

MEASURING TRANSPARENCY: TOWARDS A GREATER UNDERSTANDING OF  
SYSTEMIC TRANSPARENCE AND ACCOUNTABILITY

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## ABSTRACT:

This paper investigates a number of common definitions for transparency employed in the fields of finance and economics by deconstructing the assumptions underpinning its meaning and measurement. Little consensus is found to exist around a single, testable definition for transparency. It is proposed that transparency reflects the level of *disclosure*, *accuracy* and *clarity* in representations. The consequences of transparency are investigated through a game theory model. It is argued that transparent representations benefit the systems to which they are applied. It is further argued that players with higher levels of transparency will be at a competitive disadvantage relative to less transparent players. The principal antecedents to transparency are investigated by exploring a rational model of communication. It is argued that transparency is largely based on the systemic character of information senders. Transparency strategy is seen to moderate the relationship between systemic character and representational transparency.

## Keywords:

Transparency; Accountability; Systems; Disclosure; Accuracy; Clarity

## INTRODUCTION

*“Markets rely on rules and laws, but those rules and laws in turn depend on truth and trust. Conceal truth or erode trust, and the game becomes so unreliable that no one will want to play. The markets will empty and share prices will collapse, as ordinary people find other places to put their money – into their houses, maybe, or under their beds”*

- Charles Handy (Handy, 2002: 49)

The Latin etymology of the word *transparency* is bipartite, consisting of *trāns* – meaning “across” or “through” – and *pāreō* – meaning “be seen”. In the physical sciences, the Merriam-Webster Dictionary defines a transparent object as having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly. Social scientists have metaphorically adopted this definition to connote the ability of interested parties to see through otherwise private information.

Given the vagueness of this conceptualization, researchers have attempted to define transparency in a number of more specific ways. Unfortunately, the ad hoc manner in which social scientists have defined transparency has resulted in a plethora of related-but-different meanings for the construct.

The common thread holding most definitions of transparency together is the notion that information must be disclosed to be transparent. The idea of disclosure, however, appears to be insufficient to explain transparency for a number of reasons. The aim of this study is to extrapolate these reasons and to identify a comprehensive definition of transparency that can be

investigated at multiple levels of social systems. In particular, this paper looks to answer the question “what constitutes transparency?”

This paper is positioned as a theoretical contribution to existing literature investigating transparency in systems. The majority of published work pertaining to transparency in systems is found in the fields of finance, accounting, and economics. Hence, work in these fields is tied to relevant work in communications theory to build a comprehensive definition for transparency. A review of the current literature employing the use of transparency is first presented. A number of important consequents and antecedents to transparency are then explored. A discussion is presented to link transparency to some interesting areas for future research, and finally, limitations are conferred.

### **WHAT IS TRANSPARENCY?**

Historically, scholars have defined transparency along two primary levels. For the purposes of this study, these levels are referred to as the macro-level of transparency (e.g., national, country, and/or market level) and the micro-level of transparency (e.g., organizational, and/or transactional level). Using macro and micro-level definitions, researchers have investigated transparency as both the dependent variable (Churchwell, 2003; Hodge, Kennedy, & Maines, 2004; Patel, Balic, & Bwakira, 2002) and independent variable (Rosengren, 1998; Winkler, 2000) under question.

#### **Macro-Level:**

In financial markets, the Securities and Exchange Commission (SEC) identifies transparency as the real time, public dissemination of trade and quote information (Securities and Exchange Commission, 1995). Similarly, the Securities and Investment Board (SIB) defines transparency

as the prompt publication of large trades (Securities and Investment Board, 1995). Pagano and Roell (1996) define transparency as the extent to which market makers can observe the size and direction of current order flow. A key difference between these definitions is both the SEC and the SIB identify the general public as the primary beneficiary of market transparency, whereas Pagano and Roell identify internal actors (i.e., market makers) as the primary beneficiaries of transparency. In monetary policy decision making, central bank transparency is broadly defined as the absence of asymmetric information between monetary policymakers and other economic agents (Geraats, 2002). Winkler (2000) identifies transparency more conceptually as the degree of openness, clarity and information efficiency enacted by monetary bodies.

### **Micro-Level:**

In organizations, transparency is defined as the extent to which financial information about a company is visible and understandable to investors and other market participants (Bushman, Piotroski, & Smith, 2004; Herdman, 2001). Lamming, Caldwell, Harris, & Phillips (2004) identify micro-level transparency more specifically as the act of exchanging sensitive information and tacit knowledge in supply relationships. Although both of these definitions are investigated at the organization level, the former relates transparency to financial statement disclosures while the latter relates it to the notion of inter-organizational relationships. In transactional settings, transparency is recognized as the extent to which the seller reveals private information to the consumer (Granados, Gupta, & Kauffman, 2005). With regard to electronic transactions, Granados, Gupta, & Kauffman (2006) define transparency as the offering of unbiased, complete, and accurate information.

It is clear that the term transparency is often adopted and applied by scholars in a variety of different ways. The philosopher Richard McKeon has postulated that “Communication and

presentation depend on unambiguous definition in basic statements and on consequential consistency in discursively related statements” (McKeon, 1990: 210). Unfortunately, researchers have often operationalized the construct of transparency to “fit” the study at hand with little regard to the theoretical narrative of the term.

### **WHY IS IT IMPORTANT?**

The importance of studying transparency is often emphasized by scholars investigating both macro and micro-levels of social phenomena. Whilst the definitions of transparency applied to each of the following studies are not homogeneous, it is nonetheless appropriate to present a snapshot of the current literature outlining the importance of transparency.

#### **The Macro-Level:**

Tanzi (1998) found that national corruption in investment projects, procurement spending and extra-budgetary accounts is linked to a lack of national transparency. Jappelli and Pagano (2002) show that the availability of private sector credit is greater in countries where information sharing between participants is more developed. In financial markets, Flood, Huisman, Koedijk, and Mahieu (1999) find that opaque (i.e., non-transparent) markets often reflect wider opening price spreads and lower trading volume than transparent markets. In the banking sector, Jordan, Peek, and Rosengren (2000) found that enhanced disclosures improve the allocation of resources throughout the banking system. Similarly, Froot and Stein (1998) show that banks actively seeking transparency may be able to hold less capital and invest more aggressively in risky and illiquid loans. With regard to crises in banking systems, Rosengren (1999) argues that transparency is not a panacea for preventing crises. Rather, he argues that transparency can act as an agent to reduce the costs of crises.

Contrary to the belief that increased transparency is always desirable, Bloomfield and O'Hara (1999) argue that issues of efficiency in financial markets may be more about the degree of transparency sought rather than its absolute attainment. Others have conceded that the benefits and costs to transparency is an open and important issue requiring further empirical investigation (Eijffinger & Geraats, 2006).

### **The Micro-Level:**

Herdman (2001) argues that it is critical for all public companies to provide an understandable, comprehensive and reliable portrayal of their financial condition and performance in order to maximize investor confidence. Patel et al. (2002) find that micro-level transparency is integral to effective corporate governance, and Lamming et al. (2004) show that transparency can positively influence inter-organizational relationships. Information provided by private credit bureaus has shown to assist organizations in successfully predicting loan defaults, and survey data suggests that lenders value this information in their credit appraisal processes (Barron & Staten, 2003; Brown & Zehnder, 2005; Kallberg & Udell, 2003; Miller, 2003).

Although the importance of investigating transparency is well noted, the significance of its understanding appears to be less received in everyday life. For example, credit agent Veda Advantage recently found that two million people in Australia admitted to deliberately under-estimating expenses and existing credit commitments in an effort to obtain new credit. Additionally, 1.2 million people admitted to over-estimating their income and 800,000 admitted to lying about their work history (Durkin, 2007). A related study conducted in the United States found that out of 3,883 individuals seeking credit, 3,817 exhibited at least one missing value in their application materials (Hand & Henley, 1997).

## PROBLEMS WITH TRADITIONAL DEFINITIONS OF TRANSPARENCY

Churchwell (2003) analyzes financial statement disclosures of foreign companies using *Transparency and Disclosure (T&D)* scores produced by Standard and Poor's. Her study proposes that international companies interacting with U.S. markets tend to be more transparent in their dealings than those that do not. Using this study as an example, a number of issues surrounding the current state of understanding about transparency can be identified.

