PLANNING CRAFT: HOW PLANNERS COMPOSE PLANS

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Abstract Conceiving urban plan making as practical judgment shifts theoretical attention from questions of belief to questions of meaning. How do we make urban plans that combine intelligent coordination with savvy communication to anticipate and cope with urban complexity? Consider adopting a pragmatic approach that relies on coherence to inform the appraisal, comparison and selection that accompany practical judgment. Plans compose the meaning and consequence of future actions. Pragmatic composition combines representation and interpretation to frame problems of urban complexity. Four orientations are described using plan examples: protocol, precedent, prototype and policy.

Keywords composition, frames, plans, practical judgment, pragmatism

Seymour Mandelbaum (2000) argues that we can read the same plan as a policy brief, a story or a design and so learn how the plan fails or succeeds as persuasive written discourse. He reads plans critically to learn how to write them more credibly. Lew Hopkins (2001) argues that we make plans to represent the current decisions we should make based on comparison with other current and future decisions. Mandelbaum analyzes the plan rhetorically and Hopkins analyzes the plan logically. Both acknowledge the role plans play helping us cope with complexity; Mandelbaum the complexities of social and political intentions, Hopkins the complexities of urban development. (My effort combines ideas from both [Hoch, 2007a].) My intention is not to prove something, but to persuade the reader that these distinctions might prove useful first, showing that plan makers integrate both, second that they do so in different
ways and third, that these differences might be combined in ways that offer more useful practical judgments about how to structure the intersecting filaments in Donaghy and Hopkins’s (2006) web of plans.

In earlier essays I argue that seeking rational plans sets up misleading expectations for what we need know to make plans. We humans early on learn what I describe as small ‘p’ planning ability. We use planning to contribute to practical judgments about future action with others. Our plans turn desires and interests into intentions. Many of these take shape under routine conditions (e.g. commuting) and others under random conditions (e.g. gambling). Most fall between. The most relevant kinds for urban planning focus on complex coordination and communication with others – conditions that invite adaptive response (Hoch, 2002, 2007a). We prepare large ‘P’ plans to anticipate and cope with this complexity when we plan for urban development.

How do urban planners compose plans for complex urban settings? How do they combine logically ordered, analytically astute coordination with rhetorically persuasive, socially savvy communication? When we compose urban plans, I argue that we rely upon one or more compositional orientations: precedent, protocol, policy or prototype. We adopt one or more of these orientations to guide how we compose complex urban relationships into a comprehensible and useful representation. The composition of the plan may draw upon the ideas and practices of prior plans (precedent) or adopt existing conventions or rules promoted by competent authorities (protocol). The composition may include formal mandates or informal customs as a guide for action (policy). The composition may introduce imaginative and inventive new ways to tame complexity (prototype). Such innovation may draw upon the artistry of a gifted designer or the savvy of a strategically inventive policy analyst.

I consider these orientations pragmatically, treating plans as products of practical reasoning sensitive to context and consequences. The kind of plan we choose to make reflects the interplay between these practical pragmatic concerns and the framework(s) used to compose it (Hoch, 1984, 1994). Plans offer meaningful advice in the context of specific situations. Throughout the article, I illustrate the value of the distinctions using examples to show how each style of composition binds representation and interpretation together to tame complex situations – what I term compositional frames. The comparisons illustrate how differences in composition shape the meaning and use of the plan for specific situations.

Logical representation and rhetorical interpretation making plans

Before taking the linguistic turn planning analysts often treated logical scientific analysis as superior to rhetorical analysis. Analysts believed that logical order reflected an underlying order in reality. Rhetoric proved less compelling because tied to the contingent dimensions of purpose – history and audience. As analysts recognized the inescapable rhetorical features of human inquiry, logic lost this prominence appearing more instrumental and contingent. Instead of uncovering a timeless foundational order independent of human purpose
and history, creating logical representations remains closely tied to practical cognitive judgments shaped by context and culture. This does not diminish the power of logic to improve the accuracy and validity of reasoning, but places this power in the service of less transcendental hopes. Rhetoric lost its secondary status as superficial illustration for underlying logical truth. Both may now be considered together as partners in human judgment. I use Hopkins to give voice to the logic of representation and Mandelbaum to do the same for interpretation. I believe plans put representations to use forming intentions that help us tame complex situations (Hoch, 2007a).

Mandelbaum and interpretation

According to Seymour Mandelbaum we often justify the arguments we make in our plans by appeal to universal principles or communal norms. He exhibits little confidence in either the invention or discovery of transcendent guidance, and adopts a communitarian outlook that insists we rely on familiar concepts of community to frame planning deliberation. Our intentions take shape within social communities of three types: the deep solidarity of religion and kinship, the thin contracts of the marketplace and negotiated settlements among competing moral claims. He adopts a pluralistic embrace of complexity that enjoins us to foster open moral communities that can forge understanding and agreements across complex divides. We cannot settle good intentions before hand once and for all. We must foster modest incomplete unions on the go. Plans need be provisional to respect the differences that make life worth living. We need learn instead how to sustain the ambiguity as a resource for exploring differences and finding what these differences mean in more practical and immediate relationships. We need believe in a myth of open moral communities.

