The limits of transparency : a systems theory view

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Abstract: The paper explores the implications of Ludwig von Bertalanffy's general systems theory for the current debates on the nature of organizational transparency as an element of good governance. If transparency implies the exchange of information, then it may be taken, at a metaphorical level, to constitute a dimension of metabolism theorized by Bertalanffy's open systems model. Yet, the model likewise lays bare some of the limits of transparency idea. Bertalanffy's work on the nature of emergent properties, his critique of the stimulus-response scheme, and his perspectivistic account of the systemic perception of the environment all point in the direction of the impossibility of full transparency. Later systems-theoretic work on operational closure and self-referentiality has reinforced and even radicalized these insights which are shown to resonate with some of the key arguments in the contemporary economics, sociology of knowledge, and business ethics.

Keywords: transparency, information, knowledge, operational closure, corporate social responsibility

INTRODUCTION

The imperative of transparency is high on the agenda of governance in politics, business, and civil society. Transparency is a widely shared but vague term broadly referring to information disclosure as a key to better governance. It is widely seen to be a precondition for democratic accountability of all sorts of powerful actors; especially in the business world, transparency is a basic medium through which corporations may credibly show their commitment to consumer rights, labour ethics or sustainable development. Boosted by both digital technology and corporate scandals, the calls for transparency indicate the demand for information and insight by stakeholders who may thereby become empowered and involved in governance (cf. Christensen and Cheney, 2015; Ward, 2017). While the benefits of transparency are straightforward and widely documented (cf. Florini, 2007; Fung, Graham, Weil, 2007), it is not without serious downsides. Critical voices note that, at a conceptual level, transparency can be never complete. It can involve biases, such as those of quantitative measurability, and a dysfunctional moralistic rhetoric (Van Assche et al., 2014). Other scholars point out that making organizations transparent requires time, work, and money; it implies the development and institutionalization of 'transparency-making' devices which bring about some visibility, calculability and comparability (cf. Grossman, Luque & Muniesa, 2008; Verschraegen, 2015). Consequently, 'transparency' provisions often seem to result in more centralized control of official information than before, in spite of the protest rhetoric of 'openness' (e.g. Vifell & Thedvall, 2012). Perhaps most importantly, the transparency imperative downplays the productive effects of opacity, such as the degrees of

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freedom required to uphold practices that are proactive and pioneering, whether in terms of professional competence or moral responsibility (cf. Christensen and Schoeneborn, 2017).

This sort of controversial debate is probably not unique to transparency. Hielscher et al. (2014) discern a similar ambivalence in the debate on corporate democracy which is adamantly embraced by some scholars (e.g., Scherer et al., 2006) but skeptically seen by others (e.g., Jensen, 2002). To navigate and make sense of the debate, Hielscher et al. (2014, p. 533) distinguish between two meanings of democracy which can accordingly signify a principle of participation and "a principle of legitimation that draws on consent". This distinction makes clear not only that democracy as participation is a means for democracy as legitimation, but also that too much participation may occasionally defeat the goal of legitimation. It is conceivable that a similar reasoning is applicable to transparency. As a principle of legitimation, it could mean democratic accountability which is hard to argue with; but in practical terms, transparency often means participation and information provision, which may even eventually undermine the goal of democratic accountability if the practical outcomes of transparency efforts are a centralized control of information or a weakening of corporate economic sustainability.

Following Hielscher et al.'s (2014) fine conceptualization of corporate democracy, the present paper seeks to develop a similarly balanced conceptual analysis of organizational transparency. Thus, whereas the modern systems-theoretic scholarship differentiates between different types of social systems such as interactions, organizations, function systems, and the encompassing societal system (Luhmann, 1995), the present paper's primary focus is on organizations. One obvious reason for this focus is that it is chiefly in reference to organizations that transparency has attracted so much attention as an element of good governance. Another reason is that the present paper's strategy, differently from Hielscher et al. (2014), will be to draw inspiration from Ludwig von Bertalanffy's work on metabolism as a basic attribute of open systems. Organizations have traditionally been thought of as open systems (Scott, 2003; Katz and Kahn, 1978) which maintain a metabolic relation to their environment. While metabolism can occur on many dimensions, the phenomenon of transparency can be subsumed in an image of informational metabolism, i.e., the informational exchange between an organization and its stakeholders. Even if the vision of transparency is just a metaphor, it is probably a good one, for transparency is needed for the purposes of organizational legitimacy, which is a precondition for the continuous flow of resources and for securing the sustained support of the organization's constituencies (Scherer et al. 2011, p. 262). "The continuous flow of resources" is in turn an apt image of metabolism. As Bertalanffy (1968, p. 39) put it, an open system "maintains itself in a continuous inflow and outflow, a building up and breaking down of components, never being, so long as it is alive, in a state of chemical and thermodynamic equilibrium but maintained in a so-called steady state which is distinct from the latter".

