Four Gates to Castle Neos: A Native Framework for Architectural Inquiry

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ABSTRACT: Various dimensions of architectural investigation are inherently hindered by the lack of a native framework. Consequently, what counts as disciplinary advancement in architecture has seldom risen to the towers of novel truth-value or the ramparts of reliability as in other disciplines. Architectural knowledge as a whole seems to be mired in a treacherous moat of crocodiles where sharp teeth are often what matters most. This paper proposes a new framework wherein four separate gates of investigation lead to the citadel of new wisdom, Castle Neos. Those gates are named Research, Design, Forensics, and Education. Each mode of investigation constitutes a worthy activity that opens a gate to significant architectural contributions. Each mode is also articulated by its own methods, strategies, settings, and tactics; as well as its own measures of truth value, novelty, and generalizability. The inclusive term "inquiry" is used here to both distinguish and integrate the equal bases of the four investigations. Formulation of that proposed framework for architecture constitutes a descriptive and normative theory because it explains the unique nature of architectural inquiry and offers a coherent means for incorporating it into current disciplinary knowledge.

One pair of castle gates opens to the north and to the south: Design and Research. The short but broad connecting street between them crosses at Analysis Lane and Synthesis Court, but along the way, Philosophers Row and Method Way vary as to your right and left according to your gate of arrival. Another primary road connects the West Forensic Gateway to the East Education Portal. Spread across the four quadrants of the castle, the intersecting alleys and by-ways abound with a variety of productive investigations.

KEYWORDS: Inquiry, research, design, forensics, education

INTRODUCTION

> We will have standing when we publish the body of knowledge upon which we base our practice (Donald Watson 2008, in Bachman 2009, 1).

This paper proposes a theoretical framework unifying four modes of scholarly and professional investigation undertaken in disciplinary pursuit of architecture: design, research, forensics, and education. The overarching construct beneath which those investigations are subsumed are discussed here under the inclusive umbrella of "inquiry." The use of this term should recognize its inspirational origin in the 1980 first edition of John Zeisel's book, Inquiry by Design. Reformulation under the master rubric of "inquiry" is intended as a landscape in which the four operations can be effectively distinguished, navigated, and critiqued… and therefore more productively employed. A corresponding clarification of architecture as a field of coherent disciplinary knowledge should result.

1.0 THE PROBLEM

Architecture's historical transition into the conventions of academic and professional accreditation involves the grudging adoption of research models from science and technology. Figures 1a (the normal academic standard) & 1b (proposed architectural model) illustrate this mismatch in terms of four investigative activities and the resulting four quadrants of supporting criteria. The conventional scientific method as depicted in Fig. 1a has not been entirely adequate for architectural investigations; nor have the corollary models of inquiry from philosophy and art. Those exterior models are catapulted stones that breach the fortress wall sometimes, but never enter through the muster of recognized gates. Architecture is of course neither science, nor philosophy, nor art; so a systemic framework for architectural inquiry must necessarily hold the roots of a different set of investigations.

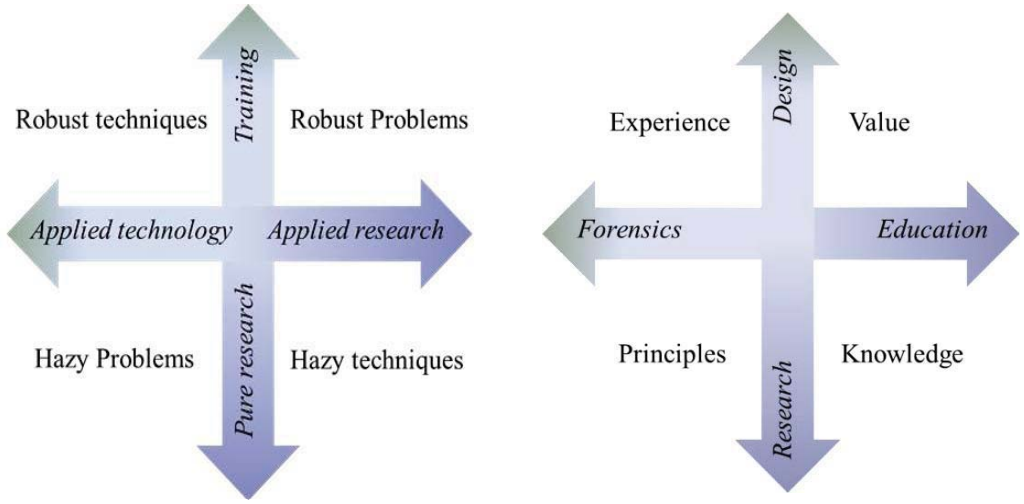

Figure 1a & 1b: Conventional framework of inquiry in other disciplines and the four quadrants of architectural inquiry. (Source: Author)