Hopkins and Representation

Lew Hopkins (2001) studies the logic of plan making with a clear awareness of the meaning of such logic for a planning audience. The conceptual order he describes speaks to an audience of professional planners interested in using plans to improve settlements. The logic he envisions takes shape within a context of professional practice (although like Mandelbaum he imagines many kinds of people and organizations making plans – not just professional planners). What do planners face making plans? They face problems. What sort of problems? Problems related to the features of urban development that escape the expectations and practices of ideal market conditions: indivisibility, interdependence, irreversibility and uncertainty. Complexity emerges as inescapable relationships that challenge our ability to adapt. Hopkins relies upon an underlying evolutionary and developmental conception of order to conceive how professionals make plans.

In a recent article, Hopkins teams up with colleague Kieran Donaghy (2006) to propose a theoretical account of plan making. They keep intact a consequentialist outlook – that we should treat plans as practical schemes focused on
outcomes that improve how people cope with complexity. They contrast the still commonplace expectation that plans offer rational comprehensive (e.g. complete) blueprints for taming urban complexity against their belief that we need compare many different plans to form a coherent practical understanding of urban complexity. Donaghy and Hopkins argue that planning analysts and planners should abandon the quest for consistent order in a single plan (a correspondence between plan and reality) and embrace the ambiguity of a coherent order among many plans. They treat planning as a practical activity tied to particular situations. The fantasy of completeness distorts the provisional practicality of plans. Adaptability should replace predictability. Instead of one integrated plan eliminating complexity, many plans working together can anticipate and cope with complexity. In this respect the authors share Mandelbaum’s sensibility of openness.

Instead of searching for systematic hierarchical order within a plan, they envision intersecting fibers of meaning forming a web that offers coherent conceptual connections among many plans. Hopkins and Donaghy compare how very different theoretical conceptions explain or justify planning for complexity: comprehensive plans (Kelley and Becker, 2000), collective choice (Sager, 2002), markets (Webster and Lai, 2003) and communication (Forester, 1999; Innes, 1996). We can learn about freight transportation plans for the region along with plans for public education reform and affordable housing even if in doing so we find no consistent interplay among the different proposals. Plans that offer inconsistent and conflicting representations for the same region need not be unified hierarchically. Hopkins and Donaghy adopt a pragmatic outlook that seeks order in relations of similarity based on contextual meaning and practical usefulness. We can find coherence as we imagine and conceive joint effects. Relevance displaces consistency and nested hierarchy as the conceptual resource for generating and using the web of coherence (Verma, 1998).

Although Hopkins and Donaghy acknowledge the inherently practical nature of planning, they focus their attention on second order cognitive reflection describing how coherence works among explanations and justification about planning issues. This makes it difficult to tell how a coherence approach will help us grasp the meaning of any one plan within an encompassing web of coherence. They help us to understand that searching for coherence can obtain cognitive insight from multiple plans, but do not show us how we accomplish coherence. I believe we need take their distinction from theoretical judgment to more practical judgment. In their account coherence remains an abstract epistemic act detached from the kind of practical judgments that plans inspire and guide. How do we use coherence to improve how well we anticipate and cope with urban complexity?

I focus on the kind of theory plan makers use to craft plans – theory that draws upon both ideas about what I call small ‘p’ planning in individual and interpersonal settings and ideas about the behavior (explanations) and actions (justification) of large ‘P’ planning in more complex social and organizational settings. I have argued elsewhere for a conception of planning tied to practical
reasoning. Here I want to describe how we use plans to inform practical judgments – how plans combine causes and reasons as coherent guides for practical action (Hoch, 2007a).

Planning conduct and habits: small ‘p’ planning

In order to grasp how we make plans it may help to first consider how individuals make practical judgments. We use plans to shape the intentions that take shape as preferences and priorities we use to guide our judgments about deliberate choices. When we make these choices we take action. Most of the time, however, we operate without paying attention to what comes next. We follow habits and behave. We do not plan or compose. We plan when we encounter problems that do not fit reliable and predictable routines. We plan when we need decide what to choose.

We do not usually attend to the complex layers of relationship that make up our daily routines, but rely upon habits to guide our behavior. These routine behaviors become action when we attend to changes that disrupt the routine and find ourselves considering not only what we need do to restore or change the routine, but even reconsider the taken for granted norms and associated purposes. We listen to others obtaining new ideas and information about different purposes and improved practice. We craft small ‘p’ plans at these moments. We may encounter problems with our behavior as others resist or ensuing consequences disappoint. We might take action impulsively or reactively with little reflection. But when we reflect on our action and consider how we attend to changes in relationship to the future activity of others we make plans. We do more than plan when we take action, but planning offers important value because it anticipates future joint activity by comparing optional actions and imagined consequences before we choose. Planning informs deliberation by offering vicarious review of shared or collective outcomes in an imagined future. We might deliberate with ourselves or include others at the scale of dyads, work groups or teams.

How do we use what we already know and believe to deliberately change habits that no longer work? Philosopher Paul Thagard (2001), dissatisfied with the limitations of rational decision-making offers a coherence approach to practical reasoning. The rational approach popular among planning analysts relies on deductive inference and the conventions of calculation – formal cognitive assumptions and rules that do not capture the kinds of practical steps people take when making a judgment or a decision in complex settings. Thagard argues that individuals rely on coherence rather than calculation (e.g. utility) or deduction (e.g. logical consistency) to make useful plans.