If transparency is seen as a part of informational metabolism, then it still needs to be explained why it can become dysfunctional, especially in view of the constitutive significance of metabolism for the sustenance of open systems. This question is addressed by the modern systems-theoretic developments which seek to integrate the ideas of systemic openness and closure. While earlier cybernetics was still based on input-output models – which implies a certain openness of systems – second-order systems theory replaces the input-output model with feedback loops in which systems use their own output as input, so to say, and thereby achieve operational closure. While stressing the operationally closed

nature of social systems, Luhmann, however, also indicates that operational closure enables systems to become cognitively 'open' for its environment. "Cognition is only possible *because* it has no access to the reality external to it. A brain, for instance, can only produce information because it is coded indifferently in regard to its environment, i.e., it operates enclosed within the recursive network of its own operations (Luhmann, 2011, 242). d Luhmann (2012, p. 34) therefore concluded that "the insight offered by the theory of open systems that independence and dependence can increase with and through one another remains intact. The wording merely changes: we now say that all openness is based on the closure of the system". Seeking to synthesize the ideas of Luhmann and Bertalanffy, Valentinov (2014) argued that social systems generally exhibit two systems-theoretic identities, open and closed, which may be discordant with each other. It is this discordance that provides the key to understanding the possible dysfunctions of transparency. In order to make that argument, the paper proceeds through the following steps. The next section gleans the elements of Bertalanffy's own implicit understanding of systemic transparency and opacity. In the following section, these elements are fed into a systems-theoretic analysis of these concepts informed by the search for a synthesis of the ideas of openness and closure. The subsequent sections discuss implications of the argument for economics, sociology of knowledge, and business ethics.

INSIGHTS FROM LUDWIG VON BERTALANFFY

The relationship between von Bertalanffy's ground-breaking work on the general systems theory and the modern idea of transparency defies an easy description. In one sense, an ambition of the general systems theory is to restore scientific transparency where previously there was none. Consider, for example, the problem of the irreducibility of life to classical physics which could be considered as a paragon of the successful analytical science in the Renaissance. This problem led some biologists, such as Driesch, "to embrace vitalism, i.e., the doctrine that vital phenomena are inexplicable in terms of natural science" (Bertalanffy, 1968, p. 40). Vitalism embodies and legitimates the very lack of transparency that eventually made metaphysics untenable. Another prominent metaphysical notion which all but transparent if judged by the standards of modern science is teleology which "appeared to be outside the scope of science and to be the playground of mysterious, supernatural or anthropomorphic agencies" (ibid, p. 45; cf. Rosenblueth et al., 1943). Bertalanffy's elaboration of the implications of organized complexity maintained in open systems kept some of the essential intuitions behind the idea of teleology while discarding the metaphysical ballast. Thus, the theory of the steady state provides a more transparent account of life than vitalism, just as the differential equations utilized by Bertalanffy provide a much more transparent explanation of goal-seeking than an Aristotelian image of entelechy.

All this does not mean, however, that the Bertalanffyian general systems theory renders open systems fully transparent. Bertalanffy (e.g., 1968, p. 55) fully appreciated that open systems exhibit emergent characteristics which are irreducible to the characteristics of their elements. According to a modern authoritative source, these characteristics "arise from and depend on some more basic phenomena yet are simultaneously autonomous from that base'' (Bedau and Humphreys, 2008, p. 1), just as the phenomenon of life relates to the individual organic molecules of which the living organisms are composed. There is a sense in which emergence exemplifies an opaque intra-systemic causality not immediately

accessible, or transparent, to outside observers. Furthermore, in discussing the psychological applications of the general systems theory, Bertalanffy (1968, p. 189) criticized the "stimulus-response scheme" which would explain animal and human behavior in terms of "response to stimuli coming from outside". Such an explanation would indeed render behavior transparent, but this sort of transparency would clearly go against the grain of systems thinking as Bertalanffy saw it.