Commonalities with conventional analysis-synthesis modes exist of course. Figure 2a portrays the spiral of hermeneutic inquiry as befits our information age of indeterminate problems and dynamic complexity. Many texts on disciplinary knowledge and architectural research make fine connective transpositions (e.g., Snyder, Duffy, Zeisel, Groat & Wang…). Similarly, Figure 2b symbolizes our increasingly vivid and critical reflection on design, design method, and design issues (e.g., Protzen 2010, Plowright forthcoming for 2014). It remains however, that these are essentially translations; they begin with systemic modes of inquiry from outside architecture and use classical research methods as the dominant paradigm.

Thus, in postindustrial society where the basis of value is increasingly bound up in knowledge production, the epistemology of architectural knowledge remains shrouded in design mystique and an indiscriminate cloud of borrowed or imposed methodology. Architectural research, design, project specific searches for information, and the scholarship of teaching and learning in architecture are all marginalized by this weak disciplinary framework. They compete for validity rather than reinforcing one another. Such present quandary leaves the literature of architecture in a jumble and its discourse mired in a weakened framework of argument. So the impetus for new theory on architectural inquiry is manyfold: Society wonders what the architect really holds as unique knowledge and how the profession nurtures and grows that body of

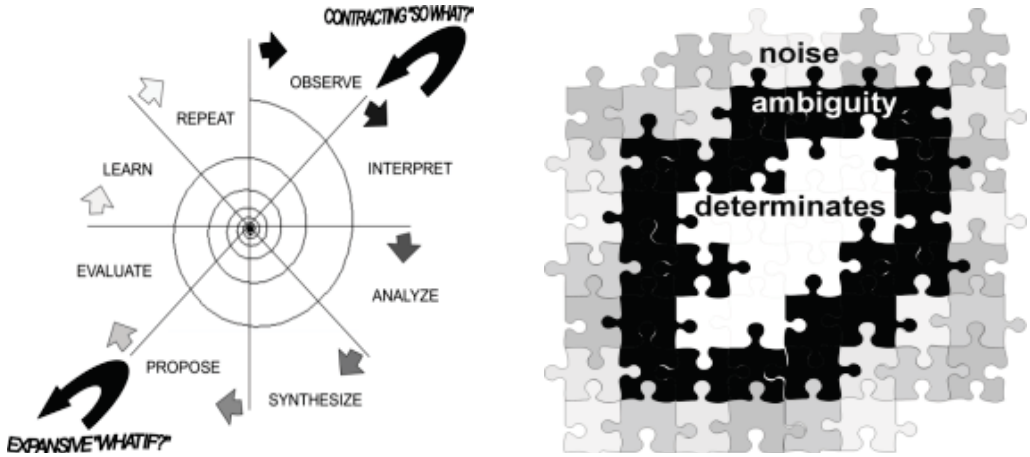

Figure 2a. & 2b: Hermeneutic abduction (Source: Bachman 2012) and Problem space in design (Source: Bachman 2012)

knowledge. The academy must vet creative validity from mere exploration. And, in the end, the profession must struggle to rigorously advance its own disciplinary knowledge base:

> The question of what constitutes research, what constitutes design and if it is even possible to consider design research as a form of knowledge are still questions much debated. In academia we primarily value research that brings new knowledge to the discipline and in professional programs in particular, we seek knowledge that has applicability (Erdman 2011, 2).

In practical terms, the lack of a unifying framework for architectural inquiry has three primary impacts across the full realm of architectural pursuits. First, practitioners struggle to earn value for design investigation and project planning that should certainly be performed to optimize our built environment. Such investigative practices are constrained by normative client expectations for the application of best practice; in part because clients don't view their projects as a basis for experiment, and in part because they do not see the architect as an experimental scientist. The current success of some firms who work to cultivate research based practice only reinforces the need to operationalize what the terms all mean as we go forward.

Secondly, our currently diffuse framework of inquiry has hindered the place of architecture in the academy. Built works designed by faculty members must be set in the context of scholarship and disciplinary contribution, not just as "creative works." Similarly, literature produced by faculty should be vetted on rigorous methodological grounds rather than well-reasoned argument alone. Lesser work in the more exploratory vein of investigation should be culled out for further development. Finally, the scholarship of teaching and learning (SOTL) in architectural education should be a vital basis for developing, validating, and sharing our best practices on teaching and learning.