Thagard argues that individuals make practical judgments using a coherence test to identify, review and compare different kinds of information about choices. We choose based on how information hangs together (or not) around each option. Thagard describes how individuals create patterns that bind together bits of information about each choice generating constraint satisfaction. He describes how the strands in Hopkins and Donaghy’s web of
coherence take shape in a fashion analogous to the way neural networks that grow in the brain.9

How might this work? I adapt the following example from Robert Burton (2008). The online book seller Amazon.com uses software that tracks the books you select online assigning weights to search behaviors (view citation, explore contents, save in cart, purchase) for each book. The software program uses your book selections to calculate a combination of networks linking your book choices as a mathematical model that selects additional books for your view from the data base. The more you visit and use the Amazon software the more you improve the coherence of your artificial network model improving the quality of fit between what the model automatically selects for your review and your reading preferences. The outcome relies upon interaction among the increasingly larger network. ‘One cannot extract a piece of the network for independent observation any more than you can pull out a single strand of a Persian rug and infer what the rug’s pattern might be’ (Burton, 2008: 48).

Thagard combines cognitive science and philosophy to elaborate the principles of coherence he argues individuals use to make practical judgments about future choices. He envisions a framework with minimum assumptions that responds to the complex conditions of practical judgment for choice. He adopts a coherence based versus correspondence based conception of truth. Plan making plays a crucial role. Deliberate choices involve planned judgments.

Practical reasoning focuses on the cognitive dimensions of choice that we use to represent how different reasons shape our choices. Thagard uses neural network analysis to describe how interactive patterns of association among action goal plans cluster into meaningful selections from across a vast information field. Instead of reasoning in linear fashion as we read text, practical judgment relies more on the evaluation we make reading a map or comprehending a picture. So the plans we use to make judgments rely on cognitive and emotional capacities whose coherent interaction in practical action guide our choice. But how does such coherence work as we compose plans for urban settlements?

Plans for communities and institutions: large ‘P’ planning

We use different planning tools to carry our small ‘p’ planning conduct forward into community and institutional relationships tied to more encompassing urban environments. These complex social relations require attention to greater social and environmental complexity. This complexity complicates comprehension among diverse actors holding different purposes in shifting contexts. As we attend to neighborhoods, corporations, public works departments or state legislatures the tacit skill of individual planning conduct no longer proves an adequate guide for coordination. Our large ‘P’ plans build on small ‘p’ planning conduct: the large P plans attend to joint purpose, assess the context for actions associated with that purpose, identify plausible future actions and joint effects in context and finally, propose specific sets of action. However, large P plan coordination rarely follows the tacit and predictable social interaction
(interpersonal adjustment and correction) made possible by intimate and familiar deliberation. Large ‘P’ plans serve as a tool for the conduct of joint coordination among many diverse groups interacting in overlapping and intersecting institutions.\textsuperscript{10} Assumptions about rational order have too often inspired singular large ‘P’ comprehensive plans. Coherence tied to practical judgment offers a more forgiving and flexible approach. We can be comprehensive in scope even as we explore the fit among many plans. But how do we compose these plans?

\textit{How we compose plans}

When we compose plans for urban settlements we prepare representations that inform and shape the intentions of different individuals, organizations, communities, jurisdictions and institutions directed toward an imagined future. For more than 50 years planners have adopted versions of the rational model to organize planning composition. Planning theorists have spent decades criticizing the impossibility of meeting its requirements. Meanwhile tens of thousands of professionals, stakeholders, officials, clients and citizens use the model to make plans without ever meeting the requirements for rationality. What were these planners doing? How do we account for the value of the plans they made?

Instead of salvaging the rational model (or celebrating a return to architectural design ideals tied closely to physical improvements) I adapt the coherence framework for practical judgment described by Thagard and Donaghy and Hopkins. Practical judgment includes three distinct phases: appraisal, comparison and decision. The elapsed time for a judgment may vary from milliseconds for an instinctual reflex to years; but the distinctions describe how plans work to inform practical judgment across temporal and spatial scale. These differences reflect the varieties of use that accompany practical judgment for large ‘P’ planning problems.\textsuperscript{11}

\textbf{Appraisal}

There are many distinctions about the way we appraise a complex situation. Sometime we focus on what people bring to a judgment: an attitude, belief or viewpoint. Other uses emphasize what we do to select. Do we evaluate, reckon or interpret? Still other uses describe how our selections foster discretion, refinement and taste. These subtle differences in use reflect the prominence of appraisal in human cognitive and social life. Appraisal includes individual emotional responses as well as social beliefs and conventions. The plan maker focuses on select urban relationships representing choices within a framework informed by theory and purpose for a specific context.

\textbf{Comparison}

We may in considering judgment emphasize the reflective phase. The emergence of any problem feeds on the difference between untroubled continuity and unexpected disruption. Judgment may respond to these disruptions using analysis, observation and rationality rather than impulse, reflex or habit. Rash
judgments not only lack discretion, but careful comparison. The plan maker uses different emotional and cognitive tools to test coherence among a set of plausible alternatives to seek those that balance fit and feasibility.

Appraisal and comparison accompany and complement one another as distinct moments of judgment cycling through iterations of assessment. The street vendors on the commercial corridor at first take appear threats to retail storeowners. Removal seems the appropriate response. But analyzing the economic impact of vending in other corridors where vending persists uncovers complementary growth in sales. Closer comparison of the mix of periodic and permanent retail goods providers uncovers a range of agglomeration effects for different combinations. Plans represent cycles like these as different options available for choice.