The chief problem with the "stimulus-response scheme" is that it "leaves out the large part of behavior which is expression of spontaneous activities such as play, exploratory behavior and any form of creativity" (Bertalanffy, 1968, p. 191). Moreover, in a 1937 book, Bertalanffy (1937, p. 133ff.) argued that "even without external stimuli, the organism is not a passive but an intrinsically active system. Reflex theory has presupposed that the primary element of behavior is response to external stimuli. In contrast, recent research shows with increasing clarity that autonomous activity of the nervous system, resting in the system itself, is to be considered primary… The stimulus (i.e., a change in external conditions) does not cause a process in an otherwise inert system: it only modifies processes in an autonomously active system" (cited in Bertalanffy, 1968, p. 209). On reflection, the emphasis on autonomous activity which is triggered rather than caused is a clear, if indirect, indication of the intra-systemic opacity which makes it impossible for outside observers to predict future systemic behaviors (e.g. Von Foerster, 1984). In effect, Bertalanffy is here close to conceptualizing operational and self-referential closure which became the keystone of later systems theorists such Von Foerster (1981; 1984), Maturana and Varela (e.g., 1992) and Luhmann (e.g., 2012).

Bertalanffy explores the transparency theme also from the other direction. It is not only that open systems may appear opaque to external observers, but also the outer environment may not be fully transparent to the open systems. Presciently anticipating the constructivist stance of the later systems-theoretic developments, not least those by Maturana and Varela and Luhmann, Bertalanffy (1968, p. 226) took up "the Whorfian hypothesis" and conjectured that "the categories of our thinking… are dependent on biological and cultural factors". He traced the idea of the biological relativity of categories to the work of Jacob von Uexküll who argued that the boundaries of the environment of a living organisms are determined by the organism's "psychophysical organization, i.e., the structure of receptor and effector organs" (ibid, p. 227-8), while taking the categories of human perception to be additionally influenced by linguistic and cultural determinants. Bertalanffy's view on human sensemaking resonates with more recent insights that when people use cultural categories and schemes to make sense of their thoughts and actions, these categories are ''situationally cued'' to produce particular actions, grounding cultural schema activation in the "cues available in the environment" (Di Maggio, 1997: 274). More generallyy, if the perception categories of open systems are relative in this way, then the nature of the outer environment cannot be taken to be transparent for the systems. This lack of transparency, however, does not mean that the perception categories are "completely 'wrong', fortuitous and arbitrary. Rather they must, in a certain way and to a certain extent, correspond to reality" (ibid, p. 239), since it is this correspondence that allows living organisms, human and non-human, to orient themselves in the environment. This correspondence cannot be assumed to be perfect though: a point that has drawn attention much in the later systems-theoretic developments discussed in the following section.

TOWARD A MODERN SYSTEMS THEORY VIEWPOINT

The later systems-theoretic developments, especially the theorizing of autopoiesis and operational closure by the likes of Maturana and Varela (1992) and Luhmann (1995; 2012), envisioned a more radical version of opacity in the system-environment relations. Luhmann took these relations to be essentially precarious, not least because of the fact that the complexity-reducing function of social systems leads the latter to disregard major chunks of environmental complexity. In fact, operational closure implies that systems develop "freedom and the autonomy of self-regulation by indifference to [their] environment" (Luhmann, 1995, p. 183). In other words, in order for a system to reproduce itself, it must process environmental complexity not as direct input but as a perturbation catalyzing internal change. Although the environment can perturb living, psychic and social systems, it cannot operationally in-form them. System's observations of their environment are always internally constructed. And as systems are always observing their environment through systemic constraints, the observations will invariably be contingent and imperfect in view of endemic "blind spots". Second-order observation can pay attention to these blind spots, but has blind spots of its own, such that the environment remains essentially opaque to the systems. Whereas Bertalanffy was relatively optimistic about the correspondence of the systemic "perception categories" to the texture of the environment, the Luhmannian take on the precariousness of system-environment relations is thus considerably more pessimistic.