First, transparency is defined as the quality of information a company provides to various stakeholders. However, the independent variable used to gauge transparency – Standard and Poor's Transparency and Disclosure (T&D) scores – rates foreign corporations on their ability to disclose information consistent with modern financial statement disclosure practices but does not explicitly consider the quality of information within those disclosures. This establishes a construct validity problem. Because T&D scores neglect to investigate the degree to which foreign corporations provide *accurate* information, information quality cannot be considered part of the independent variable measuring transparency.

Second, the degree to which the corporation provides information to various constituents is not investigated by T&D scores. Modern financial markets require public organizations to make certain financial information readily available. However, the degree to which such information is available to capital providers, suppliers, customers and other stakeholders can vary considerably from firm to firm. For example, two firms might independently publish financial statements on their respective websites but only one might send that information to stakeholders and other interested parties. Hence, T&D scores measure the *quantity* of information disclosed to various constituents but neglect to measure the *availability* of such information.

Finally, T&D scores analyze the financial disclosures of foreign corporations using International Accounting Standards (IAS) and US Generally Accepted Accounting Principles (GAAP) as implicit benchmarks (Patel et al., 2002). Using such benchmarks establishes a kind of methodological ethnocentrism. Whilst the imposition of standards might be considered a positive correlate to transparency, it is inaccurate to measure an item against a standard if the item itself refrains from following the standard. Organizations from countries that do not follow IAS or GAAP may find otherwise acceptable disclosures labeled nontransparent or undisclosed without any qualification to the inherent bias of the ranking methodology.

Although the T&D score construct sufficiently rates the disclosure practices of foreign firms under modern regulatory standards, it fails to satisfactorily represent the degree of information clarity, information accuracy and information availability in financial statements. Because financial disclosures are generally defined as announcements that employ an accounting technique, disseminate policy and make somewhat verifiable forecasts (Diamond & Verrecchia, 1991), T&D scores can be seen as less a measure of transparency as they are simply a measure of what has traditionally been defined as disclosure.

There are two important points to take away from this analysis: First, the confusion surrounding the relationship between transparency and disclosure is not at all isolated to the T&D score construct. Indeed, the lack of an overarching and commonly accepted definition for transparency necessarily points to a lack of common understanding about its constituent parts. Second, the traditional definition of disclosure appears to be insufficient to comprehensively represent transparency.

## **PROBLEMS WITH MEASURING TRANSPARENCY**

Aside from the macro and micro-levels of analysis identified in the literature, transparency has historically been measured along two primary dimensions; one which considers the controllable factors inherent in strategic information sending to be the extent of its measurability (Bernanke & Mishkin, 1997; Bini-Smaghi & Gros, 2001; Fracasso, Genberg, & Wyplosz, 2003; Fry, Julius, Mahadeva, Roger, & Sterne, 2000; Geraats, 2002), and another that considers the duality and complexity of relationships, meaning making and understanding to be at the core of its application (Lamming et al., 2004; Morris & Shin, 1997; Winkler, 2000). Both are related, but both are very different ends to apply to the same construct. Unfortunately, scholars have failed to recognize the difference between these closely related but independent measures of transparency. The following discussion analyzes the appropriateness of measuring understanding as a way to gauge transparency in systems.

### **Measuring Understanding:**

Understanding is an interpolative and probabilistic process (Ackoff, 1989). The topic of understanding is well documented in the literature pertaining to interpersonal communications. Because this paper looks to identify the meaning of transparency on multiple systemic levels, the following discussion critically analyzes relevant work in communications theory by employing a systemic lens.

Jurgen Habermas has put forth an extensive literature on the issue of understanding and communication (Habermas, 1984, 1987, 1998). He eloquently states “The aim of reaching understanding is to bring about an agreement that terminates in the intersubjective mutuality of reciprocal comprehension, shared knowledge, mutual trust, and accord with one another.

Agreement is based on recognition of the four corresponding validity claims: *comprehensibility, truth, truthfulness, and rightness*" (1998: 23).

Habermas (1998) sheds-light on two important limitations pertaining to the use of understanding as a measure of transparency in systems. First, communication that fails to meet one of the previously mentioned validity claims is still considered to be valid communication unless it is entirely unintelligible. Such utterances will be interpreted and accepted or rejected by the information receiver even if they are, for instance, untruthful or misleading. Should an information sender successfully induce understanding by uttering a statement that is purposefully misleading (i.e., breaking a validity claim), the receiver will still claim to understand the statement regardless of its fallacious nature because he/she will perceive the sender to have met all four validity claims. Thus, the strategic goals behind information sending can influence understanding in a number of ways that may or may not be beneficial to the receiver, but the receiver will likely report that the information was satisfactorily understood nonetheless. Researchers may be interested in extrapolating the circumstances about the broken validity claim as much as they are interested in knowing the level of mutual understanding reached between the information sender and receiver. Hence, measuring understanding is an insufficient approach to fully elucidate the intent behind information sharing.

Second, outside of hearing or reading a statement and accepting its constituent validity in toto, there is an explicit assumption that communication must be bidirectional for understanding to take place. Here lies the problem with investigating understanding in complex systems; information is very often disseminated with very little opportunity for individual receivers to gain clarification about its meaning directly from the information source. Morris and Shin (1997) show that the most we can hope for is imperfect coordination in distributed systems where

communication between actors is not perfectly reliable. Indeed, the modern proliferation of technologies allowing for the mass-distribution of representations can be seen to exacerbate this point.

To summarize, investigating the degree of understanding reached by system participants to measure transparency is problematic for two reasons. First, it is insufficient to effectively extrapolate actor intent and accountability. Second, it creates a theoretical problem about the measurement of transparency in systems. Namely, how can researchers investigate a systemic phenomenon that is measured entirely by mutual understanding when communication between actors is often unidirectional and non-linear? Such an environment is indeed representative of both organized and disorganized systemic levels of complexity (Weaver & Warren, 1948). Hence, the answer is quite simple; we can't fully investigate transparency by measuring common understanding in systems. Given the tools of analysis available to researchers of social science today, examining systemic levels of understanding is valid only to determine the distribution of generally accepted views about a topic, theme, idea, statement, action, or other representation. It is not an effective means to extrapolate transparency.

### **So What Can We Study?**

Whilst information senders cannot control entirety for the complexities of understanding, they can control for some aspects of it. For example, if a British man – fluent in both English and Japanese – is speaking with a Japanese woman fluent only in Japanese, one would expect the British man not to speak in English. Rather, he would speak in Japanese. Here, understanding is controlled for at the lingual level. But other, more subtle aspects of understanding (e.g., the influence of national culture on the interpretive mentality of the receiver) may not be considered. As one can see, the use of such things as a common language or an awareness of foreign culture

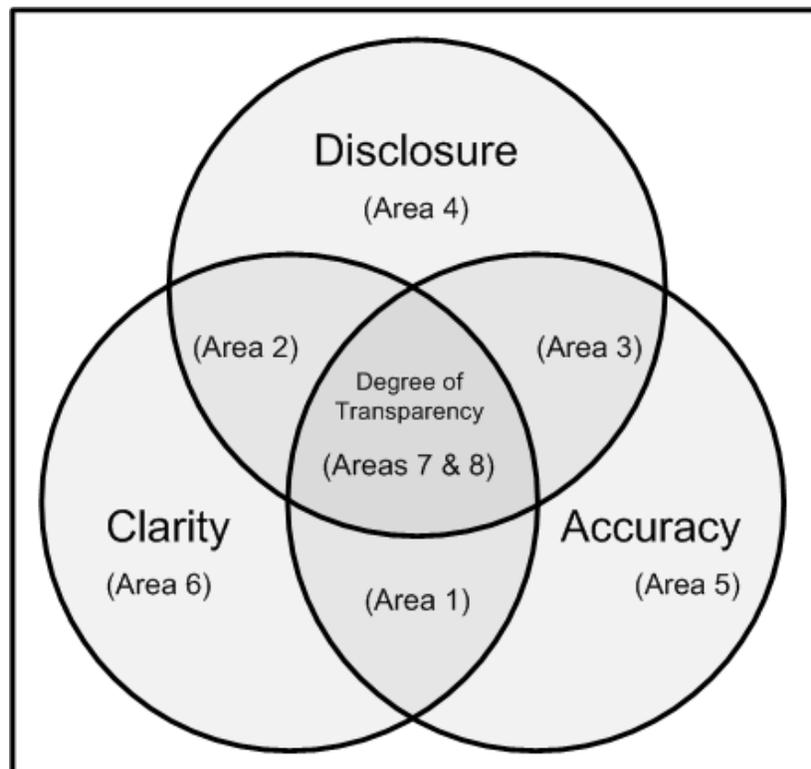
can *guide* understanding, but it is not possible for the information sender to *control* understanding.