Selection
Judgments also bring matters to a close. These may be conclusions imposed by authority (verdict or decree), reasoning (deduction) or negotiation (reconcile or settle). We make judgments within a social and institutional context. We draw upon organized institutions, conventions and traditions to authorize and guide how we conduct each phase of judgment. Each proves more useful and robust in different contexts. We plan differently in a legal context than a family context; at a small scale versus a large scale and so on. The rational model represented an important, but very specialized distillation of these more basic features of judgment (e.g. logical and analytical transparency that allow for precise calculation). The vast richness of human knowledge about practical judgment and the infinite variety of situations for judgment emphasizes the foolishness in retaining an attachment to a too narrow model of rational analysis as a guide for plan making.

Plans inform intent
Plans offer advice about a choice. Plans help us decide. Urban plans do this by helping frame practical judgments about the pursuit of multiple purposes in changing locales. But how do we formulate the selective sets of goals and actions that compose the different alternatives? I turn next to the concept of composition to describe how planners create plans. Composition produces filaments of practical meaning that taken together compose a coherent web of planning ideas and proposals. As we appraise, compare and conclude what plan to take we compose the meaning and consequence of our future actions.12

Framing urban plans
Planning analysts have used the concept of framing to describe how plans work to shape judgments about urban development (Fischer, 2003; Healey, 2007; Schon and Rein, 1994). Framing selects and integrates cognitive parts within an encompassing visual gestalt (Lakoff, 2006; Lakoff and Johnson, 1980). The spatial metaphor selects and orders patterns of association used in practical judgment.13 When Rein and Schon (1977) describe ‘framing’ they use the
picture framing metaphor – a uniform physical boundary around an image. The conception of the field and ground features of visual recognition studied by gestalt psychologists comes to mind. Our inherited and learned perceptual functions lead us to recognize the contrasting features of visual framing that assign priority to the elements of the field and blur the features that compose the surrounding ground. The ground, however, provides the context upon which the image takes shape. The distinction draws upon the tacit ways we perceive and comprehend spatial relationships (Lakoff and Johnson, 1980).

We also need to include the composition of whatever fits inside the frame. Composition in the visual arts includes the practical judgments used by a photographer, painter and viewer to make an artful image. The image makers set the context and organize the image within a frame. Framing includes more than circumscribing a completed painting (or cropping a photograph) but composing a specific image on a canvas surface or matt. The incremental adjustments taken to select and organize the application of paint to brush and brush to canvas frame the image. This use emphasizes the selective perception and judgment of painting – composing – as the relationship relevant to the practice of planning. How do we describe the aspects of composition that contribute to the final painting? We cannot describe how the intuitive artistry of the composer generates a beautiful and compelling image. But we can identify the effects the image produces – the differences it makes for viewers.

As we identify these qualities we can map the parallels between composing an image and composing a plan. This kind of learning takes place within specific contexts of use. We learn the meaning of concepts in the practical efforts to give form to our desires and beliefs about a question or problem within that context. We cannot learn to photograph or paint without learning to compose.14

A pragmatic approach conceives plan composition as a response to problems; disruptions in the complex network of routines and processes that coordinate the interdependent layers of interaction that make urban settlements possible. Plans anticipate these disruptions even as they cannot predict or prevent them. Plans help us form practical intentions we can use to prepare for the future. Public officials and stakeholders can appraise, compare and choose alternative action-goal sets that make good on that intent. The plans represent problematic relationships using representations that viewers can use to appraise, compare and recommend future decisions.

Planning situation, complexity and planning craft

We make plans to respond to situations – practical settings that describe relevant contextual features in relation to human purpose and action. How we describe a situation shapes how we anticipate and cope with these features. Professional planners learn to craft planning situations that frame and focus the representation and interpretation of plans (Hoch, 2007a). We can consider the situation for its validity and faithfulness to other earlier descriptions that proved useful. We map the selective features from past onto the current moment of reflection adding or subtracting elements or relations in so far as
these follow upon the order set in place by the earlier description. We might decide and act without reference to an earlier description, and so learn anew by trial and error. But the evolutionary biologists and sociologists tell us that humans developed brains that allow us to remember (or learn from other people) patterns and structures of relations that provide concepts we can use to anticipate and prepare for future events (Minsky, 1988, 2006). Pretty much all of what we call civilization has relied upon our human capacity to learn and use what we learn to change our world in ways that makes our lives less uncertain and insecure.

Instead of casting representation and interpretation into two separate and antagonistic categories; I am arguing that the insights of a pragmatic outlook and research from cognitive science suggest that both are distinct features of practical judgment. The separation of substance from process in the quest to explain makes little sense as a guide for making plans. I am taking special effort to sustain the distinction of each feature as a resource for plan making; but it is how we combine both that shapes the validity and meaning of a specific plan. The craft of plan making uses practical judgment.

**Representation**

We make plans to represent for ourselves selected relationships as a planning situation. The plan usually describes potential changes in these relationships tracing possible, probable or plausible effects for the relevant plan stakeholders or audience. The plan maker describes a set of relationships (e.g. temporal changes and spatial patterns) that taken together represent a context for future change and action. The planner relies upon prior knowledge to prepare the description – knowledge that draws on a wide range of facts and ideas about urban change. Representation involves selective abstraction. The planner describes only a portion of the many interactive relationships that coexist. But these different parts are held together using a planning frame to guide and organize the different phases of judgment (appraise, compare and decide). Urban planners search for the most coherent combination of urban relationships to compose plan alternatives.

