from the empirical program. In so doing, it introduces the possibility that people's behavior doesn't reflect their thinking at all, but either represents complete cognitive disengagement or mindlessness (Langer 1989), or it represents a de-coupling of cognition and action (as we will see when we discuss the gunners below). That is, if we assume, either for methodological simplicity or for theoretical reasons that it is sufficient to equate institutions with routinized behavior, we bring to life Stinchcombe's critique of the "new" institutionalism, namely that researchers are simply capturing empty meaningless routinized behaviors.

To see this, imagine conducting a comparative study of courts in the U.S., Canada, Australia, New Zealand, and England. To a naive observer -- a first-time witness, or a researcher sitting in the back row -- a huge amount is going on. There are people in black robes, some with wigs, some without. There are policemen. People talk and behave in particular ways and in particular orders. These are the regularized, scripted, behaviors that a researcher following Barley and Tolbert's methodological advice would see. These behaviors would differ between the five countries, and probably between courts in those countries. Unfortunately, they are just rituals that comprise one part of the institution, and in

many ways, the least important. Such a study would tell us very little about the important differences between the institution of the courts in the five countries (see also Stinchcombe 1997). For the barristers, solicitors, judges, and court officers, all these rituals are background. They probably don't even notice the rituals unless they are violated in particular ways. By definition, as professionals, their job is to create variation as much as it is to conform. As such, little or none of their important behavior is reproduced through time. They are paid to operate creatively against that background to create the outcomes they desire. This means that the important things that go on in the court – the enactment of schemas of law and evidence, the bringing into play of resources (observable possibly by counting the number of lawyers on each side and the price of their clothes) and the judgements – are not legitimated in the routines of the court's operations, but in the exceptions and variations.

This same problem can be seen elsewhere in the institutional literature. Consider, for example, Hoffman's (1997) study of the adoption of Vice Presidents' offices for Health, Safety and Environment by corporations in the oil and chemical industries. In as far as they are similar, he is pointing clearly to mimetic and normative isomorphism as predicted by DiMaggio and Powell (1983). The problem is, they are not similar. The parts that are similar - the name of the office - tells you nothing about what goes on inside. At one point in the early 1990's, AT&T had such a Vice-President, and his entire staff consisted of half a secretary. In other firms, at the same time, such a position attracted enormous operational responsibilities. In some firms, these Vice Presidents have power, while in others they do not. In some firms they enact a ritual which is about following fads about appropriate organizational forms (Abrahamson 1991; Meyer and Rowan 1977), while in others they

enact the firm's solution to its environmental problems. Vacuous rituals and strategically important practices become empirically indistinguishable.

A second set of authors argues that institutions are both a set of cognitive representations and the behaviors they generate (eg. Friedland and Alford 1991). This is not tenable because these authors assume a singularity of structure/action loops, rather than a multiplicity. That is, people have a choice of multiple schemas to enact when subject to a given stimulus (Sewell 1992), people can enact multiple behaviors from a given schema (Barsalou 1992a), and people can subject a given behavior to multiple interpretations (Nisbett and Ross 1980). If, empirically, we reduce multiple behaviors interacting with multiple structures to single structure/behavior loops, we risk, once again, driving meaning out of our institutions.

Finally, some subsequent authors (eg. Bourdieu 1977; Giddens 1984; Sewell 1992) do not require that the behaviors be reproduced, but only that the cognitive representations be reproduced and the behaviors correspond to the cognition. In other words, the behavior need not be routinized, but simply recognizable to reflexive agents. That is, on seeing a particular behavior, the actor attaches it to a given category of behaviors. This position will be adopted here.

In summary, in the above paragraphs, I have presented arguments for defining institutions as both cognitions and behaviors, as cognitions that produce routinized behaviors as cognitions that produce recognizable behaviors, and, earlier in the paper, as something much more material. Of these, only one is not susceptible to critique. As such, consistent with authors

such as Giddens, Sewell, and Bourdieu, I argue that institutions are social structures that regulate behavior. They exist as cognitive representations that are used to generate actions. Those actions, in turn, serve to re-generate the cognitive representations.

An example of institutionalized behavior

In this section, I will argue that when people act, they enact two types of knowledge. One, which I will label pragmatic knowledge, comprises the meanings they ascribe to the behaviors they enact, and the objects on which they act, in and of themselves. The other, which I will label symbolic knowledge, comprises the meanings they infer about their social situation as a result of acting. Institutionalization involves both the creating and coupling of these two representations, so that symbolic knowledge is converted to pragmatic knowledge.

Consider a famous example from the institutional literature. In “Gunfire at sea: A case study of innovation.” Morison (1997 (1966)) writes of a World War II time-and-motion specialist who was commissioned to improve the effectiveness of gunners operating artillery drawn behind trucks. The specialist could not understand why the soldiers stood to attention for a full three seconds before discharging their guns -- until he was told they were “holding the horses” (a left-over behavior from the days when the guns were drawn by horses which would bolt when the gun was discharged).

The behavior was clearly institutionalized in that it was sufficient for one person to tell another that this is simply how things are done (Zucker 1991 (1977)) for it to be done. The relevant institution was the military hierarchy. The case creates a theoretical conundrum however. The central claim of the theory is that there is a reciprocal interaction between

cognition and action. But, how does that happen here? The outcomes of the organization, in this case standing to attention, bear no obvious resemblance to the institution or its reproduction. It is very hard for this author to see how, by standing to attention when it isn't necessary, soldiers are enacting schemas about hierarchy. The likely little picture in their heads is unlikely to have much to do with institutional reproduction.³

Their interpretation of that little picture is another story. What makes these cases interesting is that it is easy to decouple the pragmatic and symbolic elements of the practice. That is, pragmatically, and standing outside the system, standing to attention is not globally rational. A pragmatic explanation won't suffice. We can't come up with a way of understanding the actions, internal to the system, which makes sense. To explain the behavior, we might invoke one of the following three scenarios:

The first possibility is that the soldiers believe the practices aren't sensible, but choose to comply anyway. They may fear sanctions, or may not particularly want to be efficient, or may be enacting a form of resistance known as "flannelling" (Bailey 1993) where they carry out the activities with such enthusiasm that they bring the organisation to its knees. We could insert many types of ironic action here if we wished. In this case, we would say, in

³ The same argument could be mounted using Zucker's (1991 (1977)) famous experiment in which she asked subjects to estimate the length of a line projected on the wall of a darkened room. In reality, there was no line, but just a single point. The illusion of the line was created within the eye by the autokinetic effect (Sherif 1935). Zucker used an informant to persuade her initial subjects to believe that the line was longer than would be expected, given results from her control group. She then measured the extent to which these estimates decayed between subjects (as successive pairs of subjects estimated line length together) and through time (by having subjects repeat the experiment a week later). She found that line length estimates were more stable when subjects believed they were in a formal organization. Zucker created the independent variable by telling subjects which condition they were in, and by scripting certain behaviors consistent with the subjects' prior beliefs of what that experimental condition entailed. For instance, in the "office" condition,

contrast with Morison's assertion, that institutionalization is low, since it would be extremely easy to change the behaviors (Jepperson 1991). The new behaviors would need to be explained, and some proceduralized knowledge would need to be unlearned and relearned.⁴ In this case, the relevant cognition and action are decoupled, and so there is no cognition to be modelled.