Adopting the notion that some aspects of understanding can be guided unilaterally by the information sender, this paper posits that systemic levels of transparency are a function of the unilateral representations made by information senders looking to establish a degree of transparency between themselves and various information receivers. Hence, the following discussion will attempt to fully elucidate the controllable aspects of information sending that contribute to the establishment of such transparency.

### CONCEPTUAL MODEL OF TRANSPARENCY

It is proposed that transparency consists of three interrelated principles: *Disclosure* (i.e., the quantity of information presented and the degree to which it is available to interested parties), *clarity* (i.e., the degree to which media selection, contextual sensitivity, linguistic coherence, presentation, noise management and relevance allow for understanding to take place), and *accuracy* (i.e., the degree to which information is accurate as perceived by the sender). Independently, all three principles of transparency are necessary but not sufficient for information to be considered transparent. Further, all three principles are in a constant state of iteration as representations are constructed. A depiction of the proposed principles of transparency is offered in Figure 1. The numbered areas in the model are discussed after the basic parts of transparency are delineated.

**Figure 1: Conceptual Model of Transparency:**



Looking at the model, it is helpful to visualize each circle consisting of a shade between complete transparency and black; transparency representing clarity, disclosure and accuracy and black representing non-clarity, non-disclosure and inaccuracy. The level of transparency in a representation is a function of the shades of all three circles.

Because transparency is encased in representations, it is appropriate to explicitly outline what is meant by a representation. This study follows the Aristotelian account for representation as outlined by Mitchell (1995). Namely, representations consist of objects (i.e., the symbols being represented), manners (i.e., the way symbols are represented), and means (i.e., the material that is used to make the representation). The objects of a representation may include such things as musical notation or the perceived symbols undergirding various actions. The term “text” employed by Taylor and Van Every (2000: 37-38) refers to a similar conceptualization of what is meant by representation. Text, however, refers to the combining of words to form an understandable fragment of language. The term representation is used here to emphasize the enactment of communication that may or may not be constructed to form a coherent piece of language. Individuals learn the labels with which they see and interpret their world through social interaction, and these labels are enacted through representations that are created, manipulated and applied by human beings in interaction (Berger & Luckmann 1967).

A brief definition of each dimension of transparency is now presented, followed by a discussion of the various interactions within the model.

**Disclosure:**

Disclosure is meant to include both the *quantity* of information in a representation as well as the *availability* of that representation to interested parties. Core (2001) identifies disclosure quality

as an agent to disclosure policy optimization in organizations. Such studies necessarily infer that *quality* is a separate and identifiable element to disclosure. The interactional accord between disclosure, accuracy and clarity presented here establishes a unique view of the relationship between transparency and disclosure that addresses this void.

**Accuracy:**

Accuracy is defined as the degree to which information is accurate as perceived by the sender. In other words, accuracy is the degree to which information senders *intend* to provide information that is congruent with what they perceive as accurate. Thus, transparency is not concerned with analyzing how accurate information is *ex post*. Such a measure would be an impossible end to apply to senders of necessarily imperfect information. Instead, accuracy is concerned with ensuring that material claims are made truthfully and reflect truthful qualifications about their perceived validity.

**Clarity:**

Clarity is a difficult principle to pin down. It is the only principle primarily based on the perceived interpretive capabilities of the receiver along with the perceived circumstances about the receiver at the time he/she engages with the representation. It is the principle of clarity that infuses representations with the capability to guide understanding.

Within the literature, clarity is seldom directly investigated but often noted for its importance to managers and researchers. The philosopher John Dewey states “It is more or less a commonplace that it is possible to carry on observations that amass facts tirelessly and yet the observed ‘facts’ lead nowhere” (Dewey, 1938: 70). It has been argued that science in general needs more relevant facts rather than an amalgamation of just more facts (Chalmers, 1999). Within organizations,

Daft and Lengel (1986) found that a major problem for managers is a lack of informational clarity rather than a lack of sheer data.

Ackoff, Gupta, and Minas (1962: 426) offer a passage that elegantly ties together a number of the components to clarity. They state “It is very easy to conceal glib assumptions from oneself and others by the use of symbols and technical jargon. As one approaches expression in Basic English, however, self-deception and deception of others become increasingly difficult. Simplicity of expression, like brevity, is the result of extended distillation and evaluation of ideas; it takes a long time and much effort to attain.”

In the first and second sentences of the passage, the need to reduce language to its basic uses is outlined. This can be seen as a demonstration of *contextual sensitivity*. Garfinkel (1967) argues that a degree of context must be established around communication for understanding to take place. Silverman (2001: 17) defines contextual sensitivity as “the recognition that apparently uniform institutions like ‘the family’, ‘a tribe’ or ‘science’ take on a variety of meanings in different contexts.” Adding to this definition, contextual sensitivity is envisaged to include the perceived availability of *time* for making a representation as well as the influence of other cultural or environmental factors that might sway the understandability of representations.

The difficulty and importance of establishing *linguistic coherence* (i.e., establishing grammatical and semantic coherence) is outlined by Ackoff et al. in the third sentence of the passage. With uttered representations, linguistic coherence refers to the level of clarity in locutionary acts and illocutionary acts (Chomsky, 1995; Austin, 1962). Locutionary acts refer to the phonology of an utterance and its ostensible meaning, and illocutionary acts are defined through Schiffer (1972) as the intended meaning of the utterance. Linguistic coherence is a component to clarity that is

iterative with both the quantity of information disclosed and accuracy. The *selected media* of representations do not have to include linguistic components. However, in such cases it is likely that the clarity level of those representations will be low (i.e., a picture worth a thousand words can be conceptualized as virtuously unclear).

*Presentation* and *noise management* are independent-but-related components to clarity. Presentation is most concerned with increasing the understandability of representations in ways that are appropriate for the given context. In uttered representations, presentation includes the proper application of both verbal paralinguistics such as grunts, giggles, laughs and sobs (Wilson, 2000) and nonverbal paralinguistics such as turn-taking (Sacks, Schegloff, & Jefferson, 1974) and kinesics (Birdwhistell, 1952, 1970). Kinesics referring to the interpretation of non-verbal behavior related to body movements. Observable expressions of emotion (i.e., affect display) also play an important role in the presentation of representations (Batson, 1992). In broad terms, presentation can be considered a manifestation of the intended design of a representation.

Presentation may require the use of a diverse range of media. However, such presentations might inadvertently establish or exacerbate noise factors around the representation. Under such conditions, noise management can be conceptualized as a counterbalance to presentation. Regardless of presentation, the information sender must consider the possible noise conditions that might influence the understandability of representations. Claude Shannon's (1948) noisy-channel coding theorem can be thought of as a seminal attempt to formalize the idea of noise management presented here.

*Relevance* is a component to clarity that is highly iterative with disclosure. The question of how much to disclose is intimately related to the question of relevance. Relevance is often missed

when making unidirectional representations in systems consisting of nonlinear behavior. Representations offering the most relevance will be the ones that consider the most appropriate questions – either implicit or explicit – asked by real or imaginary information receivers.

**Dual Interactions:**

Information that is accurate and clear yet undisclosed will likely go unnoticed by interested observers. For example, consider financial performance information that is of value to interested observers but purposefully withheld by an organization (*Area 1* of the model).

Clearly disclosed representations consisting of inaccurate information can lead information receivers to make potentially disruptive inferences about its value. For example, consider inaccurate profit information disclosed by an organization (*Area 2* of the model).

Fully disclosed representations consisting of accurate information may be so unclearly presented that the information receiver cannot make meaning out of them. The standards outlined in the US Securities Act of 1933 mandates an “opaque” level of transparency relevant to this area of the model. It requires that investors receive financial and other significant information concerning securities being offered for public sale and prohibits deceit and misrepresentations in the sale of securities (Jenkinson, Morrison, & Wilhelm, 2006). Examples of how non-clarity can negatively influence the transparency of accurately disclosed information are readers of legal disclosures that are unfamiliar with legalese (*Area 3* of the model).