**Interpretation**

The selection of these relationships and the organization of the representation rely upon an interpretation of purpose and context. What the plan maker selects and how the plan maker represents the relationships flows from an appraisal of purpose. The plan stakeholders (planners, clients, sponsors) may hold different beliefs, desires and preferences leading each to formulate and propose different purposes. The plan maker need find ways to identify and include these different purposes in the plan. The democratic planner listens and learns the viewpoints of the plan audience and so uses the values and beliefs of these people to frame the representation of the planning situation. (Strategic plans may be sensitive to the purposes of others, but mainly to anticipate and
pre-empt the strategies they might use on the battle field or the market place.) But sometimes the purposes prove too numerous or too conflicting to allow for meaningful inclusion. The purposes need be selectively filtered to make completion of a plan feasible and useful. The students of plan negotiation, mediation and dispute resolution offer one avenue of inquiry exploring how planners distill differences into practical forms of indifference, compromise or agreement (Shunneli et al., 2008; Susskind and Cruikshank, 1987; Susskind and Ozzawa, 1984). The action focused analysts offer complementary ideas and evidence about mutual learning, collaboration and deliberation (Forester, 1999; Innes and Booher, 2004). Organizational and institutional analysts study the incentives, rules and conventions that people use to democratically orchestrate and advance interests and beliefs as useful plans for purposeful advance (Alexander, 2001, 2005; Faludi, 2000; Fischer, 2003; Sager, 2002; Sager and Ravlum, 2004; Webster and Lai, 2003).

**Composition: representational interpretive combo**

The plan takes shape over several iterations of appraisal and comparison. The planning situation changes as efforts to include different purposes modify attention, emphasis and meaning. The representation includes not only the representation of facts and flows, but expectations and interests – worries and hopes. Feelings and emotions tacitly and explicitly shape judgments about what relations to consider and how (Plesner et al., 2008).

The interaction between representation and interpretation varies with respect to the levels of representational and goal complexity within a planning situation. Urban planning does not impose order on complexity, but responds to the challenges of complexity by offering ways to tame and even domesticate complexity within different planning situations. Table 1 provides a conceptual framework identifying different orientations urban planners adopt in response to four kinds of planning situations classified by levels of representational and interpretive complexity: protocol, precedent, policy and prototype. Leaving aside the pursuit of epistemic certainty shifts attention to contextually sensitive

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<thead>
<tr>
<th>TABLE 1</th>
<th>Plan orientation for practical plan making</th>
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<tbody>
<tr>
<td><strong>Plan orientation</strong></td>
<td><strong>Interpretation of plan goals and meaning for sponsors &amp; clientele</strong></td>
</tr>
<tr>
<td><strong>Complexity of urban relationships</strong></td>
<td><strong>High</strong></td>
</tr>
<tr>
<td>High</td>
<td>Prototype (problem seeking)</td>
</tr>
<tr>
<td>Low</td>
<td>Policy (problem solving)</td>
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modes of judgment that turn knowledge about change and interpretation about purpose into practical intentions. The orientations describe how plan makers practically compose a response to different kinds of complexity.

Protocol: routine practice for low complexity

We adopt protocols to guide our plans when facing urban situations consisting of predictable relationships that planners, sponsors and clientele comprehend in familiar terms. Analysts often describe such situations as technical implying that efforts to anticipate future change will produce familiar and agreeable options. But adopting a protocol relies on important social and political agreements that only seem unimportant because not subject to attention getting disagreement. Most plan making activity works using protocols because the institutional and organizational settings professional planners inhabit generate predictable cycles of plan preparation and reporting. State and local governments sponsor most urban plan making in the US and so set the terms for the emergence of plan making protocols. States may authorize consistency and uniformity of official urban plan elements. The American Planning Association may play a role designing ‘model’ legislation and seek to promote adoption nationwide. Adoption of different protocols shapes how planners working in different organizational and occupational settings make plans.

The diagram in Figure 1 comes from the California General Plan Guidelines (p. 21), a 244-page book filled with checklists and criteria for making a plan to fit the protocol adopted as state law. Consistency tied to the principles and guidelines described in the protocol centers on compliance with a list of functional elements. The relevant context for this plan making protocol includes the intergovernmental organizational field of government agencies and the various laws and regulations that authorize different plan components. The fragmented overlap and conflicting interaction among agencies poses a threat to this orientation. The orderly nested hierarchy of bureaucratic organization becomes a model for plan making expectations. This works as long as the responses to urban complexity by planners and plan clientele cohere – the functional aspects of land use and transportation offer useful advice that stakeholders agree to take. Such coherence occurs when urban changes are predictable and expectations hang together. Ironically, the legal mandate often creates unintended effects as compliance may not match competence or context.

Treating plans as a kind of protocol greatly expands the reach of planning ideas among the staff working in public agencies and planning consultancies. Breadth of dispersion usually comes at the expense of contextual sensitivity and relevance. The protocols prove useful for helping people recognize they can take systematic practical steps to prepare for future urban development. The criteria work well where people agree about goals and face familiar changes in urban relationships. For instance: anticipating cycles tied to routine organizational interactions such as budget allocations for capital improvements, or regulatory reviews for development approvals or impacts. Anticipating changes in the capacity of a natural system based on variations in use (e.g. water
and air) as well as adopting models for estimating the effects of population growth and migration on urban systems (e.g. utility use, housing demand, land absorption).

Analysts studying the impacts of plans often adopt consistency as an indicator of plan success (Berke and French, 1994). The protocol not only shapes beliefs about how to plan, but what counts as a useful plan. Empirical tests often turn up more complex results. Municipalities and neighborhoods may adopt plan making protocols to comply with state regulations, but ignore those plans as a guide for urban development decisions (Hoch, 2007b; Pendall, 2001).