Some commentators went so far as to single out the precariousness of system-environment relations as the touchstone of the distinct Luhmannian approach to systems theory. In this vein, Valentinov (2014) operationalizes this precariousness by postulating a potential trade-off between the intra-systemic complexity and the sustainability of the concerned system in its environment. The trade-off results from the interplay of two principles implicit in the Luhmannian vision of system-environment precariousness: the complexity reduction principle, according to which "systems increase their complexity by becoming increasingly insensitive to the complexity of the environment", and the critical dependence principle, which assumes "that the increasing complexity of systems is associated with their growing dependence on environmental complexity in ways that make the continuation of their autopoiesis increasingly unlikely" (ibid, p. 18). The potential trade-off between complexity and sustainability "emerges because the growing systemic complexity entails the increasing risk that systems develop insensitivity to those environmental conditions on which they critically depend" (ibid, p. 14). Or, as Luhmann (2012, p. 76) himself put it, "through operational closure, systems produce their own degrees of freedom, which they exploit as long as possible; in other words, as long as the environment tolerates it", with the overall effect of operational closure being "not adaptation but greater deviation". Thus, the trade-off between complexity and sustainability assumes the environment to be dangerously opaque for the systems which accordingly run a high risk of overstraining the environment's carrying capacity.

The opacity of the environment is nowhere as acutely felt as in the communication among systems. This is logical to the extent that transparency generally becomes a concern only to observers who are outside a domain they would like to look inside. The vast bulk of economic activity, for instance, is never subjected to demands for more transparency. In the everyday world of the firm or factory, workers go about their business without feeling

constrained by closed doors. And in the absence of specific reporting requirements, they do not feel the need to account to outsiders for their routine activities. Pressures for disclosure only arise when their products or services are used outside the firm by consumers, or start impacting on public health or environment. Yet, informing the outside world about what goes within corporations is never easy or straightforward. In reference to the context of corporate communication, Christensen and Schoeneborn (2017, p. 356) warn of the simplifications implied in the characterization of transparency as a linear provision of information from the sender to the receiver. Instead, the authors note that the corporate senders carefully filter and select the information that may turn out not only to be overly complex and biased, but also irrelevant to the needs of receivers-stakeholders. One could perhaps add a further complicating circumstance: the content of messages issued by the corporate senders is possibly loosely coupled to the reality that these messages purport to describe. As discerned by Jauernig and Valentinov (forthcoming), corporate messages could in principle broadly correspond to corporate reality, as stakeholder theorists tend to assume (Eccles et al., 2014; Freeman et al., 2017); but they can also lag behind reality, as suggested the work on organizational hypocrisy (e.g., Brunsson, 2007; Cho et al., 2015) or stay ahead of reality if they present "aspirational talk" (Christensen et al., 2013). In view of these difficulties, one may wonder whether corporate communication, or systemic communication more generally, could at all be a reliable instrument for the control of "critical dependencies" problematized by Valentinov's (2014) complexity-sustainability trade-off. If this communication presents "cheap talk" instead of being a reliable instrument, the concerned social systems may employ indirect signaling strategies, such as "credible commitments" in Williamson's (1996) transaction cost economics or "the nondistribution constraint" as a signal of trustworthiness in Hansmann's (1980) theory of the nonprofit sector (cf. Jauernig and Valentinov, forthcoming). These signals are crude but effective, and evidently prioritized over direct communication due to its failure to dissolve the opacity and thus precariousness of the respective system-environment relations.

Whereas the complexity-sustainability trade-off treats opacity as a risk for systemic sustainability, the context of the organizational life suggests a more nuanced picture where opacity may play a productive role. Both sociological institutionalists and business ethics scholars have long known that formal organizations are faced with multifarious expectations on the part of diverse stakeholders (Meyer and Rowan, 1977; Bromley and Powell, 2012; Carroll and Buchholtz, 2009). While meeting these expectations is a prerequisite for organizational legitimacy, many of them are conflicting and mutually incompatible. This is why Meyer and Rowan (1977) introduced the idea of decoupling, i.e., the disconnect between policy and practice, that helps organizations avoid internal disruptions that would be inevitably caused by the attempts to fulfill conflicting requirements at the same time.