The third set of practical limitations inherent in the current state of architectural inquiry is the ambiguous state of our fourth castle gate: forensic/strategic investigation. On one hand, digging for project information is not inquiry; it is just digging… and the results are mostly stenography (Leedy 1974). On the other hand, the strategic design component of architectural programming, systems selection, and problem-space definition should be elevated to the same status as design investigation (Bachman 2012). Differences between mere digging for information on one hand, and the structural wisdom of project management on the other deserve clarification. How we embody human intelligence in the built environment is, after all, of much more significance than most modes of product selection and pencil drawer counting. It is also important to note that the gray area between mere digging and clinical strategic forensics has a parallel to classic research in that any investigation that provides new generalizable frameworks for thinking can counted as inquiry, just as any similarly grounded literature review can. Forensics and clinical/strategic design activity are inquiry if, and only if, they pass this test.

2.0 METHODS

Four Gates employs logical argument to problematize existing thought on the root epistemology of architecture as a discipline. Naming and categorization are primary tactics. This is a meta-study in its mode of research-about-research, but does not invoke a comprehensive and comparative study of previous works. The core proposition is that a discipline-specific framework for architectural inquiry can advance structural understanding of architecture's various modes of investigation.

Towards such understanding, the *Four Gates* theory disambiguates architectural research from equally meritorious investigations concerning design, forensics, and education. At the same time, the *Four Gates* explains how these activities make a coherent whole that is unique and native to architecture.

3.0 ARCHITECTURAL INQUIRY AS A CONSTRUCT

Figures 3a lays out Castle Neos as the architect's domain of inquiry with its four gates of investigation. The connection of Design to Research is explained here as the Avenue of Essential Transformations, while the connection from Forensics to Education follows the Corridor of Connective Configurations. The four quadrants formed between the gates simply depict the intersecting neighborhood action. Figure 3b correspondingly illustrates how the architect's four modes of investigation can all fit together in a coherent set of disciplinary activities that comprise the activity of Inquiry.

Starting with the overarching construct, inquiry is the entire set of activities by which we *nurture and grow the wisdom of architecture*; it includes all four relevant modes of investigation. Practice, on the other hand, is how architects complete their contract with society through meritorious service in the *application of that wisdom*. In exchange for a monopoly on the title of architect then, the dual obligations of inquiry and practice are how the discipline is executed, perpetuated, and reproduced generation after generation. This distinction

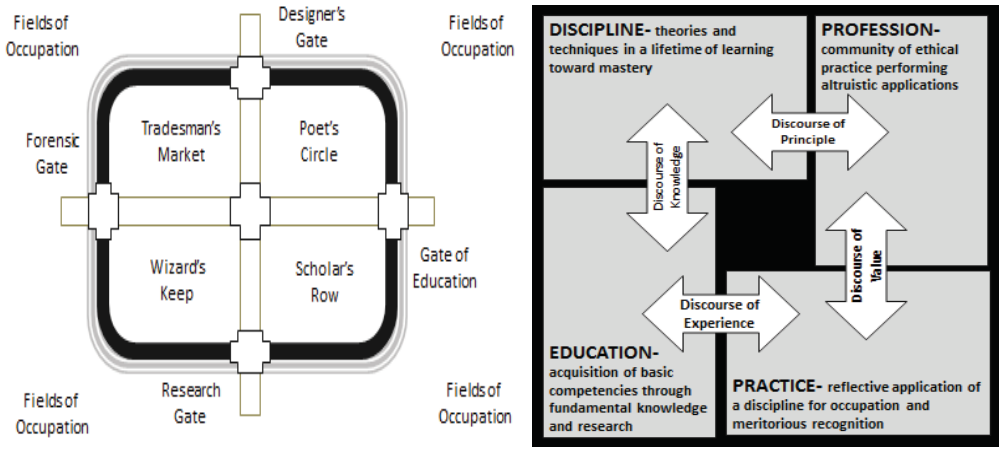

Figure 3a & 3b: Castle Neos and the four gates of inquiry in the context of four realms of the profession. (Source: Author)

separates inquiry from practice: The castle is an interior component of architecture and practice lies externally in the fields of occupation beyond. The walls of Castle Neos spread thick, the moat runs wide, and the spires soar high. This is an accurate illustration, because architectural inquiry concerns a large and difficult body of knowledge, a set of theories and principles, and a lifetime of learning (Fig. 3b)… and all these disciplinary efforts occur peripheral to the occupation of the architect in practice. To push the analogy a bit further, the public interacts with architecture in the fields of practice but, as in any profession, the disciplinary activities of inquiry operate behind the scenes, up the hill, behind the scrim of castle walls.