**The Outer Ring:**

Fully disclosed information that is neither clear nor accurate is of little value to information receivers. For example, consider misleading financial statements read by individuals unfamiliar with the principles of finance or accounting (*Area 4* of the model).

Information that is both undisclosed and not yet analyzed for its representative clarity is rendered useless even if it is accurate. For example, methods for achieving productivity gains established by a German subsidiary that are about to be translated and applied to a subsidiary in China (*Area 5* of the model). Here, the subsidiary in China is the information receiver. As one can see, the information from the German subsidiary is of little value to the Chinese subsidiary until it is translated and disclosed.

Information that is suspended in clarity alone is clearly presentable, but has not been disclosed to interested parties. Inaccurate profit information that has not yet been disclosed, but might strategically increase investor confidence in the firm should it be disclosed, is an example narrative of this area (*Area 6* of the model).

**Non-Transparency:**

Information that is unclear, undisclosed and inaccurate can be conceptualized as fully non-transparent. These representations are difficult to identify. Because clarity is established around the perception of the receiver, representations that are only clear to the sender, inaccurate, and undisclosed are examples of non-transparency (*Area 7* of the model).

**Transparency:**

When representations are disclosed, accurate, and clear the information contained within them can be considered to hold a strong degree of transparency. However, because representations are necessarily constrained by such things as a limited availability of time and our imperfect ability to “read” the requirements of information receivers, purely transparent representations arguably do not exist. Taylor and Van Every (2000) show that residual ambiguity always exists, irrespective of how clear one tries to make him or herself. If one circle of the model should

progress away from transparency, the overall level of transparency in the representation darkens. Indeed, representations are almost always imperfect in one way or another (e.g., exhibiting only partial relevance, little contextual sensitivity, some inaccuracy, unavailability, etc.). Hence, all forms of representation between humans can be seen to exhibit a degree of “opaqueness” or “translucence” (*Area 8* of the model).

## MEASURING TRANSPARENCY

Measuring the perceived level of relative clarity and disclosure in representations is not particularly difficult. This is because clarity and disclosure are at least partially iterative with the perceptions of information receivers on the manifest or “observable” level. However, clearly disclosed statements may be statements of opinion that are entirely accurate but non-delineable because the level of accuracy in opinions is difficult to analyze. Hence, splitting the measurement of transparency into two parts is necessary in order to account for the difficulty of measuring accuracy.

The first part investigates the degree of disclosure and clarity in representations. This type of measurement does little to extrapolate accuracy, but it does shed light on the amount of surface-level transparency in representations. The extrapolation of such transparency is henceforth referred to as a study of *Manifest Transparency*. A full measurement of disclosure, accuracy and clarity within a representation is henceforth referred to as a study of *Latent Transparency*. A key difference between these two levels of measurement is representations reflecting a capacity to be studied at the latent level allow accountability to be elucidated. In other words, the deeper one is able to elucidate latent transparency, the more the information sender can be held to account for the information within the representation.

The more a representation is qualified for its inherent validity, the easier it is to measure accuracy. For an analysis of latent transparency to be effectively conducted, a representation should meet three requirements. First, the representation should consist of one or more factual assertions that can be explicitly tied to commonly accepted scales of measurement (i.e., factual assertions cannot simply be opinions of fact). Such scales can be as simple as “yes” or “no” answers to questions posed to confirm or reject assertions of fact or they can be much more

complicated. For example, the statement “we have plenty of time to complete this report” is not a valid representation to investigate on the latent level because “plenty of time” is a subjective scale of measurement. However, the statement “we have four days to complete this report” is valid as long as “days” can be conceptualized as a commonly accepted scale of measurement. Commonly accepted scales of measurement may be considered right by some and wrong by others. For the purposes of this paper, commonly accepted scales of measurement are conceptualized as those artifacts that, rightfully or wrongfully, have been black boxed by society as generally accepted (Latour, 1987: 29).

Second, in order to validate the accuracy of the assertions of fact made by the information sender, it should be possible to identify both the authors and creators of the representation, as well as the individuals, documents, or other references explicitly tied to the assertions of fact in the representation. References are analyzed against assertions of fact to establish a degree of confidence about the accuracy built into the representation. Because one cannot experience the mind of another (Schultz 1967), it is not possible to fully elucidate the level of honest intent in a given representation even if it is deeply qualified. Honesty, defined by the Merriam-Webster Dictionary as fairness and straightforwardness of conduct, is an antecedent condition to the development of disclosure, clarity, and accuracy in representations. As a property of the information sender, honesty does not exist in representations. Whilst an analysis of latent transparency does not look to measure honesty, the topic is important nonetheless. Hence, honesty will be discussed further in the section investigating the antecedents to transparency.

Third, it must be possible to cross-analyze assertions of fact through references that offer confirmations or disconfirmations relevant to the time period the representation was made in order to avoid making ex post judgments of accuracy. In the literature, Selltitz, Jahoda, Deutsch,

and Cook (1964: 245-246) outline the difference between “facts” and “beliefs about facts” in survey research. The “facts” they refer to are sought here to investigate accuracy except that they must also be tied to commonly accepted scales of measurement. “Beliefs about facts” are generally not sufficient to study accuracy but they are sufficient to study clarity and disclosure.

## **CONSEQUENTS OF TRANSPARENCY**

### **Systems Theory, Information Asymmetry, and Transparency:**

Communicative representations exist in systems boasting a variety of conceptual boundaries. The idea that systemic boundaries relate in some way to representations is entirely overlooked in the vast majority of transparency research. For example, consider the representations made by the Chief Executive Officer (CEO) of a public company. When the CEO speaks with the board of directors about the financial condition of the company, she will likely express a different level of transparency than she would when speaking with a group of CEOs from organizations that compete with her firm.

The objectives of the CEO can be considered one of the most important factors influencing her level of representational transparency. The objectives of the CEO are generally in a state of tension with her ability to remain systemically objective. She is expected to be transparent to the board of directors because it is assumed that a strong degree of congruence exists between her personal objectives and the interests of the board. On the other hand, the level of transparency in her representations towards other CEOs is expected to be lower mainly because the objectives of each CEO are perceived to be incongruent. Hence, the CEO is acting transparently towards the original definition of the system boundary for which she works (i.e., the firm), but under a

slightly different definition of the system boundary for which she works (i.e., the industry), the level of transparency in her representations falls.

This is a phenomenon well documented in the literature investigating information asymmetry (Akerlof, 1970; Cukierman & Meltzer, 1986; Miller & Rock, 1983; Sharpe, 1990; Stigler, 1961), agency theory (Eisenhardt, 1989), moral hazard (Dembe & Boden, 2000), and adverse selection (Spence, 1973; Stiglitz & Weiss, 1981). However, the systemic boundaries defined to measure the benefits and costs of transparency are generally unconsidered in the literature pertaining to transparency. There is no theoretical reason two competing CEOs cannot make transparent representations to one another under conditions where the system boundary is defined to include competing firms. However, the two competing CEOs are not likely to share a common set of goals because they do not perceive the industry to be the primary system to which they owe their allegiance.

The takeaway here is simple, where system boundaries encompass participants that share goals, transparent representations are more likely to exist because they theoretically add value to the system as a whole. When system boundaries are drawn to include participants that do not share goals, non-transparency is more likely to exist because participants will want to sustain whatever asymmetric information advantages they hold. When scholars find the level of transparency in financial statement disclosures from various organizations within a given equity market is low, and they also find a positive relationship between organizational transparency and market efficiency, they call for increasing levels of market transparency without recognizing that they have inadvertently crossed two systemic boundaries that are fundamentally separate. Whilst this point appears obvious, it is an insight seldom acknowledged in the literature.

## Systems Theory, Game Theory, and Transparency:

*“The fundamental problem of the theory of games is to find the methods by which a player can obtain a ‘most favorable result.’”*

- (Kuhn & Tucker, 1958: 106)

Game theory investigates the possible actions individuals take when multiple actors are independently placed in a situation with finite resources. A basic game consists of two participants having the option to act cooperatively or competitively with one another (Poundstone, 1993). In Table 1, a two person game is outlined using Albert W. Tucker’s original “Prisoners Dilemma” scenario (Rapoport & Chammah, 1965):

**Table 1: The Prisoners Dilemma Game Theory Model**

	<b>B cooperates with A</b>	<b>B competes with A</b>
<b>A cooperates with B</b>	1 to A and 1 to B	-2 to A and 2 to B
<b>A competes with B</b>	2 to A and -2 to B	-1 to A and -1 to B

When cooperation exists between two individuals (i.e., between person A and person B), they each gain. When A competes with B and B cooperates with A, A wins and B loses. When B competes with A and A cooperates with B, B wins and A loses. When both compete, they both lose.