The second possibility is that the soldiers believe the practices are not sensible, but choose to enact the routines anyway because they believe the officers have access to a bigger picture that they can't comprehend. That bigger picture inverts the logic of the situation. Therefore, in the face of bounded rationality, they trust. Other examples of this sort of behavior include companies' strategic use of mimetic isomorphism, (ie. just because this behavior seems crazy, there are other processes (eg. herding) which make it sensible, even though managers can't see them). Believing you are stupid also falls into this category. In such a system, the soldiers' focus on carrying out the behaviors involves proceduralizing their knowledge as much as possible by turning it into skills. That is, they try to learn the behaviors so well that they disappear from consciousness. In terms of their pragmatic knowledge, the behaviors might as well be mindless (Langer 1989). If they are mindless,

subjects were cued that behaviors persist in organizations, were given job titles, were addressed in terms of numbers instead of names, and were taught roles associated with those titles.

⁴ The cognitive scientists differentiate semantic knowledge (generalized knowledge of the world) from episodic knowledge (memories of particular events and instances) and proceduralized knowledge (See Barsalou 1992a p. 128). Proceduralized knowledge involves small behavioral routines which are learned to achieve particular behavioral outcomes. Examples include automatically understanding the meanings of words without having to retrieve their definitions, recognizing particular voices without having to work out whose they are, depressing the clutch when changing gears without consciously deciding to do so, tying one's shoes, and so forth. We would expect that soldiers might take some time to stop themselves from standing to attention because the behavior has become encoded as proceduralized knowledge, much as it would take the reader some time to learn a new keyboard layout on their computer. (See Barsalou 1992a pp.68-73,

then people can turn off their brains, and so we cannot talk about reciprocation between cognition and action in any useful way. Rather, the cognition they are enacting has something to do with trust.

The third possibility is that the soldiers suspect the procedure, but they believe their interest is less important than their superior's or the collective interest. That is, they have been socialized to conform. Alternatively, they may believe the commander has sufficient power to be able to shape the future, so it is worth their while to subsume their interests to the commander's. In this case, the structure they are enacting is the compliance structure of the military, and their own disempowerment within it.

While institutionalization is low in the first case, there are two ways of looking at the latter two. The first is that the soldiers have taken leave of their senses and have adopted a "formal" rationality instead of a "practical" rationality (after Weber)(see Scott 1992). In so doing, they have chosen to decouple the symbolic meaning of their actions from the pragmatic consequences. The result is that it doesn't actually matter what the ritualized behavior is. All that matters is that they enact the behavior in accordance with the symbolic order. Alternatively, rather than seeing the behavior as mindless, we can simply attribute a different size to the domain of rationality. In the latter two cases, the domain of rationality has simply contracted. People pick a boundary for their rationality, and act rationally within that boundary. They then construct their identity around that boundary (or are socialized to do so). The definition of "rational" behavior changes with the size of the boundary. Small-

149-150). For a more radical differentiation of proceduralized from semantic knowledge, see Cytowic (1993).

minded people are happy with small boundaries and so are good at complying. Broad-minded people see larger boundaries, and so hate to comply. If this is the case, the belief that is being enacted is a belief about the appropriate size of the system to be considered.

Whatever interpretation one chooses, however, the latter two cases point out clearly that there are two types of understanding. People have understandings about the pragmatic stuff with which they are dealing. The soldiers recognise the gun in a particular way, they understand why they are doing things in another way, and they have particular understandings of the people around them and their capabilities. These pragmatic understandings can all be evaluated against the nominal objectives of the organization. It is very clear what is going on within this pragmatic world, but it might be hard to make sense of it, particularly if that world is open to a larger world that defines things differently. People also have understandings about the symbolic world of their social relations. These social relations motivate them to act on the pragmatic world. If those social relations take on the object-like characteristics of the pragmatic world (Zucker 1991 (1977)) and those object-like characteristics are congruent with that pragmatic world, then the social relations are institutionalized. In the next section, we discuss the pragmatic world, with a view to understanding both how people construct the objects that are embedded within institutions, and to understanding what a fully-institutionalized institution might look like. In the final section, we consider the symbolic world, and its radical difference from the pragmatic world.

The pragmatic world

The model of the pragmatic world builds on an assumption in the institutional literature that an institution is a social object (eg. Jepperson 1991). We must make two fundamental choices about the models of cognition we use to model these objects. First, we must select a level of analysis. Do we focus on neurological models (limbic system-driven vs. cortex-driven behavior), neuro-physiological models (eg. models of synapses and ion channels), abstractions of neurophysiology (e.g. connectionist models), models of unconscious cognition (e.g. models of schemas, scripts and other cognitive structures), or models of conscious cognition and behavior? Second, we must select an epistemological orientation that links our selected level of analysis to the levels above and below. In this case, the choice is between embodied models (which assume that the relevant cognitive structures are derived fundamentally from experience) and disembodied models (which assume that they come from innate physiological processes).

The first choice is relatively straightforward. We are most interested in understanding the relationship between cognition and behavior. Since 95% of cognition is unconscious (Lakoff and Johnson 1999), we should look at that level. The second choice is much more difficult since some cognitive processes are clearly innate (such as perception of primary colors, responses to movement, perception of lines and planes (Hubel and Wiesel 1959), and hearing in terms of pitch and volume). Other phenomena, on the other hand, point towards embodied thinking. In particular, all visual, linguistic, and aural cognition (if not all cognition) appears to involve the use of categories. The fact that all categories are graded (e.g. a school chair is a better example of a chair than a bean bag) and not all categories have clear boundaries (e.g. there is no exact boundary between blue and green) is taken by

some scientists as clear evidence for embodied thinking (Clark 1998; Lakoff 1987; Lakoff and Johnson 1999; Varela and others 1991), rather than disembodied approaches (Chomsky 1965; Searle 1995). As well as having stronger empirical support, embodied models make much more sense for a branch of theory that presumes understanding is socially-constructed. They will be adopted here.