4.0 THE FOUR MODES OF INQUIRY AS CASTLE GATES

Disambiguating the four modes of investigation clarifies Castle Neos as the disciplinary stronghold of the profession, and how the castle is separate from the fields of occupation. Like the Romantic poets' depiction of the epicurean versus popular viewpoints on art, and like William Hubbard's (1986) comparison of architectural correctness to the shroud of expertise that surrounds the making of fair laws; Castle Neos is a mountaintop citadel where only the initiated can find their way around… more like a forbidden monastery than a popular museum.

To put this castle in order, we must map out the means of entry at each gate. Passage is dependent on the traction of truth value and on the specific methods, strategies, and tactics of each investigation. What passes at one gate is no better or sacred than what passes at another, but the processes, artifacts, and criteria for admission are different. When credentials are allowed too much ambiguity, then the integrity of the entire domain is threatened. Inside the walls, all inquiry is equal and all investigators are equally ennobled, but recognition and standing within the castle must be based on appropriate claims, not on who heralds the loudest trumpets with the fanfare of arrival.

4.1 Essential Transformations: Design and Research Investigations

The grand portals of research and design are ennobled for different reasons of course, but, in the ambitious quest to attain the high standards each mode of investigation represents, practitioners often make mistaken claims about what is research, what is design, and most confusingly, when are they the same thing. This error promotes a conceptual overlap between two very different forms of inquiry.

What design and research investigations share can be termed *essential transformations*. This characteristic pairs design and research in a way that usefully separates them from the *connective configurations* of forensics and education. Dealing first with essential transformations then, we recognize that both design and research are bound to the fundamental analysis-proposition-synthesis mode of human cognition: They both begin with a problematized challenge and work toward the creation of new wisdom that is validated, unique, and generalizable to other situations. They both add to what Gropius called, "the accumulated wisdom of architecture" as an operational test of their truth value. They are both defined by propositional wisdoms and ennobled by the quest for essential transformation.

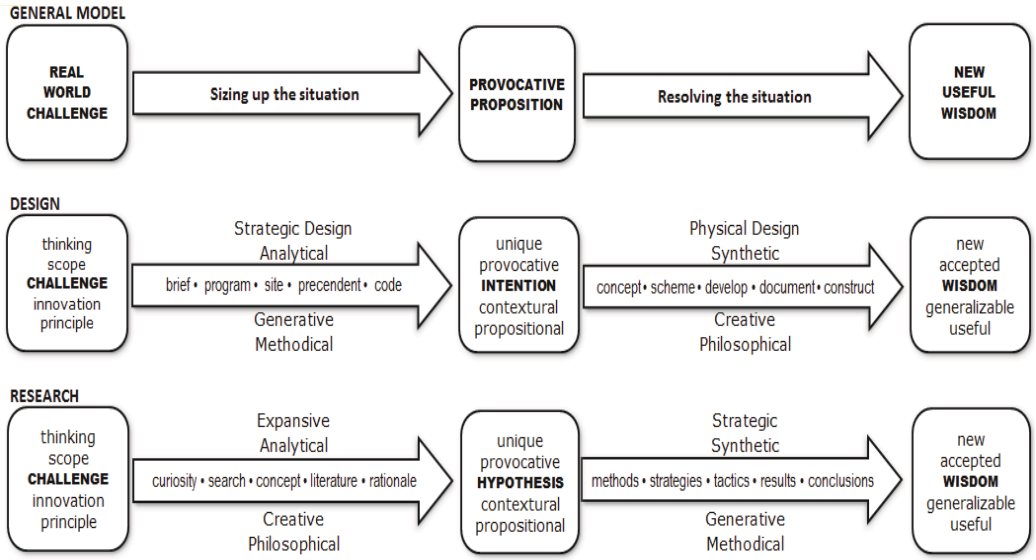

Figure 4. Research and Design in the frameworks of analysis-synthesis. Source: Author (2010)

From that general model however, the analytical and synthetic stages of research and design are crisscrossed and the two investigations become segregated. That is to say, design analysis is methodical, generative, definitional, and strategic. These analytical activities are embedded in clinical tasks of programming, planning, site, code, and other attempts to understand the challenge. In research however, the analysis stage is creative, expansive, and philosophical in its literature review and search for the research question. Correspondingly, in the synthetic post-propositional phases, research turns to methodical data acquisition, organization, and inference; while design synthesis is in its creative, expansive, philosophical mode.