If the fundamental problem of a theory of games is to find the optimal solution for individual players, than the fundamental problem of a theory of transparency is to find the optimal solution for the overarching system. When transparency and systems theory are considered alongside the above game theory model, some interesting insights emerge. First, the game becomes inverted

from the systems perspective and the total number of available points becomes the maximum each player can possibly gain. This can be represented by the operation  $P + S = 0$ , where S equals the total system gain calculated as the additive inverse of P, and P equals the total player gain denoted by  $P = \sum (p_1, p_2, p_3 \dots p_i)$  where p equals individual player gain. Second, benefits to the system are generated when player representations reflect a high degree of transparency *based on the objectives of the system*. It is important to recognize that the following game is constructed in a closed system environment in order to show the basic relationship between transparency and system performance. (Table 2)

**Table 2: The Prisoners Dilemma where the Prison Ward Represents the System**

	<b>B is non-transparent towards the system</b>	<b>B is transparent towards the system</b>
<b>A is non-transparent towards the system</b>	$(1 + 1) + (-2) = 0$ or <b>-2 to the System</b>	$(-2 + 2) + (0) = 0$ or <b>0 to the System</b>
<b>A is transparent towards the system</b>	$(2 + -2) + (0) = 0$ or <b>0 to the System</b>	$(-1 + -1) + (2) = 0$ or <b>2 to the System</b>

When A and B are both non-transparent towards the system, the system loses. When A is transparent towards the system but B is not, the system gains from the transparency from A, but loses from the non-transparency from B. When B is transparent towards the system but A is not, the system gains from the transparency from A, but loses from the non-transparency from B. When both are transparent towards the system, the system wins.

A relevant question that surfaces at this point is “how might one act transparently towards the system?” The answer is quite simple; one will act transparently towards the system when he or she operates in ways congruent with the objectives of the system. When one perceives him or

herself to win when the system wins, he or she will likely make transparent representations towards the system.

Another interesting question is “how might one define the system boundary?” The system can be defined to consist of the self as a single actor or it may include a large number of outside entities. Systemic coordination is an emergent characteristic resulting from a collage of theoretical forces (e.g., culture, hierarchy, power distance, tipping points, complexity, etc). Hence, the value dispersion generated within transparent systems is difficult to predict. If value dispersion is unsatisfactorily coordinated, it is likely that subsystems will emerge.

Actors that define the system boundary in the narrowest way should experience a fundamental competitive advantage relative to other actors in the system. Assume for instance that person A draws the system boundary around his or her own firm and person B draws the system boundary around his or her industry. Assume also that person A and Person B operate in the same industry. Person A does not have to worry about the greater success of the industry while person B does. Hence, person B will be more transparent towards the industry, which includes the system boundary defined by person A. Person A can then leverage the transparency from person B in various purposive ways to meet the objectives of his or her firm. In summary, the smaller the system boundary that one draws around him or herself, the more competitive advantages he or she will likely experience relative to others in the same system that draw larger systemic boundaries around themselves. However, when all actors independently draw small system boundaries around themselves, the larger system consisting of all such entities will suffer.

The reason transparent systems fracture into non-transparent subsystems can now be analyzed. Subsystems emerge to counter the perceived inequity in value dispersion generated by larger

systems. The marginal value realized by drawing a smaller systemic boundary around the subsystem is perceived to outweigh the value lost through transparently interacting with the larger system.

### **“Primary” and “Spillover” Systems:**

The above analysis considers the dynamics inherent in a closed system environment. When systems are perceived as open and able to generate negative entropy (Katz & Kahn, 1978), a number of further insights emerge. When a high degree of non-transparency is perceived to exist within a system, other, more distal systems will inevitably persist to clean up the waste from that “primary” system. For example, the system of financial auditing is a “spillover” system exclusively concerned with ensuring a degree of transparency in financial systems. The system of corporate law is a spillover system concerned with monitoring the transparency of contracts in the greater system of commerce. When systemic transparency abounds in primary systems (e.g., the financial system), the spillover systems (e.g., auditing and/or law) connected to those systems will suffer.

The cost of carrying spillover systems is an added loss incurred by primary systems when participants to primary systems are non-transparent (i.e., when a primary system consists of actors that draw small systemic boundaries around themselves). Spillover systems are more focused on maintenance and control rather than production. Primary systems are more focused on production rather than maintenance and control. Hence, the larger system consisting of all primary and spillover systems benefits from increased transparency in primary systems rather than increased transparency in spillover systems, mainly because increased transparency in primary systems lowers the greater system’s reliance on less productive spillover systems while

allowing resources to fuel innovation and development in primary systems. This is precisely the reason all actors, at the very minimum, have a distant incentive to act transparently towards progressively larger systems through.

## ANTECEDENTS TO TRANSPARENCY

### **The Meaning of Transparency:**

When a representation is perceived to be disclosed, clear, and accurate, interested observers will likely brand it transparent. But what does this really mean? In an effort to shed light on the mysterious matter behind a representation, the following discussion explores some of the important questions information receivers ask themselves as they engage with representations.

When individuals encounter representations made by others, they naturally ask themselves how competent or aware the information sender is about the topics being represented. They further want to know the level of subjectivity undergirding the information in the representation. There are two general reasons information receivers consider these questions. First, the information receiver would like to know if the information sender is a credible source of information. Second, the information receiver would like to know if the information sender is being forthright in disclosing all relevant information in a truthful manner.

The level of transparency in representations can be conceptualized as the matter between information receivers and the answers to these questions, which are generally held in confidence by the information sender. Information receivers are also information senders, and by thinking about this from the perspective of the information sender, an interesting conceptual model can be constructed around some of the primary antecedents to transparency.

### **Systemic Character:**

At the most fundamental level, a representation reflects information about one or more topics. For example, a phonetic representation can be considered noise, or it can be considered music.

Our a priori experience with such phonetic representations channels our opinion of what we consider noise relative to what we consider music. Our awareness of the phonetic representation is expanded beyond the simple idea of noise when we consciously or subconsciously reflect on these experiences. Those that consider the phonetic representation to embody music may relate it to a specific genre of music. Such individuals may go further by linking the genre to a broader social movement. To those that consider the phonetic representation to embody nothing more than noise, a screaming baby, a jackhammer, or a headache might come to mind; all of which conjure up separate but complementary topics to that of pure noise. Taken together, the topics of a representation become what one might define as the *epistemological context* of the representation.

Information senders may have a limited understanding of the topics within a representation, or they may have a high level of awareness about all of them. Assume for a moment that both the information sender and receiver generally agree on a given epistemological context. The level of contextual *awareness* expressed by the information sender is the next object information receivers attempt to gauge through representations. This informal appraisal of competence is the next step in establishing a degree of confidence about the credibility of the information sender.

Information receivers are generally conscious that any awareness emanating from information senders is also a subjective awareness. To lever off a previous example, what constitutes music to one may constitute noise to another. The ontological knowledge circumscribed about the mind of one is constructed from experiences shared by some, but not all (Gergen, 1982). Indeed, the very fact that this paper is written in English is an epistemological subjectivity. This is not to imply that meaning is an exclusive property. Rather, this paper simply proposes that

interpretation is a subjective act, and further, that interpretation is the basis from which awareness emerges.

The literature pertaining to intergroup dynamics has recognized the importance of subjective understanding in group formation (Tajfel, 1974; Tajfel & Turner, 1979), and it is precisely this subjectivity that drives much of the non-transparency in representations. If one accepts this proposition, then for awareness to be manifested as highly transparent requires that representations be infused with a high degree of truthfulness about the subjective position of the information sender. When information senders truthfully self-disclose any personal subjectivity and/or lack of awareness influencing the transparency of a representation, that representation will be highly transparent.