Barsalou's (1992b) frame model appears to be a satisfactory model of cognition for our purposes. It can be integrated well with connectionist models at the next level down (Clark 1993). It can explain behavioral anomalies at the next level up, such as the findings of prospect theory (Tversky and Kahneman 1981) and the fact that grading within categories is not necessarily stable (Barsalou 1987). It is parsimonious. It can explain the behavior of ad-hoc categories (eg. things to take when visiting my aunt in a country hospital) (Barsalou 1983), and can explain the fact that grading occurs outside categories (eg. blue is a worse example of red than orange). Competing approaches such as feature list models (eg. McCloskey and Glucksberg 1979; Tversky 1977) cannot pass these tests. Most important for our purposes, it can generate a number of empirically verifiable emergent phenomena such as prototypes (the best exemplar of a category), taxonomies of categories, category boundaries, and the idea of a basic level. These will become central to our definition of institutions. Furthermore, if we combine it with Lakoff and Johnson's work on embodiment and metaphor (Johnson 1987; Lakoff 1987; Lakoff and Johnson 1980; Lakoff and Johnson 1999), we can explain the relationship between categories that are not clearly related (eg. between a lawyer's speech in a courtroom and a professor's lecture in a lecture theatre) and hence start to explain the cognitive aspects of legitimacy and start to incorporate power into cognitive models.

Barsalou's basic assertion is that all phenomena are represented cognitively as frames. A frame contains a set of attributes. Each attribute has one of a number of alternative values. For example, a courtroom's attributes include judge, court officers, a room, counsel, litigants, witnesses, an audience, and a jury (figure 1). Attributes take on values. For example, "audience" can take on values of big or small. Alternatively, attributes can act as frames, which have further attributes. So, for example the attribute "judge" is a frame with attributes of number, and dress. Dress can take on values of formal or informal, but formal and informal dress are also frames, each with their own attributes and values. Similarly, the room has attributes of size, formality, and so forth. With the exception of some particular values which are assumed to be hard-wired (eg. primary colors, pitch and volume of sound, etc.) all attributes and values are frames which are capable of being decomposed further, *ad infinitum*.. Similarly, individual attributes and values can appear in multiple frames. So, for instance, formal dress is an attribute of judges, lawyers, debutantes, and opera goers.

These sets of attributes and values are constrained in two ways. First, there are value constraints. The set of values that attributes can take is constrained by the values that other attributes take. So, for example, in the U.S., when judge is constrained to a number of nine and dress of formal, the room is constrained to large, and the architecture to formal.

Second, there are attribute constraints, which determine the attribute combinations that can exist in a frame. For example, in courts where there are no witnesses, there can be no jury.

By assigning values and attributes to the frame, and by respecting attribute and value constraints, it is possible to generate all the various instances of the frame. For example, while we generated the full bench of the U.S. Supreme Court above, an administrative

tribunal might have one judge, informal clothes, a room with simple architecture, and no jury (figures 1b, 1c, 1d).

The final piece of the model is provided by Lakoff and Johnson's work on metaphors (Johnson 1987; Lakoff 1987; Lakoff and Johnson 1980; Lakoff and Johnson 1999). They argue that many of the relationships we construct in our lives are metaphors to particular schemas learnt as part of our very early childhood experiences. The "container" schema, for instance, defines the basic distinction between "in" and "out". Johnson (1987) argues that we experience our bodies as a container, as well as occupying containers the whole time. A court is a container. The "part-whole" schema points out that wholes are made up of parts (in this case, room, judge, advocates, officers, litigants, etc). The "link" schema indicates that some parts are joined to others. The judge and the lawyers are linked to particular social classes, interests, ways of knowing, and sources of power outside the courtroom. The "center-periphery" schema comes from our bodily experience of a trunk and limbs. Similarly, judges and plaintiffs are central to a court, while court reporters are peripheral. The "source-path-goal" schema indicates that all our objectives (and many of our processes) are represented as spatial destinations at the end of a path. So, the court follows due process until it reaches a point where the jury can decide. Other important kinaesthetic image schemas include the "up-down" schema, a "front-back" schema, and a "linear order" schema.⁵

⁵ The argument presented here can be differentiated from a post-modern argument, which would argue against naturalistic categories, or an approach which centers the body. As will be clear by the end of this paper, these two positions occupy opposite ends of a spectrum.

We can fold their argument into Barsalou's by inferring that the frames themselves, and the relationships between the attributes in the frames, are dictated by metaphors to these schemas. That is, not only will the attributes and their relationships be constrained by the logic of the metaphors, but any cultural (or physiological for that matter) prejudices towards particular schemas will manifest themselves in metaphor choice. For example, if we see a court as a container, its contents include a judge, jury, architecture, etc. If, on the other hand, we were to decide that a court is a conduit: a place where applicants go in one end and get spat out the other -- as many refugees undoubtedly see a refugee tribunal -- we would generate a completely different set of attributes and different values for those attributes. We might place much more emphasis on judicial process, for instance. Judicial process isn't incorporated into "Court" through a part-whole schema, as it would need to be if a court were a container, but rather through a source-path-goal schema. It is an empirical question as to which sub-cultural groups are more likely to enact the container over the conduit.

Each of these attributes and values, however, because they exist in other frames, or because of explicit link schemas, makes a reference to those other frames.⁶ Such a link appears, linguistically, as a metonymy, which can be defined as a part standing for the whole (Lakoff 1987) and may involve something concrete standing for something abstract. For example, "the crown" stands for the entire institution of government and royalty. This metonymy can draw parallels between institutions. The formal clothes of a judge, while radically different

⁶ Cytowic (1993) takes the argument one stage further. He argues that because certain signals share channels in the limbic system in the brain, similar parallels occur across the senses, not just concepts.

from the formal clothes of a debutante, have aspects of their frame in common. The manner of address of the various participants is linked to the manner of other social actors with similar classes and roles (eg. politicians, physicians, university lecturers, etc.). It is through these linkages that power and legitimacy is transferred from one institution to another. For example, the state rests its case, rather than the prosecution. In so doing, the prosecution invokes both everything that is legitimate about the state, and the power of the state. That is, the prosecution is not just an intelligent agent of the state but also represents its power and legitimacy. In much the same way, the wigs and robes of the judges and barristers stand for the history of the courts, going back hundreds of years, and all the power and legitimacy that represents (Yablon 1995). Frame analysis enables us to infuse institutions with power.