In the more recent literature, this decoupling is discussed under the rubric of organizational hypocrisy (e.g., Brunsson, 2007), which, if made public, might create the atmosphere of frustration, skepticism, and distrust (e.g., Egels-Zandén, 2014). Whatever justification there is for the use of decoupling strategies and organizational hypocrisy, it translates well into the context of transparency and opacity. The upshot is that too much transparency may inflict damage on organizations by making them conflicted and vulnerable. In Luhmann's parlance, organizations and social systems more generally, need "degrees of freedom" to develop their internal complexity. It seems clear that considerable transparency of the system faced by the precarious, if not hostile, environment, would barely cater to that need. Allowing for the degrees of freedom seems to be the chief productive effect of opacity. As Christensen

and Schoeneborn (2017, p. 365) put it, a certain opacity makes it unnecessary for organizations "to hold back on their ambitions" in achieving both excellence and responsibility. Thus the complexity-sustainability trade-off may cut both ways: it is not only that the excess of intra-systemic complexity could undermine systemic sustainability, but also that the excessive sustainability orientation might suppress the productive opacity and the required degrees of freedom.

An even more basic contribution of the complexity-sustainability trade-off to understanding the challenges of transparency is in pointing out the likely discrepancy between the operational closure of the interdependent social systems and the informational metabolism implicit in the idea of transparency. Consider the classic systems-theoretic characterization of systems as black boxes. In a seminal paper, Ranulph Glanville (1982) established that an observer's understanding of a black box makes the box white in such a way that the emerging white box exhibits greater stability than that of the original black box. This stability rests on the improved information exchange between the original black box and the observer. In the functional differentiation context, for example, the improved information exchange may be an essential part of the self-referential closure of social systems which are thereby emancipated from the moral regulation or other external steering that could exist in the stratified society. Poul Kjaer (2010, 2016), for instance, points out how contemporary governance regimes are oriented towards upholding functional differentiation and ensuring that the perspectives emerging from different societal spheres (environment, health, economy, etc.) are in concordance, albeit not normative concordance but concordance based on an increased observability of each other's intentions, actions and concerns. Luhmann (1986) holds a slightly more skeptical view of the whitening possibilities of black boxes. He pointed out the inherent tension between the observing system's understanding of the observed system and the observing system's self-understanding, while making clear that the very notion of understanding pertains to the observation of how the observed system processes its self-reference (ibid).

Let's consider observers to be stakeholders who observe the corporation which thus presents the observed system. As noted above, from the corporate point of view, opacity has productive effects which would be sacrificed if, in Glanville's (1982) terms, the stakeholders and the corporation begin to jointly constitute a white box which, in line with Glanville's argument, may come to exhibit superior stability (or, in modern parlance, sustainability) attributes. Yet, in the modern turbulent and complex business world, the emergence of such white boxes cannot be taken to be probable. In this line, Victoria von Groddeck (2011) argued that corporations resort to value communication as a strategy to deal with highly fuzzy and uncertain environments. Evidently, this sort of communication by definition cannot provide much guidance or transparency to the observing stakeholders, such that Glanville's (1982) white box relationship can hardly get off the ground. Luhmann's (1986) skeptical remarks on the nature of understanding likewise appear to be highly pertinent. If stakeholders "understand", in the Luhmannian sense, corporate value communication, they will see it as a self-reference handling strategy, i.e., as a strategy for meeting the corporate goals, rather than as a genuine attempt to create transparency. This understanding will make stakeholders skeptical rather than more informed, and this indeed seems to be chief problem of what is known today as the CSR communication.