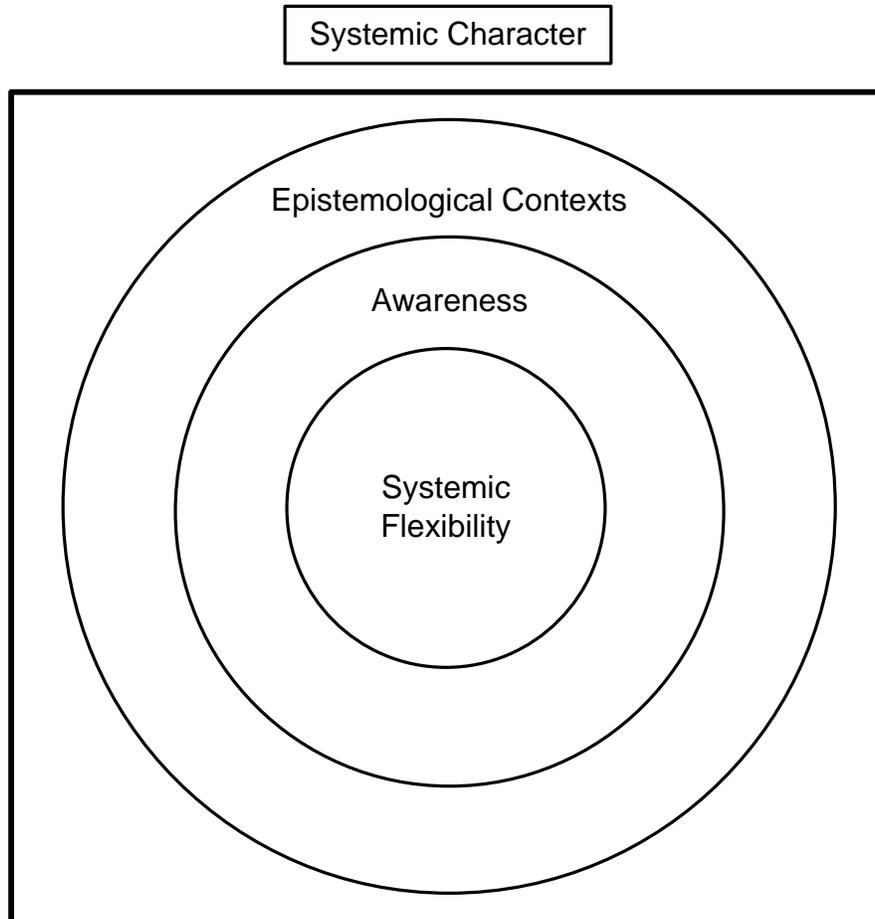
For information senders to truthfully self-disclose personal subjectivity, it is required that they have a high degree of *systemic flexibility*. Systemic flexibility is defined here as the capacity of one to remove the mind of the self from consideration when making representations. When the mind of the self is removed from consideration, it becomes easier for individuals to make representations that truthfully disclose personal subjectivity and unawareness. The broader the system boundary is from which the individual removes the mind of the self, the easier it is for the individual to self-disclose personal subjectivity and unawareness as representations touch upon topics that span a wide variety of systems.

As individuals operate in a subjective state of mind, they often appear objective to the outside world. Individuals appear objective because they want to protect their inner subjectivities. Paradoxically, acting objective often clouds acknowledgement of personal subjectivity through unauthentic representations of objective awareness. Systemic flexibility is a cognitive force that

counters the influence of guarded awareness. Systemic flexibility allows the subjectivity of the information sender to shine through. It allows personal subjectivity to be stated and accounted for. For example, the statement “this is the best hamburger in the world” reflects a low level of systemic flexibility even though the statement is objective. Alternatively, the statement “I can’t speak for the rest of you, but I really like cheese and this hamburger has lots of cheese on it compared to the hamburgers I normally eat, so I really like it” is accounting for personal subjectivity and hence, is more systemically flexible. Systemic flexibility happens when information senders qualify their perspectives as subjective appraisals of phenomena in progressively larger systems.

If personal subjectivity is dishonestly stated, the information sender is acting with a low level of systemic flexibility and the resulting representation will be non-transparent because it is inaccurate. Systemic flexibility allows information that is material, but otherwise might go undisclosed, to be disclosed. It is thus proposed that systemic flexibility allows information senders to construct representations that reflect truthful qualifications about personal subjectivities and unawareness. Figure 2 is a conceptual model of the antecedents to transparency held by information senders.

**Figure 2: Conceptual Model of Systemic Character**

**Boundary Spanning:**

The act of being systemically flexible is a function of our ability to *boundary span*. Boundary spanning is a simple concept introduced here as the ability to expand the conceptual limits imposed on the information sender beyond the immediate system in terms of both time and space. Kanter (1977) has shown how employee behavior can become parochial in organizations. When employees (in the case of Kanter, secretaries) are unable to see beyond the bounds of their own local within the organizational system, the potential for growth for those employees diminishes. Whilst Kanter (1977) deals primarily with the causes of such parochial thought, the assumption remains that organizational systems do not value parochial thinking and hence, do

not reward it with opportunities for growth and advancement. Boundary spanning is a cognitive mechanism that discourages parochial thinking.

For example, consider a job applicant that is desperately looking for employment from a particular company. Because the applicant longs for the job, the level of transparency in his resume might shift. When the system is subjectively envisaged by the applicant, it might consist of himself and his family, perhaps, as well as the necessary time he thinks it should take for him to receive the job. Boundary spanning allows the applicant to consider the broader context. What does it mean to the people at the fringes of his social system that he receives this job? What would they think of him should they know the level of transparency in his resume? What would the company think of him should it know the true level of transparency in his resume? How would receiving this job materially affect him in 30, 40, 50, 100, or 200 years? When he seriously considers such questions, the importance of maintaining transparency in the “here and now” has a way of tugging at his conscience. However, in the midst of this process it is possible that personal objectives will tug at his conscience in an entirely different direction. This tug and pull manifests itself as either systemically flexible or inflexible cognition.

It should be emphasized that boundary spanning results when a conscious attempt is made to move systemic boundaries beyond comfortable levels. In order to render existence meaningful, individuals pursue a degree of certainty by fostering systems of control and prediction (Hogg, 2000). However, individuals differ greatly in the extent to which they are motivated to structure their environments (Neuberg & Newsom, 1993). This means that some actors might have an easier time of boundary spanning than others at relative levels, but all individuals share a proclivity for systems of control and prediction. Conscious attempt to boundary span must be made because progressive transparency requires systemic horizons to be expanded irrespective

of one’s level of comfort with social structure and control. Ergo, the inverse is also true. Should an individual boundary span to the far reaches of social life 10,000 years from now, he will not become a vegetable unable to rationalize in the current moment because his natural tendencies are to formalize his existence through social interaction.

Personal objectives generally rest in the “here and now,” but they may also rest in the “there and then.” The more intimately and personally an objective is tied to the needs of an individual, the more difficult it becomes for that individual to boundary span. When boundary spanning allows the individual to overthrow the influence of personal objectives, it is possible to construct representations that are more transparent than what might otherwise be expected. A conceptual model of boundary spanning is presented in figure 3.

**Figure 3: Conceptual Model of Boundary Spanning**

		<b>Time</b>	
		Inpatient	Patient
<b>Space</b>	Indifferent	The “ <b>Here and Now</b> ” Promotes Systemic Inflexibility	The “ <b>Here and Then</b> ” Promotes Limited Systemic Flexibility
	Empathetic	The “ <b>There and Now</b> ” Promotes Limited Systemic Flexibility	The “ <b>There and Then</b> ” Promotes Systemic Flexibility

At the very core of boundary spanning, one is required to be *patient* and *empathetic*. Patience is needed to allow the long term benefits and costs of representations made today to be considered. Empathy is needed to ensure serious consideration is given to the way representations might influence individuals operating in distal systems that might be touched by those representations.

Urie Bronfenbrenner's work on nested ecological structures is employed here to examine the concept of boundary spanning in more depth. Bronfenbrenner (1979) identifies four systemic levels of social interaction. First, the immediate setting to which the individual participates is termed the microsystem. Second, the interaction between various settings to which the individual actively participates (e.g., family, work, and social life) are termed the mesosystem. Third, the settings to which the individual does not actively participate but which influence his or her being and development are termed the exosystem (e.g., a spouse's workplace). Finally, the consistencies in lower-order systems (i.e., micro-, meso-, exo-) that reflect existing or potential patterns of ideology and culture are termed the macrosystem.