**Precedent**

Planning professionals often develop plans that offer vivid and successful advice for some portion of urban complexity. Planners facing complex urban relationships copy a prior response that offers the promise of proven results. These proven plan ideas provide practical models for adoption and emulation as local government, consultants and other agencies seek familiar yet sophisticated precedents for making their own plans. Professionals use precedent to improve the legitimacy and popularity of a plan making precedent (e.g. the mall, the super block and now mixed use development) often overlooking the crucial relevance of contextual fit. Hopkins (2001) critiques this approach insofar as it ignores the complexity of urban development – imposing a too abstract

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**FIGURE 1**

**Diagram for local government plan making in California**

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model from the past on a complex present. Burnham’s *Plan of Chicago* adopted the form and scale of residential development from early 20th-century Paris and Vienna to fill out images of plaza and parkway improvements (see Figure 2). The precedents did not fit the complex context of housing development in a gritty industrial metropolis.

Precedent does offer access to a rich archive of prior human experience and creativity. Consider how planners use the historic confluence of three street grids to provide precedent for the identification of a San Francisco (2002) neighborhood. In Figure 3 the San Francisco planners use the intersection of three street grid forms to emphasize the importance of current transportation and land use density relationships for a neighborhood plan. Figure 4 provides an ironic image to symbolize the effect of continued auto dominance tied to the confluence of conflicting street grids. Popular and familiar precedent that distracts planners and their clientele from crucial contextual features needs more critical attention.

**Prototype**

Prototypes invent combinations of ideas about complex urban relationships that anticipate and help resolve contested interpretations. These combinations of insight might flow from reliance on different epistemic approaches, for instance, an analytic model versus a comparative case study approach; different ideological or moral approaches, for example, liberal versus conservative; different disciplinary approaches, for instance, engineering versus social science,
and so on. The range of concepts, beliefs and methods used to describe and analyze urban relationships yields a variety of contextually distinct representations for the same time period and locale. Planning professionals since the inception of the modern profession have embraced a multi-disciplinary effort to compose alternatives that plan clientele can use to grab hold of salient cross-cutting features that promise to tame complexity.

Professionals use representational cleverness to anticipate and reconcile the interaction among complex urban relationships simulating diverse interpretations. These innovations may emphasize tools such as GIS visualization and planning support tools (e.g. What if or Community Viz), institutional innovations like performance zoning or currently form based zoning or urban...
development plans that offer unprecedented proposals for urban improvements. We tend to think of such innovations as products that others can adopt as precedents (e.g. the mall). But most innovations consist of combinations of relationships tied closely to a specific context. The vast case literature that informs planning describes and interprets these local plan making efforts to others.

The consultants for the San Jose urban renewal plan created reader profiles at the beginning of their report identifying the audience stakeholders. The profiles advise each audience about the plan features of most interest. The planners write different clientele into the report as readers whose interpretation the authors anticipate and invite. This innovation invites different stakeholders to read the plan more like a newspaper or cookbook than a single narrative.

Planning policy

Urban planners adopt a policy approach to plan making when they face diverse interpretations about framing and solving familiar urban problems. In this situation most stakeholders agree about the features of complexity associated with the problem (e.g. traffic), but disagree about what policies to adopt to solve it. Planners often use models to simulate complex urban relationships and then invite plan sponsors and stakeholders to select policy inputs, weight parameters and evaluate outputs for model simulations that estimate future policy outcomes. These may be spreadsheet models calculating cost–benefit ratios for development projects, GIS models estimating and allocating residential development activity by geographic area, transportation models calculating future mode

<table>
<thead>
<tr>
<th>A New Hire at a Valley Firm . . .</th>
<th>Turn to the Recommendations by Area (Ch 3, by area) and consider the extraordinary life and vitality planned for places such as digital Broadway on Santa Clara Street, new food, shopping and entertainment on 1st and 2nd Streets and total development plans for a new lively neighborhood around the Diridon train station.</th>
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<tbody>
<tr>
<td>Looking for a cool place to live</td>
<td>Review the full range of public transportation options you will get downtown (Ch 3, by system): from new rail and light rail service, to convenient downtown shuttles, and eventual BART access to the region.</td>
</tr>
<tr>
<td>Tired of the travel demands and delays of suburban living</td>
<td>Flip through 'Strategy 2000' and stop in any chapter to get confirmation of downtown San Jose as the heart of the Valley – the crossroads of the internet, the place to be for growing international businesses, the setting in which to live and grow and work together.</td>
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FIGURE 5

The San Jose urban renewal plan offers a stakeholder guide
split and environmental models that estimate and locate externalities. The model provides a test bed for assessing different policies within a shared framework – a framework reflected in the assumptions any model need take for granted (and that the stakeholders accept). Planners may imagine different future outcomes based on the attention and input of different stakeholder expectations. This approach describes differences of purpose and meaning illustrated in alternative scenarios. The scenarios usually include strategies for recognizing and reconciling these differences among the stakeholders.

The narrative distilled in Figure 6 from the planning scenario development workshops represents a divided future, a problem projected forward and

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**San Joaquin Scenario**

San Joaquin: At the San Joaquin Valley workshop participants brainstormed a long list of key factors and environmental forces. They prioritized the list to identify a few clusters of closely related issues. Finally, several clusters were combined and two critical uncertainties selected to serve as the axes of a two-by-two scenario matrix.