Like metaphor, metonymy is a vehicle by which institutions go from being closed to open cognitive systems. Once a cognitive system is open, we cannot simply talk about a reciprocal interaction between cognition and action. We have to start seeing actions as interacting with entire networks of meaning. The formal behavior of the judge is linked to the formal behavior of the debutante. As debutante's balls go in and out of fashion, the meaning of formal judicial garb changes. Similarly, the power of the judge rises and falls with the status of the profession and the legitimacy of the state.

In addition to drawing parallels between frames, metonymy is also used to distinguish one frame from another. Metonymy can be used to de-emphasize particular metaphors. Consider, for instance, the difference between courts and tribunals. Nominally, the only difference is that a tribunal may only rule on narrow areas of law (eg. the Australian

Administrative Appeals Tribunal rules on administrative law, the Anti-discrimination Tribunal rules on equal opportunity law, the Refugee tribunal rules on immigration law, etc.). When they were created, in Australia in any case, their architects were very mindful of the metaphors which were, and which were not, carried across from the prototypical courtroom. That is, the difference between a court and a tribunal is both practical and symbolic, and those substantive differences enact the symbolic differences. Hierarchy and formality were radically de-emphasized, for instance by using flat rooms and the judges and lawyers wearing street clothing. Similarly, when the Australian Family Court was set up, it was to be less of a prototypical court than the Federal Court. It would de-emphasize the traditional process- and evidence-based metaphor of justice in favour of a more emotionally satisfying one. Consequently, judges and barristers didn't wear robes and wigs.

Each of the aspects discussed above -- the nature of the frame, the attributes within it, the values they can take, the constraints on the attributes and values, the relationships between the frames, attributes, and values, the nature of the relationship between these various elements and other frames in society -- is contestable. The symbolic intent is one thing, while the particular interpretation is another. When the Victorian Accident Compensation Tribunal (which ruled, among other things on workplace accidents) came under attack from a newly elected conservative state government intent on industrial "reform", one of the judges' first responses was to don robes and wigs. Formal clothing went from standing for formality to standing for legitimacy. Similarly, when Family Court judges and lawyers started to receive death threats and letter bombs, the ceremonial garb went back on almost immediately. In part, this was to provide camouflage, since they looked different in civilian clothes. In large measure, however, it was to emphasize their authority and legitimacy, and

to intimidate would-be assassins. As with the Accident Compensation Tribunal, the frame gets reconstructed in the light of ongoing events.

Just as different groups might contest a given meaning for a frame, we should expect different sub-cultures (Schein 1990) to construct different frames from the same material phenomenon (Kay and Kempton 1984; cf. Sewell 1992). Their different histories will lead them to attend to different cues and make different interpretations. A first-time litigant's or witness's framing of a courtroom will be a fractured amalgam of what their lawyer tells them to expect to see and hear, what their friends told them about their court experiences, expectations of how people should speak in situations like this, as learned in lecture theaters, what they have seen on the television news, and their important gleanings from *Ally McBeal*, *Perry Mason*, and *Judge Judy*. (That fracturing is the province of the symbolic world, discussed below.) That of an experienced advocate will, of course, be radically different. If the different participants in an institution are relatively loosely coupled (Weick 1976), there is no reason why these differences in interpretation shouldn't be sustained for long periods. A vast literature emphasizes the way different social participants assign different frames to a given phenomenon in much this way. For example, Henderson and Clark (1990) inferred that engineers from different photolithographic equipment manufacturers invoked different attributes for the various parts of their equipment. Similarly, Dougherty (1992) observed similar differences between different professional groups focussing on a particular innovation.

As such, the frame approach gives us a tool to see the way in which different players interpret a given set of practices, and the way sets of practices in society are linked to each

other. Notwithstanding, frames become much more interesting when we look at their emergent properties.

Emergent characteristics - prototypes and taxonomies

We can now move up a level, from the level of cognitive representation to something that is more behavioral -- the thing that is represented. Just as Berger and Luckmann saw categorization as the key to institutionalization, cognitive scientists see it as the fundamental variable in all cognition (Barsalou 1992a; Lakoff 1987). Rosch defines a category as “a number of objects that are considered equivalent” (1978, p. 30). “Dog”, and “animal” are examples of categories, as are institutions like “court”, “judicial system”, and “organization”. Rosch asserts that people classify objects into categories because it takes less cognitive effort to have the category stand for all the members. Furthermore, she, along with all proponents of embodied models, asserts that individuals construct categories on the basis of their perception, rather than the attributes lying latent in the objects. In particular, people perceive their world to be structured because they perceive certain sets of stimuli as being more likely to occur together than others (for example most people are more likely to associate wings with feathers than with fur). Put differently, certain attributes are more likely to go together in a given frame. This structuring provides the basis of category formation. Underlying a category will be a frame with the same name (if either has a name).

Rosch has observed that we organize categories in taxonomies. A taxonomy is “a system by which categories are related to one another by means of class inclusion” (1978, p. 30) and has vertical and horizontal dimensions. Vertically, categories are organized into levels of abstraction such as collie vs. dog vs. mammal vs. animal. So, if a new type of organisation

were to be introduced to a field (e.g. a virtual bank trading only on the internet) or if a new set of practices were to be introduced to an existing set of organisations (e.g the introduction of mediation and other forms of alternative dispute resolution to the court system), we would expect people to make sense of it by inserting it into such a taxonomy, and that institutionalization would involve elaboration of that taxonomy. So, for example, if mediation were to become institutionalized, we could expect that it would be organized into a similar hierarchy, such as divorce mediation vs. mediation vs. alternative dispute resolution vs. dispute resolution system vs. system of justice vs. law vs. the state. Empirically, scientists have observed that each level in a taxonomy is included entirely within the level above.⁷ The frame model above predicts this.