In effect, what boundary spanning promotes is a conscious engagement with all four systemic levels. Bronfenbrenner (1979) defines this as a part of the process of human development, where individuals develop a more differentiated conception of the ecological environment over time. Lewin (1943) recognizes that both the past and the future are elements of the psychological field individuals engage in the present. Boundary spanning is proposed to encourage empathetic and patient systemic flexibility in the present psychological field. Hence, it is possible to view boundary spanning as a growth exercise in human development. It should be noted that boundary spanning is not the act of engaging with the microsystem and the macrosystem or the microsystem and the mesosystem only. For information to be considered transparent, all four levels must be conceptually engaged.

The movement one experiences within the boundary spanning model can be defined as cognitive *ductility*, *elasticity*, and *plasticity*. In mechanical engineering, ductility refers to the ability of material to be deformed. Here, ductility is defined as one's ability to move about the boundary spanning model prior to making a representation. Those that are ductile have the capacity to be

systemically flexible or inflexible about a given epistemological context. Plasticity and elasticity refer to two primary typological movements that emerge from one's boundary spanning ductility. Plasticity refers to an individual's cognitive ability to shape or form into a given area of the boundary spanning model. Elasticity refers to a temporary change in position that inevitably reverts back to the original position. An individual must possess a minimal capacity to boundary span for plasticity or elasticity to exist. Hence, plasticity and elasticity require a degree of ductility. The relative level of plasticity or elasticity one has when moving about the model will result in varied levels of representational transparency.

Plastic individuals remain fixed across a stream of representations in either a subjective or objective state of mind. A fixed subjective state of mind will likely produce less transparent representations. For example, consider Bernie Madoff and his now infamous ponzi scheme. Arguably the only time he acted in a flexible manner towards the financial services system was after he was arrested. A flexible state of mind, on the other hand, will likely produce a more transparent stream of related representations. Individuals behind systemically objective representations might receive a higher degree of trust from the system over time because the system values the objective appraisal of one's subjectivity and unawareness. Because these individuals are plastic rather than simply ductile, they are open to adopting new perspectives. When new perspectives are adopted, however, plastic individuals will vehemently defend them until a more compelling reason to adjust surfaces.

Elastic individuals jump erratically from patience to impatience and from empathy to indifference within and between related representations, but they remain generally committed to one area of the boundary spanning model over time. It is possible that the most cunning

individuals, as well as the most exceptionally foolish, are those that are consciously or subconsciously elastic.

When individuals have low levels of ductility, they construct representations that are based on one area of the model with little consideration to other areas. Highly ductile individuals are able to consider each area of the boundary spanning model and position themselves as either subjective or objective in their representations on a contingent basis. When ductile individuals overwhelmingly prefer one area of the model but tend to consider other areas of the model prior to making representations, they are elastic. When ductile individuals generally consider only one part of the model prior to making a representation, they are plastic.

### **Building Systemic Character and Managing It through Transparency Strategy:**

Representations reflect a given level of systemic flexibility regardless of how conscious information senders are of their inherent level of flexibility. This paper argues that conscious or subconscious applications of systemic character are governed by the *transparency strategy* of individuals. Transparency strategy is defined here as the approach taken by information senders to reach a specific communicative end. It is possible that transparency strategy manifests itself as responses to stimuli (e.g., a question asked by a friend) when the subconscious disposition of one's systemic character at that particular moment in time is triggered. A further argument can thus be made that the more aware one is of his or her systemic disposition, the more he or she can make a conscious attempt to boundary span and hence, construct representations of transparency.

The tools that allow individuals to *consciously* boundary span stem from research relating to such areas as Emotional Intelligence (EI). Some people are naturally gifted at moving from the

“here and now” to the “there and then.” This ability to boundary span may be a conscious or subconscious act. It is possible that the more emotionally intelligent a person is, the more his or her boundary spanning is moved from the unconscious to the conscious realm. EI research has uncovered a number of competencies that outline this phenomenon. These competencies include self-awareness, self-management, social awareness, and relationship management (Goleman, 1998; Goleman, Boyatzis, & McKee, 2002). Because self-management and relationship management are consciously or subconsciously enacted by individuals in either a subjective or objective state of mind regardless of the level of awareness one has of their influence, the benefits and costs derived from increasing his or her level of EI are less a product of becoming more aware per se, and more a product of how the individual applies his or her newly acquired conscious awareness of self. Hence, the EI competencies of self awareness and social awareness promote conscious awareness of systemic flexibility, and the EI competencies of self-management and relationship-management are more about the strategic application of such awareness. The idea of impression management offered by Goffman (1959) is a relative to the notion of applied EI discussed here.

Moving out one ring in the model of systemic character, information senders are also able to change their level of awareness about a given topic by learning about that topic. The learning that occurs at the systemic flexibility level is introspective, and the learning that occurs at the awareness level is extrospective. The learning that occurs when one visits a foreign culture, for example, will likely increase both the awareness and the systemic flexibility of the individual (i.e., it builds systemic character). Learning is a way for information senders to increase the perceived level of competence undergirding a representation.

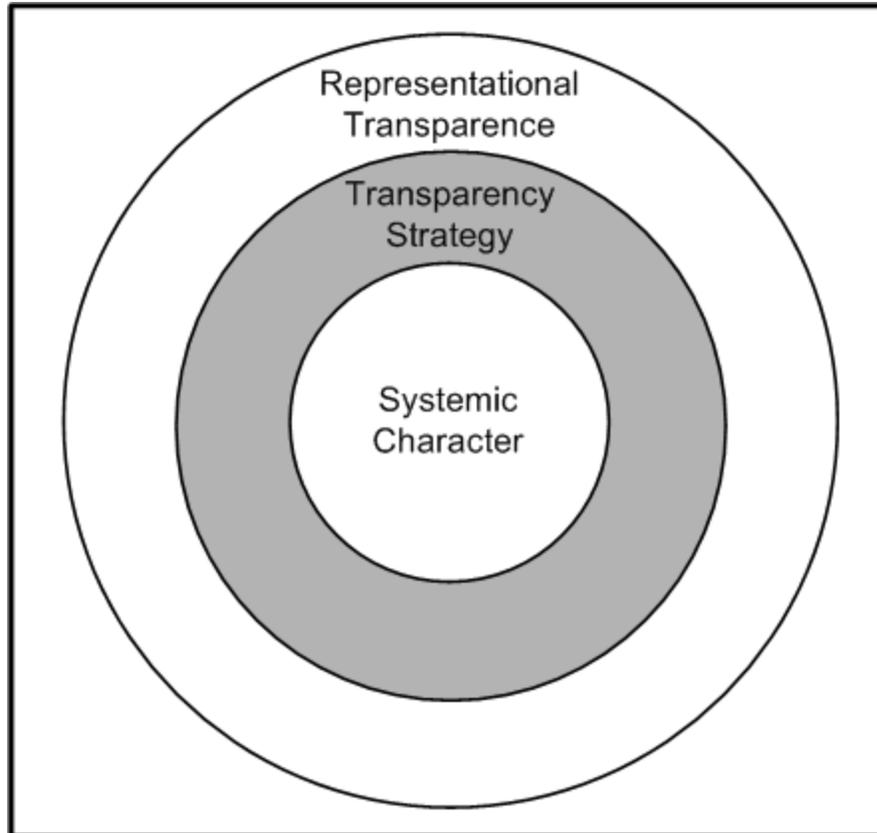
Finally, information senders can mold representations in ways that may sway transparency by innovatively infusing the epistemological context of the representation with various topics. This requires a design attitude (Boland and Collopy, 2004). A design attitude focuses on questioning the basic assumption underpinning our cognition. It is contrasted with a decision attitude, in which the epistemological context of a representation follows the normal or “rational” assumptions linking one topic to the next. To some degree, we all maintain a design attitude. The extent to which it is utilized over a decision attitude influences both the topics within the epistemological context of a representation as well as the emergent level of transparency within that representation.

Stepping back for a moment to the example of the job applicant mentioned above, it is important to note that such a highly objective individual may not actually get the job. For example, should the applicant remove a false statement from his resume that states he lead an initiative to generate \$2 million dollars of extra revenue for his former employer, he subsequently gives up the competitive advantage generated by non-transparency in favor of the competitive disadvantage of transparency (i.e., he draws a larger systemic boundary around himself and his representation). The competition referred to here is between the applicant and other applicants. It is equally important to realize that the applicant is now acting with a higher degree of systemic character. By knowing that the individual did not generate \$2 million dollars of extra revenue for his former employer, the company can move to hire another person perceivably more qualified to do the job, and the organizational system as a whole will likely benefit.