Figure 4 reflects Figures 3a and 3b as a framework for design and research inquiry and shows how design and research are separate modes of investigation. To generalize, in research everything before the propositional question is philosophical and everything after the question is method. In design this is reversed, everything before the propositional idea is methodical, and everything after it is philosophical.
On operational principle then, the common grounds of analysis-synthesis are insufficient for any assertion about design-as-research, or research-as-design. It is probably more correct to say that the creative/methodical crisscross indicates complementary gates to the castle rather than similar ones. Design and research may both lead to new wisdom and essential transformations, but they are not the same mode of inquiry and must thus be regarded as radically independent investigations. Despite their shared rational framework and their mutual employment of generative-methodical and creative-philosophical tactics, design is not research; and research is not design.
In the *Four Gates* model then, we can define the Path of Essential Transformation connecting two gates:

- *Research, the South Gate*—Research investigation focuses on the development and testing of new architectural understanding and the progression of wisdom. Research exists to grow and nurture the large and difficult body of knowledge by which architects serve society. Theory building, case study methods, historical interpretation, and logical argument are primary components of architectural research.
- *Design, the North Gate*—Design Inquiry is fundamentally concerned with connections between the real and the ideal, between the intelligent and the sublime, and between understanding and appreciation. Both the strategic and the physical aspects of architecture are incorporated, but design itself is essentially bound up in the ability to connect the two spheres (Bachman 2012).

4.2 Connective Configurations: Forensic and Educational Investigations

The second pair of gates to Castle Neos is formed by the portals of forensic/clinical investigation and that of educational development. They are connected by the Corridor of Connective Configurations, an avenue where the essential transformations of design and research give way to work within existing knowledge. Through these gates, the architect's generative, unique and useful investigations are concerned with

connective sense-making more than with transformation. The work may be just as creative and significant as with the design-research avenue, but its underlying purpose is directed differently.

Clinical forensics is the least understood mode of architectural investigation, while education is the least valued. Both however are part of a systemic whole and without them as equal fonts of architectural inquiry, the organic complexity of the entire apparatus withers and dies.

Forensics can also be reconsidered as one full half of design because forensic investigation is the *real* aspect that is tantamount to the *ideal* aspect. The root operation of design is to bridge between the two, attaining a constructed and high performing *realization of idealized* aspirations. Design itself is neither the ideal nor the real bridgehead across the moat, it is the act of spanning. The criteria of truth value in forensic investigation as to the *real* is usually taken at the episodic clinical level, but the better work in this quadrant enables novelty both by discovery and by invention. The other vital point is that forensic investigation is how we embody human intelligence in the built environment, so it is clearly one of the four *necessary but not sufficient* components of architectural inquiry.

Educational investigation is a sadly neglected and undervalued aspect of disciplinary knowledge in architecture. There are few empirical studies of the matter in publication. Presently, not one architectural journal focuses narrowly on educational outcomes in a dedicated way. In fact, despite architecture's claim to critical insight and creative approaches, little has changed in architectural education since the formalization of the subject at the Académie Royale d'Architecture in 1671, back when castles really were the paradigm of architecture. So what should be a highly experimental and vigorously innovative discourse on teaching and learning has proven instead to be extremely conservative. By this standard, the studio dominated teaching culture at most architecture schools for example, now lags far behind the intervening centuries of change in history, society, and technology. Furthermore, there is little concerted scholarly effort to connect contemporary architectural education with the best practices of contemporary teaching and learning. Present evolutions in accountability in higher education, evidence driven accreditation, and outcome specific curriculum design may exert some pressures on this situation, but this is regulated change, not systemic and native evolution.

The best opportunity to address deficiencies in educational investigation is to regard it as a wide-open opportunity into the Scholarship of Teaching and Learning (SOTL) in architecture. The SOTL movement was initiated in 1998 by the Carnegie Academy as a necessary public forum on continuous improvement, wherein instructional settings are regarded as laboratories for teaching and learning and the data produced in those laboratories lead to evidence-based improvements in best practice (Carnegie Academy, 1999). If architectural education as we know it deserves introspection, then this is a valid means of investigation. If on the other hand, the current instruction is perfect beyond refinement; then that too certainly merits validation by publication.