The key level of abstraction is the base level (Brown 1958). Most knowledge is organized at the base level (eg. chair, running, tall) with the subordinate levels (eg. kitchen chair, dawdling, gigantic) and superordinate levels (eg. furniture, moving, size) being derived from that. The base level is the level of maximal contrast. It is the level at which we perceive maximum similarity within a category and maximum differences between them. This has been measured for physical objects using a number of psychological criteria such as Gestalt perception, the ability to form a mental image, motor interactions, and ease of learning, remembering and use (Lakoff 1987; Rosch 1978). Base level objects also tend to have simpler names (dog, cat, court, mediation) compared to subordinate (Blue healer, Siamese,

⁷ It is important to note that people can classify an object in several taxonomies. For example, zoologists classify animals both on the basis of their form, and their location on the evolutionary tree (Gould 1983; Lakoff 1987). Similarly, it is possible to classify mediation both within a taxonomy involving the state judicial system and within an 'alternative dispute resolution' taxonomy which hardly involves the state at all. The meaning of mediation may well change with the taxonomy.

criminal court, divorce mediation) and superordinate (mammal, judicial system, alternative dispute resolution) levels, indicating that this is the level in most use historically. Children learn names for things at the base level first, and base-level items are processed both more accurately and more quickly. While base level objects are quite complex and highly structured, we appear to remember them as the frame that represents them, not as combinations of primitives. A rose is a rose, not the sum of its smells, parts, and name.

The identity of the base level sometimes varies by cultural group. For instance, in terms of the cognitive measures described above, urban dwellers are likely to treat “tree” as the base level, while forest dwellers will treat individual species as basic, and specialist botanists will treat a more finely detailed level as basic for particular sub-domains of their experience (Dougherty 1978). In much the same way, we might expect the people who work within the court system (lawyers, judges, staff) to have different base-level from people who principally consume the courts’ services (plaintiffs, defendants, witnesses). Similarly, for social objects, i.e. institutions, we expect that base level to be much more poorly defined than for physical objects, because the object is so much more poorly defined.

Leaving aside these specialization effects, the base level will generally be the same across cultures and is normally the level with which people have motor interaction. It is the level people think of first when defining objects. In the social world, this means that people are probably much more comfortable thinking of a world of people and organizations, since they are the things they interact with, than of groups, multi-national corporations or innovative milieux.

In addition to vertical structure, categories have horizontal structure. Some categories have clear boundaries (eg. bird) while others have fuzzy boundaries (eg. red). While it is unambiguous whether or not something is a bird, it is often unclear whether or not something is red. Even if the boundaries are clear, however, some members of a category are better examples than others. That is, categories are graded. A robin is a better example of a bird than a penguin, a chicken, or an emu. An elm is a better example of a tree than a palm or a Morton Bay fig. The most representative member of a category is known as the prototype. The robin is close to the prototypical bird in North America (Rosch 1978), the desk chair is close to the prototypical chair (Rosch 1978), and the criminal jury trial is close to the prototypical judicial proceeding, for someone brought up in the adversarial system. There is significant empirical evidence that people measure the quality of membership of a given category member by comparing it to the prototype (see Barsalou 1992a; Lakoff 1987). That is, the prototype is not only the most representative member, it is also the point of reference. A trial without a jury is a poorer example of a court case than one with a jury. Prototype and grading effects are observed not only for physical objects, but for all objects, including abstract concepts such as causation, emotions such as anger, and linguistic variables such as phonemes (sounds) and syntactic elements (eg. nouns) (Lakoff 1987). Barsalou (1992b) argues that the prototypes for a category is the set of attributes which is most important, either because it is the most commonly reinforced, or because it is the first encountered (cf. Bettenhausen and Murnighan 1985), or because it is normatively most important.

Institutions in a pragmatic world

While both material resources and behaviors are important in institutional action, these can be converted rapidly into coercion and rituals unless they are rendered meaningful by cognition. By treating institutions as social objects, and by assuming that they are treated cognitively exactly the same way as physical objects, we can map the above theory directly onto institutional theory. Such a model puts the perceiver at center stage. The institution of the court, or of mediation, is what the perceiver thinks it is. Members of a given sub-culture may share a consensus about the true nature of an institution, but there is no requirement that the different groups agree. For the watchers of *Ally McBeal*, a divorce court is, normatively, something like what they see on the television. As such, if different actors categorise the same behaviors differently, we must reject Berger and Luckmann's assertion that institutionalization entails a reciprocal typification of actors and institutions. Instead, we must look to the system level, at networks of meaning, to discover how actors are typified through their behavior.

For a given sub-group, institutions will be structured in taxonomies. Consider a novel practice like mediation. Vertically, mediation is normally a base-level institution, as are courts, negotiations, arbitration, and tribunals. As such, for mediation to be institutionalized, a superordinate level probably also needs to be institutionalized. In this case, the superordinate institution is alternative dispute resolution. Quite probably, by that time, there will also be subordinate institutions such as divorce mediation and commercial contract mediation. One of the institutions at a given level of abstraction serves as the prototype for the level above. A court case is the prototypical judicial proceeding. For lawyers, mediation is probably the prototypical form of alternative dispute resolution; for engineers,

contract arbitration is probably the prototype; for MBA alumni, it is probably negotiation. Different professions have different socialization histories, and so learn different prototypes. The relationships between superordinate categories can be understood, in the broadest sense anyway, in terms of the relationships between their prototypes. For example, assuming mediation is their prototype, lawyers will understand the relationship between alternative dispute resolution and judicial proceedings in terms of the relationship between court cases and mediation. In addition to serving as the prototype for the level of abstraction above, the prototype serves as the best exemplar at a given level of abstraction. That is, for the lawyers, assuming once again that mediation is the prototype, negotiation is a poorer example of alternative dispute resolution, and is defined in terms of mediation, and not in its own right.

The symbolic world

The above model, in all its intricate detail, provides an excellent template in which we can hang a cognitively-based theory of institutions. Frame analysis has sufficient flexibility to enable different sub-cultures to see either subtle or radical differences between different sets of practices. The subtlest differences involve giving different values to attributes, while the most radical involve completely different frames (and hence taxonomies). In between are frames containing overlapping sets of attributes. Metaphors, link schemas, and other forms of recurrence of attributes across frames can be used to incorporate power and legitimacy into a cognitive model. Phenomena such as the base level, prototypes, and taxonomies create a context with which we can make distinctions between institutions and develop a feeling for the relationships between them.

For a cognitive model of an institution to be reasonably valid, the various elements that make it up need to be tightly coupled. If this is not the case, the underlying cognitions may be less coherent than the behaviors that stand for them. Unfortunately, as our gunners standing to attention show so admirably, this level of cognitive coherence cannot always be assumed in the social world. A cognitive model can explain the various elements that make up their practices. It can explain how they see their roles and their actions, the way they categorize their officers, as well as, more obviously, the various pieces of hardware they are dealing with. Unfortunately, the thing that interests institutional scholars is not the various bits and pieces, but rather the emergent properties of the whole. If it cannot explain the emergent properties, then institutional explanations are reduced to triviality. When we look at the whole, when we see the soldiers holding the horses and try to slot that into the picture, it is no longer clear that such a model can be constructed. Even in a well-regulated army, the coupling may be too weak. The symbolic world and the pragmatic world are possibly separate, even for a small and simple behavioral sequence like firing a gun. We can't know by just observing the behavior.