**Summary of the Antecedents to Transparency:**

The following summarizes how systemic character is manifested as relative levels of representational transparency: The relationship between personal objectives and boundary spanning, which results in either systemically inflexible or flexible behavior, yields a level of behavioral congruence *with the system* which, coupled with the level of awareness one has about an epistemological context, forms a representation reflecting a degree of transparency. It is likely that the level of one's systemic character will vary depending on the epistemological context of the representation. It is also possible that the cognitive processes that monitor systemic character across related epistemological contexts are more fixed. Information receivers build an understanding of the systemic character of an information sender by interpreting the level of transparency in their representations over time. As the following model infers, the transparency strategy employed by the information sender moderates the relationship between systemic character and representational transparency (Figure 4).

**Figure 4: Conceptual Model of the Antecedents Leading to Transparent Representations**



## **DISCUSSION**

The following discussion outlines a number of interesting areas relating to transparency that should be explored. First the social benefits of transparency are discussed. Next, the relationship between: transparency and economic bubbles, transparency and strategy, transparency and technology, and transparency and economic development are discussed.

### **The Social Benefits of Transparency:**

When actors engage with systems under assumptions of quid pro quo, a theory of social contracts emerges (Locke & Laslett, 1988; Rousseau, 1968) and true transparency becomes unattainable. In other words, without actors that boundary span, systems will be governed by social contracts that require spillover systems to manage transparency in primary systems. Individuals give up

certain rights in exchange for social safety and a degree of social predictability when social contracts are established. In effect, accepting a theory of social contracts acknowledges that non-transparency is as valid a social norm as transparency. The need for social contracts is lowered in systems consisting of actors with high levels of systemic character because systemic flexibility (i.e., empathy and patience) promotes emotive states of understanding and forgiveness between actors.

It is important to recognize that some might debate the general desirability of honesty in systems. E.O. Wilson has stated that “Complete honesty is not the answer . . . frankness would destroy the delicate fabric of social life that has built up in human populations beyond the immediate clan” (Wilson, 2000: 553). This is a valid view that touches on the basic ontological reasons systems have increasingly relied upon social contracts. The more a social contract is explicitly outlined, the less tolerant the system will be of deviant behavior and the less confident the system will be that overarching honesty will manifest itself organically from individual actors.

When honesty does exist, however, systems confront the option of being less reliant on explicit social contracts as actors take responsibility for their mistakes. Unfortunately, what is missing from this equation is the ability of actors to forgive each other. In general, honesty is all about the self and what the self perceives. Actors are not required to define the systems to which representations are being made under conditions of pure honesty. Because of this, representations may be honest but reflect low levels of systemic flexibility. Without a conscious attempt towards systemic flexibility, actors will rarely agree to pursue goals that benefit the greater system and hence, the ability to forgive is stifled. Under such conditions the positive effect of honesty on social interaction (i.e., a lower reliance on explicit social contracts) will be unsustainable. To this effect, Wilson is quite right, honesty is not the answer.

Transparency, on the other hand, results as higher levels of systemic flexibility are reached. In more transparent systems, social contracts simply consist of general parameters to coordinate value dispersion. For this to be sustainable, systems must reflect an inbred flexibility that allows mistakes to be made, responsibility to be taken, and above all, forgiveness to be given. Such flexibility exists in the individual actors that propagate a high degree of systemic flexibility which, by definition, is empathetic and patient. Hence, transparency is the answer to an overreliance on social contracts if all actors share a similar perception of systemic boundaries. Simply stated, the delicate fabric of social life can grow stronger, in the long run, when patient, empathetic authenticity abounds.

### **Transparency and Economic Bubbles:**

There are a number of interesting insights that emerge from this analysis of transparency when one considers it against the materialization of economic bubbles. First, it is clear that vague representations necessarily avoid being studied for their inherent level of latent transparency (i.e., their inherent level of clarity, disclosure, and *accuracy*). Hence, it is possible that individuals behind representations lacking measurable assertions of fact and laden with opinions might consciously or subconsciously elude accountability. Further, when the level of information asymmetry between actors is great, it is possible that opinions camouflaged as measurable assertions of fact will be accepted more readily by less knowledgeable information receivers. Indeed, an explicit representation that is high in manifest transparency but makes false assertions of fact may be so convincing that its inherent level of latent transparency is seldom questioned. Stated another way, systems consisting of representations with high levels of manifest transparency but low levels of latent transparency may promote the emergence of disruptive economic bubbles, or vice versa. Such a scenario may be the result of a systemic black-boxing of

non-transparent representations gone unchallenged because of the perceived high levels of manifest transparency within them.

### **Transparency and Strategy:**

How does transparency strategy relate to transparency? One possible answer stems from the perspective that information senders leverage their systemic character to achieve objectives given the perceived systemic character of various information receivers. Hence, the ductility, elasticity, and plasticity of the systemic character of both the information sender and receiver might be material factors to consider when investigating transparency strategy. Prior to making representations, most authors consider the speculative or explicit questions posed by real or imaginary interpreters. To some degree, representations reflect the strategic objectives of authors given the speculative or explicit questions posed by real or imaginary interpreters. Thus, strategy can be seen to channel the level of transparency in representations. There is much to be done to elucidate the relationship between strategy and representational transparency.

A discussion of strategy and transparency also flows neatly into the topic of entropy in information theory. When outcomes based on communication are equally likely to occur (i.e., outcomes are random), entropy is at its highest (Shannon, 2001). Successfully aligning clarity with accuracy and disclosure in various purposive ways might allow the information sender to “skew” entropy to lower or higher levels.

### **Transparency and Technology:**

The expanding use of information technology is an important topic to consider as part of this discussion. Society’s increasing reliance on sophisticated data storage devices raises at least two strategic considerations for information senders: The greater care that must be given to design

formerly routine representations in an effort to avoid embedding information that may be misconstrued by a wider spectrum of audiences, and the notion that information senders must be able to account for a larger amount of embedded information over a longer period of time.

### **“Developing” and “Developed” Economies:**

Established economies are often considered to be “developed.” For developing economies to establish a system that allows global investment to fuel its primary systems, it must establish a degree of transparency around those systems. Hence, developing economies often seek the knowledge of how developed economies have managed to quell the non-transparency in their primary systems by mimicking the practices of their aforementioned spillover systems. When developing economies buy this knowledge, it does not mean that the original spillover system from the developed economy then becomes a primary system in that economy. Rather, it simply means that the function of the spillover system in the host economy is adopted by other primary systems that would otherwise not need the services of the spillover system if those primary systems would have exhibited more transparency in the first place. There is much to be done to further understand the relationship between systemic transparency and macroeconomics.

## **SUMMARY**

This paper argues that transparency be defined as the level of information disclosure, clarity and accuracy in representations. Transparency can be measured along two primary levels: manifest (i.e., information clarity and disclosure) and latent (i.e., information clarity, disclosure and accuracy). Within systems, transparency is envisaged to exist naturally when actors share goals. When actors do not share goals, transparency is envisaged to exist only when actors are able to boundary span beyond personal objectives. In either case, transparency is perceived to be a

manifestation of the systemic character of individual entities. One's systemic character is determined by his or her level of awareness of the epistemological context of a representation, as well as his or her level of systemic flexibility. Transparency strategy is identified as the link between the systemic character of information senders and the level of transparency in their representations. Finally, this paper argues that information receivers gauge the systemic character of information senders through the level of transparency in their representations over time.

### **LIMITATIONS**

The transparency model outlined in this study is by no means complete. First, there are a number of problems envioning the proper operationalization of disclosure, accuracy and clarity. Depending on the representation under study, it might be difficult to measure the three dimensions of transparency. Second, the model assumes speculative or explicit questions are properly understood by designers of representations. Third, and quite possibly most importantly, it is difficult to gauge the level of systemic character influencing qualified representations that are grossly mistaken because such mistakes might simply be mistakes or they might be dishonestly constructed. Either case implies the information sender holds a very different level of systemic character (i.e., low in awareness or low in systemic flexibility).

Finally, it may be difficult to analyze representations of transparence experimentally because material representations are often nonmanipulable in real-time situations. This makes it difficult to extrapolate the exact causal relationship between transparency and various output measures because counterfactual inference will be hard to establish (Cook, Shadish, & Campbell, 2002).

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