Education and Forensic investigations are paired at opposite ends of the Corridor of Connective Configurations because they both involve sense-making in a cybernetic context of steering through existing knowledge. Education is an autopoietic function where the discipline and the profession of architecture reproduces itself and should progressively evolve from generation to generation. In clinical forensics, connective configuration is a teleological function entailing the search for the unique essence of a situation and a match to the corresponding human intelligence that animates it. In both cases, investigations advancing the discipline are essential to a comprehensive map of architectural inquiry.

- *Forensics, the West Gate*—Forensic investigation is the strategic activity that supports project based selections and decisions. As such, forensics includes programming, planning, and other phases of a specific architectural project. Investigations in this area span from episodic project information to generalizable strategic wisdom. Disciplinary value is only attained at the strategic end of that continuum where human intelligence has been methodically embodied in the built environment. The clinical dimension of forensics acknowledges the use of disciplinary knowledge bases such as precedent studies and evidence-based design in the application of one-case-built-on-many-cases. Evolution of forensic investigation in knowledge society validates the necessity of rigor beyond intuitive approaches. This is inquiry.
- *Education, the East Gate*—Educational development is the lifetime of teaching and learning required to maintain and advance one's disciplinary knowledge in architecture. Investigation of teaching and learning towards that development (SOTL) includes well-defined learning objectives and incorporates best practice techniques for achieving them. The studio-centric model is a worthy foundation of instruction, and is well situated to advance the cause of problem based active learning strategies. As in clinical forensics however, the studio's generally intuitive and conventional approaches to teaching and learning in architecture are no longer sufficient. The time

Table 1. The four gates of architectural inquiry and their defining characteristics

	DESIGN	RESEARCH	FORENSICS	EDUCATION
SCOPE	Physical	Positive, post-positive, and emancipatory	Strategic, clinical (one case built on many cases)	Lifetime of teaching and learning
METHODS	Bridging the real and the ideal, abductive hermeneutics	Expanding wisdom and eroding existing paradigms	Information literacy	The scholarship of teaching and learning (SOTL)
SETTINGS	The built environment	Scholarly literature	Project specific	Principles, theories, practices, ethics
TACTICS	Precedent based, contextual, intentional, and opportunistic	Naturalistic, qualitative, and quantitative	Cybernetics, complex systems	History/Theory/ Criticism, studio, technology, and core topics
TRUTH VALUE	Essential transformations	Essential transformations	Connective configurations	Connective configurations
NOVELTY	Transformative, appropriate, and intentional	Contingent truth, new wisdom	Discovery and invention	Autopoiesis, reproduction of the profession
GENERALIZABLE	Critique and discourse	Reliability, validity, conformability, transferability, triangulation	Embodied human intelligence	Advancement of best practices

has come to recognize work that enriches our educational practices, and to lay these efforts out as an independent branch of architectural inquiry.

CONCLUSION

Four Gates theory describes existing states of architectural epistemology as a historically misaligned overlay of disciplinary architectural onto the traditional scientific method. This overlay was once deemed as essential to the entry of architecture into the academy and also vital to its professional status. Four Gates also explains how the construct of Inquiry serves as a better framework for the architect's various and variegated modes of investigation. Furthermore, this new framework provides a level of disentanglement that both distinguishes architectural research, design, forensics, and education as different pursuits, and combines them as an interwoven coherent whole (Table 1).

The descriptive and explanatory elements of the *Four Gates* theory also lead to a predictive component wherein the postindustrial context of knowledge society is liberating. In that evolution, architecture is freed from expectations imposed by industrial age norms of academic and professional status. In its new native framework of architectural inquiry, the hopeful prediction is that the *Four Gates* will open onto a more coherent map of the disciplinary neighborhoods within the castle wall and to a more productive future out in the fields of occupation.

To acknowledge some limitations, the framework presented here is largely concerned with distinguishing the four modes of investigation; but little attention is given to their ongoing nexus at the crossroads. The shared means of validation across all four investigations is not addressed beyond the normal tests of peer review, discourse, critique, and the proof of time. In that sense, this is admittedly a somewhat simplified perspective on a truly complex topic. Further work is required to depict the dynamic networks that weave architectural inquiry into a well-understood set of professional activities. As Figure 3b depicts, there are many connecting discourses which we must understand as well as we do the individual modes of investigation.

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as the support that sustains me. I have only myself to recognize for any shortcomings that remain, and trust that our community of scholars will skillfully vet out the next steps to be taken.

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