If the symbolic world and the pragmatic worlds could be brought together, then we could say that the practices had become institutionalized. If they were brought together, then we could imagine a frame -- an institution, a social object -- corresponding to the overall set of behaviors and objects.

As I see it, there are only three circumstances under which that can occur. One possibility is that the elements are coupled together very tightly by short causal chains, so there is no room for symbolic slippage between the objects. Tight coupling will permit the possibility of

a coherent cognitive model. For example, in systems that are dominated by technology, such as high-technology manufacturing, this could occur. Similarly, in systems with high task interdependence, the vast number of people needing to communicate constantly creates the same conditions. The soldiers holding their horses are clear counter-examples because these activities are effectively decoupled from the rest of the organisations' actions. Second, the symbolic and pragmatic worlds are coupled in situations of extremely bounded rationality, such as where people can't understand the technology they work with. In such a situation, their ignorance would create the equivalent of tight coupling, since they would not dare to try to understand. There are probably a few other cases of extremely bounded rationality, but they are rare. Finally, the symbolic and pragmatic worlds can be coupled if the practices are learned in a very strong socialization environment (Van Maanen and Schein 1979). Strong socialization means that the practices are embedded in a vast network of assumptions, which forces them into a coherent whole and excludes alternative understandings from consideration.

Cytowic (1993) gives an example that embodies tight coupling, highly bounded rationality and strong socialization. He is intrigued by the fact that U.S.-trained neurologists are strongly empiricist. If they can't see evidence for a phenomenon on a neurological test, then, as far as they're concerned, it doesn't exist. Some English neurologists, on the other hand, are much more open to the patient's reports of symptoms as indicators of disease. When explaining the difference, he cites no less than eight different assumptions that are taught during the long and closed medical education process (see especially pp. 36-43). These include beliefs about technology, beliefs about the value of new research (versus old), beliefs about the nature of the research process, beliefs about the relative merits of doctors

versus patients, beliefs about subtlety and ambiguity in diagnosis, and so forth. Going with this are two key assumptions by medical insurers which reinforce the technologization of medicine and two broad social assumptions about medicine, doctors and patients. In addition, there are a number of aspects of the situation that would lead to tight coupling – or the appearance of it. These include the highly physical nature of the phenomenon in question (the human brain) and the high risk of creative (but pragmatically unwise) thinking. Because the American and English assumptive worlds can lead to different diagnoses, the patients don't always buy into the doctors' assumptions. Some don't believe there is nothing wrong with them, as the doctor says, but rather that the doctor can't explain what is wrong with them. The coupling breaks down at the doctor-patient interface.

So how do we think about modelling these loosely coupled situations? It becomes useful to think of institutional theory occupying one end of a set of continua. At the other end are theories that allow for much more open models of social action. By loosening the coupling, we are drawn to sensemaking models. By loosening the bounds on rationality, we are drawn to models of strategic action. By loosening the socialization, we turn towards various post-modern theories of action. Given this, it would then be a useful exercise to trace out various points on those continua. That is, what determines the location of a social system on such a continuum? For example, in a recent paper, Cebon (1998) argues that we can explain the mixed success of teams as a vehicle to high organizational performance by seeing them as managerial heuristics. That is, rather than being a set of practices to be implemented, they serve as an organizing device which managers can use to justify and explain various sets of assumptions and practices. The success of a team implementation,

under such a model, would depend much more on managers' abilities to couple practices to assumptions than their abilities to implement the practices.