Horizontal: External Influences: environmental/economic health (negative to positive)
Vertical: Social Conditions: ethnic, educational, economic structure (worse to better)

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A Tale of Two Valleys Scenario Script: Imagined commencement address by Latino Graduate in 2025 “... we have a great challenge and a great opportunity facing us here in the Valley. California is on its way toward becoming the first majority Latino state in the union. We will elect more Latinos to Congress. We will change the face of electoral politics in the United States.

“We must step up to the responsibilities that will be vested in us by the power of our numbers. Or we will remain, in effect, an underclass of under-educated, underemployed peasants. Sure, some of your parents attended college. Yes, we are beginning to see a Latino middle class in California. But you know as well as I that class divisions in California remain closely tied to race and racism, both between Anglos and Latinos, and among middle-class Latinos and other new immigrants.

“These are harsh words. But these are harsh times. You all know about the white and the able fleeing from Fresno and Bakersfield. You all know about the pitched battles between the gangs and the police. You all know about the roving bands of unemployed and the growing fear of coastal Californians who no longer want to risk traveling in the wild s’ of our Valley.

“We cannot allow this rift between the Two Valleys to continue. We must find ways to heal the divide and grow a civil society that joins light and dark, rich and poor, in a way that reduces the distances among us.

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FIGURE 6
Planning scenario selection from the Valley Futures Project
expanded, but as a warning to inspire current action. The scripts represent problems as contributions to policy arguments and discussion about what to do now to prepare for different kinds of plausible futures. The imagined futures can also be represented using tables, charts and maps visually illustrating future outcomes that different stakeholders can use to inform deliberations. The narrative does not supply a visual blueprint for how to live nor does it propose a specific set of norms or rules to guide behavior. The text invites the reader to imagine a future that will inform arguments about what sorts of policies to adopt in a specific local situation – an argument informed by interaction effects that focus attention on salient (the axes of the two by two table), but not definitive relationships. Relevance and plausibility play a more prominent role than reliability and probability in guiding judgment.

**Conclusion: making plans as craft**

When we craft plans well we compose future alternatives that allow for the uncertainty and ambiguity generated by the interaction of representation and interpretation. Complete or final agreement about the relevant representation and goals rarely exists, and then for only a short time because people and cities change. Any prospects for useful plans require that the audience use the plan to comprehend different sets of goals within selective representations of contextual complexity. People need to comprehend the plan and use it to form their intentions toward the future. Plans offer provisional accounts of future outcomes that users intend to accomplish by changing the relationships represented in the current urban situation.

We make plans to guide intentions used to inform decisions about collective action. Pragmatic plans use some form of deliberation. But such deliberation occurs in organizational and institutional settings that influence how interests, needs and goals influence deliberations. In the best of circumstances we describe the conduct of such deliberation as a kind of mutual advice. The boundaries of knowledge depend on the kinds of reasons that people offer as each listens and adapts arguments that recommend goals and attachment. As we craft a plan we use cases as precedent and simulations that model plausible outcomes – but outcomes imagined as part of the deliberation.

Practical judgment draws upon emotions (Hoch, 2006b; Marris, 1996). Memories, stories, ideas, images – the cognitive products of mental life take shape using an emotional scaffold. Emotions not only motivate by activating our attachment to a choice or option, but they also inform how we conceive objects as worthy of attention and desire. They not only push us toward a cognitive goal, but shape how we select and conceive the goal. The concepts and feelings that together bind representations to intentions include the influence of institutional conventions, social relations, political expectations, and more. The distillation of the relational mix into situations provides the context for the judgment and action used to make, test, revise and adopt plans (Sennett, 2008).

The research on plan making still consists of parallel streams of inquiry. Some contours are disciplinary and others methodological. The steepest slopes
reflect differences in belief about the theoretical, moral and practical relevance of important relationships shaping urban complexity. I cast this separation as the difference between representation and interpretation. Insisting that plans combine both, I hope to motivate colleagues to consider taking Donaghy and Hopkins’s (2006) message to heart. Consider modifying how you make plans as well as how you study them by seeking coherence rather than consistency. The profession understands the urgency of speaking to practical craft, but usually offers best practices tied to current professional custom, legal convention and political feasibility. The many currents of relevant insight and knowledge generated by academic planning inquiry go untapped. I have tried to show how we might adapt Donaghy and Hopkins’s idea of a coherent network to cut tributaries across the diverse channels of academic and professional inquiry. Risking a mixed metaphor we can imagine a confluence of ideas about plan making improving practical judgments about complex urban development. The confluence requires that we learn to use unfamiliar vocabularies to inform how we make practical planning judgments.17

Research on small ‘p’ planning need study how plans contribute to forming intentions that in turn lead to action as opposed to unreflective behavior. The quest of intelligent democratic advice may require much more attention to the legacy of human cognitive and emotional capacities and cultural habits to learn how the short cuts we take in forming judgments may short change efforts to conduct plans that can meet the demands of both social and environmental complexity. The work by Forester (1999) and Innes and Booher (2004) has contributed to our understanding of planning, although they focus less on plan making and more on the varieties of planning conduct. I think we need to study plan making, especially the contributions of professional craft and expertise, for the obvious reason that as planning educators we claim that the plans we teach our students to make will perform well enough to deserve professional respect and compensation. If everyone plans, and our democratic sensibility urges us to listen, how do we practically discern among clever, stupid and wise plans? Not only do we face obstacles in collective decision-making (Sager, 2002), but we need demonstrate to fellow plan makers how the intelligent representations we professionals create improve the validity and reliability of plans.