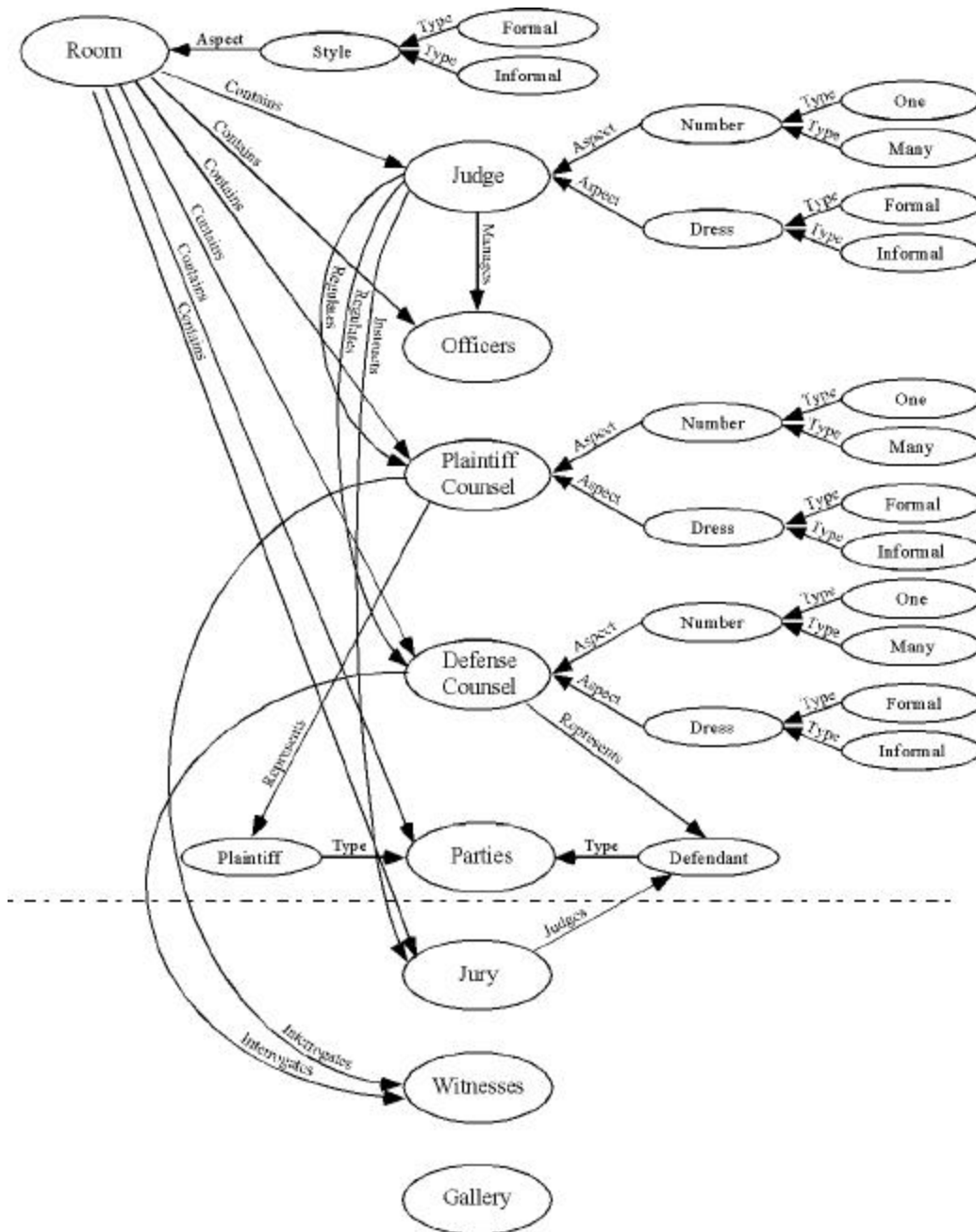


Figure 1a: A courtroom as a simplified frame
 (Attributes below the dotted line are not always present
 Courts with no counsel - ie with unrepresented parties - are less legitimate.)

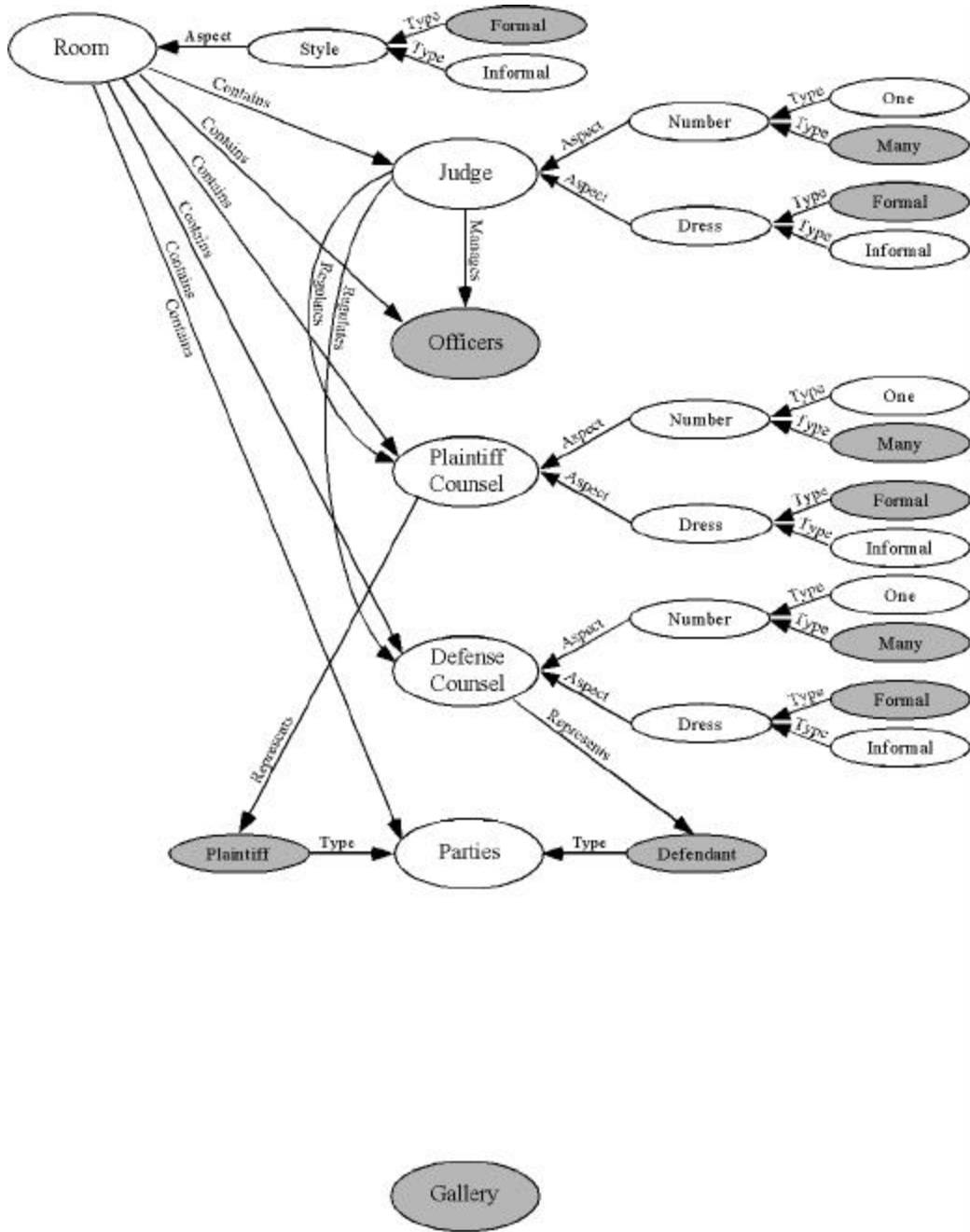


Figure 1B. Court of Appeal (Simplified)

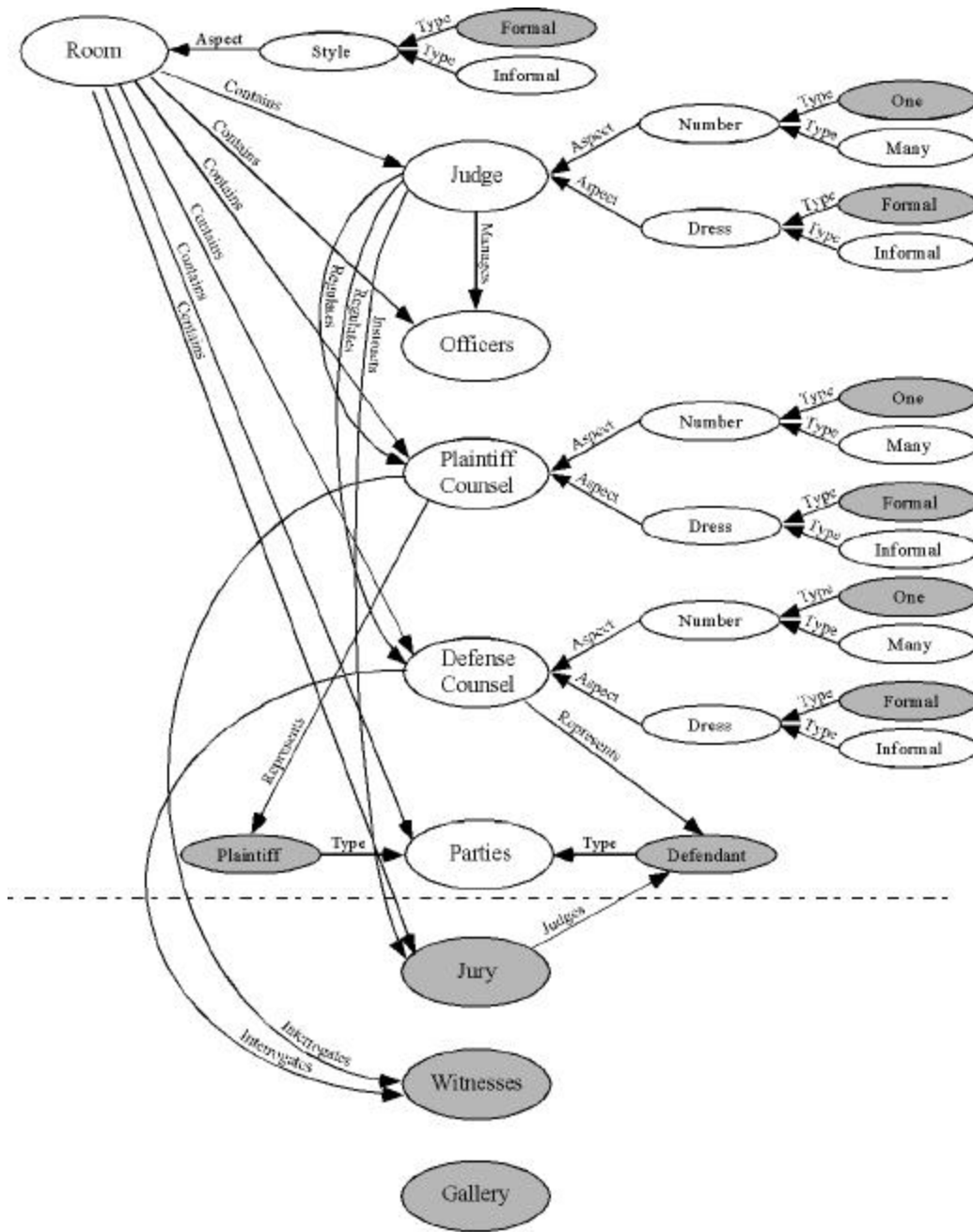


Figure 1 C: Trial Court (Simplified)

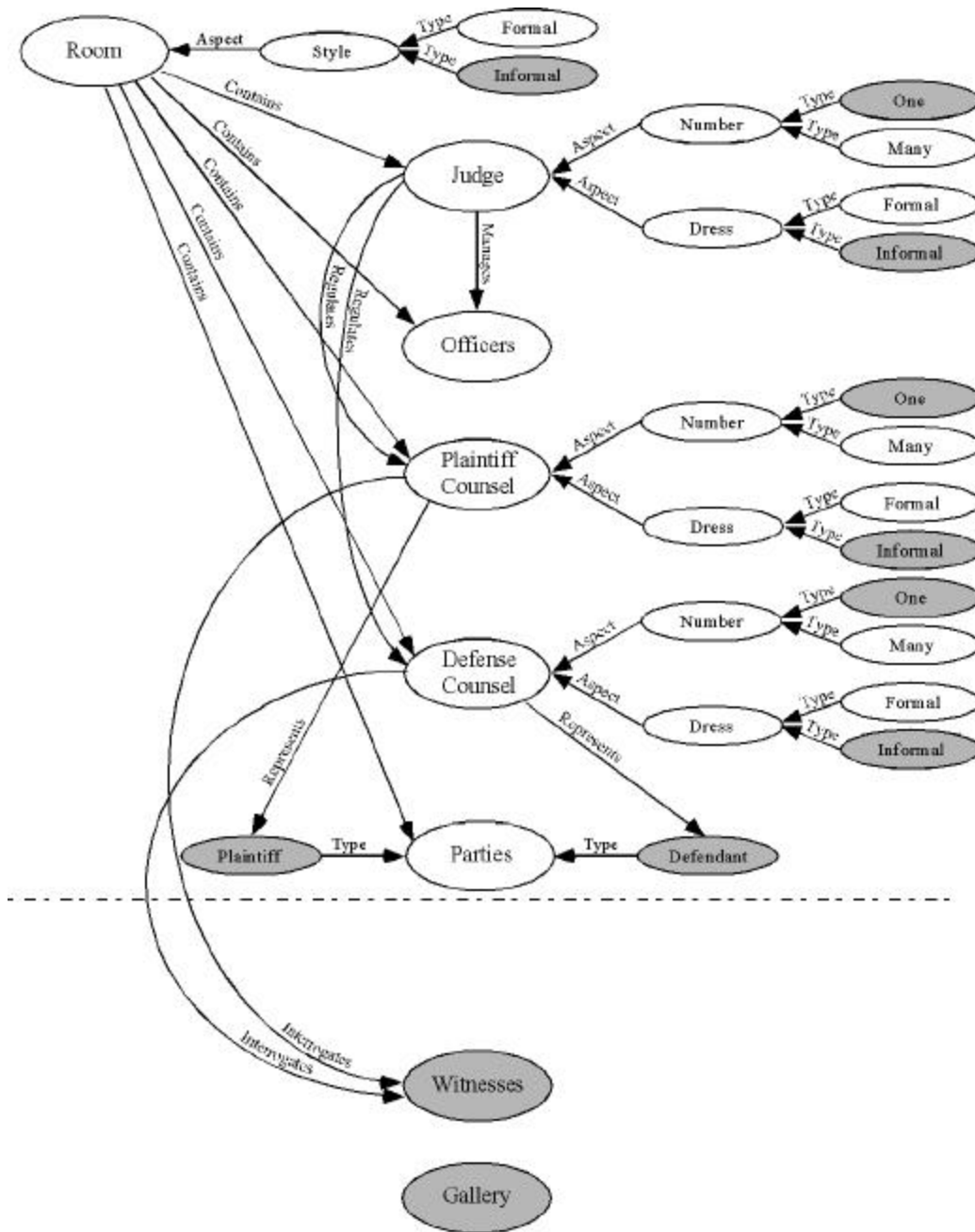


Figure 1 D: Administrative Tribunal (Simplified)

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