Research on large ‘P’ planning needs to look more carefully how people together combine moral, imaginative and cognitive assessments of complexity to compose plans for the future. As we drop our attachment to the comprehensive plan ideal of an ordered rational consensus and collect multiple plans in an emergent web, how do we assess the relevance and value of different plans as resources for taming social and environmental complexity? The idea of compositional frames offers a useful avenue for inquiry. My illustrations in this essay are but a prelude to more systematic inquiry about the complex interplay between the comprehensive reach of the planning imagination, the commitment to democratic inquiry as a guide for moral collaboration and the plenitude of still poorly understood cognitive resources for practical judgment.
Notes

1. Urban plans in my account do not presume governance, authority or collective action as necessary elements. I am projecting the central meaning of plan making from the cognitive and emotional judgments that individuals make onto more encompassing institutional and organizational scales. Professional plan making in institutional settings pay attention to social, cultural economic and political sources of power, but these do not animate plan making (although they motivate and direct it). Plans offer advice.

2. I offer these conceptual distinctions more as boundary markers rather than exclusive categories. Using these concepts will not prove anything about planning, but can offer useful insights about practical differences in the way people make urban plans.

3. The disenchantment with the promise of urban modeling was captured best in Douglas Lee’s 1973 article in *JAIP*.

4. Mandelbaum’s communitarian sensibility envisions civility, tolerance and prudence animating stakeholder and citizen deliberation fostering liberal public orders. People use these virtues to negotiate and adjust memberships across different social communities without losing grip on an underlying sense of continuity and identity. The community members may speak at cross purposes or disagree, but they continue the conversation because they publicly recognize and respect one another.

   For Mandlebaum we adopt many tools to anticipate and manage the complexities of social coordination, but he worries about those analysts and experts who hope to remedy social complexity. It appears an inevitable condition that accompanies a pluralistic society. (Hoch, 2006a: 128–9)

5. They distinguish explanation and justification as they classify different ‘issue’ domains: plans, organizations, process and collective choice. The selection treats ‘plans’ as an issue area we can explain or justify – the act of abstract segmentation treats plans as a kind of knowledge and not a kind of practical judgment. They describe how we can study plans and distinguish this study from other issues confused with plans. But they do not tell us how we combine cognitive insight with desires and hope to craft plans.

6. Hopkins offers plenty of examples about how to make plans (2001) and has recently edited a book with colleagues exploring the important role of scenario development (Hopkins and Zapta, 2007).

7. The concept of habits was discarded by sociologists in the late 1920s as they struggled to legitimize their scientific status in competition with Psychology (Camic, 1984).

8. Mandelbaum distinguishes thick community solidarity from the more abstract thin contracts of more complex and encompassing organizations. He envisions individuals acting within the bounds of overlapping communities that both reinforce and challenge the larger organizational order. My conception draws upon a more developmental and evolutionary conception of social learning. The explosion of knowledge about our natural history as *homo sapiens* gives reason to explore more carefully the causal and emotional depth of solidarity tied to genetic legacies underlying cultural experience. Peter Marris (1996) helped me appreciate the critical importance of individual development within these revised versions of human evolution.

9. Minsky contrasts a strictly logical path of inquiry with a common sense path. When we argue logically we strip away tangential references to other forms of knowledge relying solely on a formally consistent sequence. The greater the internal
consistency and coherence; the more we believe the argument. But when we argue from common sense we draw upon different sources of knowledge as evidence for claims. The argument lacks consistency and internal coherence and so must draw upon a much wider range of incomplete knowledge to offer convincing support for the claims (pp. 140–1).

10. The different theories about coping with social and environmental complexity attend to different aspects of many layers of organizational and institutional order. Any holistic order remains provisional and incomplete.

11. Marvin Minsky uses the model of a ‘difference’ engine to describe the cognitive infrastructure for the ‘satisficing’ judgment that Herbert Simon (1982) believed better accounts for how we make decisions. Different biological agents within us activate in response to the difference between an actual and desired situation seeking to diminish the difference. Practical judgments about complex urban relationships rely upon vast layers of such agents whose work remains dimly understood (Minsky, 1988).

12. One reviewer asked whether there are differences between composing a plan and composing a decision, or achieving a standard of coherence sufficient to enable immediate action. What is the difference between composing a plan and composing a piece of legislation appropriating funds? My answer: When we compose a plan we inform an intention. We need raise funds for transit and not the highway. When we draft legislation appropriating funds we take a decision following a commitment to some intention. We propose a transit gas tax law.


14. See the work by Marvin Minsky, most recently The Emotion Machine (2006). Minsky offers a more detailed set of conceptual distinctions to describe how we think than I am doing here.


16. Efforts to insist upon consistency often turn to sources of authority, usually government, to impose sanctions to assure compliance. But enforcing a plan subverts the persuasive underpinnings of the activity. The threat of force may elicit compliance with the purpose represented in the plan, but it may not generate a change of heart among those who comply unwillingly. Plans inform the intentions of actors who use the plans to pursue some purposeful action. Critics of this view insist that compliance takes time and that a change of heart will be forthcoming if not among those forced to change, then those who come later without knowledge of prior practice. Sometimes we need comply with unpopular mandates and subordinate our personal or local plans to the plans of others. But consistency will rarely provide a legitimate rationale for such imposition.

17. Martin Meyerson (1956) wrote an article arguing for a middle range planning that would bridge between specific planning decisions (e.g. zoning) and the more abstract principles of the comprehensive plan. He was right at the time and my work echoes his concern – although the scope of our enterprise now includes much more than it did 50 years ago.

References


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