AN ECONOMIC PERSPECTIVE

Broadly speaking, the present-day economic science entertains a relationship to transparency that is no less conflicted than that of the modern systems-theoretic developments. There is a sense in which the general equilibrium theory and the attendant assumption of perfect knowledge present the conceptual core of the modern mainstream economics. This assumption implies full transparency of the market situation to market actors and has long been acknowledged as utterly unrealistic. As Brian Loasby (1976) argued decades ago, if this assumption were valid, then economic action becomes deterministic and genuine choice would be annihilated. If this assumption is not valid, then it merely provides a smokescreen for the lack of understanding, or pervasive opacity, regarding the role of what economists call "exogenous variables", including tastes, technologies, and institutions. A whole new subdiscipline of "economics of information" traces its lineage to the early acknowledgments of the necessity to drop the perfect knowledge assumption, thereby embracing opacity as the central feature of economic life (cf. Milgrom and Roberts, 1992).

A prominent formal institution occupying center in both economic reality and economic theory is that of the for-profit firm which, from the institutional economics perspective, presents a governance structure functionally equivalent to the market (cf. Williamson, 1996). Whereas the neoclassical theory treats the firm as a fairly transparent production function straightforwardly transforming inputs into outputs, there exists a host of approaches explaining the firm in terms of its ability to deal with opacity, i.e., the lack of perfect or even merely requisite information. An early classic by Frank Knight (1921) imagined the firm as an institutional form of the entrepreneur's specialization in the bearing of uncertainty which captures an important aspect of opacity. The subsequent literature on the contract-based explanations of the nature of the firm emphasized the firm's advantages in minimizing the diverse costs of procuring and processing information, while the so-called competence-based explanations draw attention to the firm's ability to organize collective learning processes which remain inherently opaque to, and hence non-imitable by, external actors (cf. Hodgson, 2015).

An economic institution which is no less prominent than the firm is that of the market. Even though the general equilibrium theory purports to explain the functioning of the market based on the assumption of perfect knowledge (i.e., full transparency), dropping this assumption opens up a number of alternative explanations of how markets work. A seminal explanation of this sort stems from Friedrich von Hayek who, as an ardent advocate of market liberalism, was appalled at the conclusion that the assumption of perfect knowledge effectively cancelled, at least at a theoretical level, any superiority of capitalism over socialism (Caldwell, 1988). Hayek interpreted the market process as a spontaneous order that is able to harness each actor's tacit, local, and dispersed knowledge which is deeply opaque to all other actors. As a result, market process enables the coordination of individual mutually discrepant plans. Ideological debates aside, Hayek established a novel argument suggesting that the pieces of knowledge that seem opaque to most individuals might be productively and peacefully employed by markets, or for that matter, social systems more generally. So it comes about that "man's actions are largely successful, not merely in the primitive stage but perhaps even more so in civilization, because they are adapted both to the particular facts which he knows and to a great many other facts he does not and cannot know. And this adaptation to the general circumstances that surround him is brought about by his observance of rules which he has not designed and often does not even know explicitly, although he is able to honour them in action" (Hayek, 2013, p. 12).

A logical consequence of Hayek's vision of the market is the irrelevance of the neoclassical notion of market failure. If the market process utilizes tacit and dispersed knowledge that is given to nobody in its entirety, nobody can judge whether the market process has failed in doing so. Accordingly Hayek explained that the maximization of efficiency makes sense for organizations and households that have a clear hierarchy of ends, but not for the market process as a whole, for it does not have such a hierarchy. Roth (2018, p. 127) likewise sees markets as "forms of communication that systematically transcend the ambitions and influence of the individual market participants". If markets are defined in this way, then "market failures" emerge as specific observations that reflect the problems of the observers themselves rather than those of the observed markets. A proper therapy for a market failure may thus be an observational shift rather than an attempt to intervene into the market process.

Finally, a discussion of transparency in the context of economics would be incomplete without a reference to the problem of methodological individualism which still remains a widely celebrated article of faith in the mainstream economics circles. The well-intentioned advocacy of methodological individualism purports to establish scientific transparency by tracing economic phenomena back to the behavior of individuals. This explanatory strategy clearly presents a type of analytic reductionism whose inadequacy provided Bertalanffy with a key justification for the general systems theory. Geoffrey Hodgson (2007) argued however that this transparency is more specious than real. If methodological individualism means explaining social phenomena in terms of individuals alone, it fails because such explanations have never been achieved; if it refers to explanations in terms of individuals and relations between them, then the term "individualism" is misleading (ibid). Either way, it is clear that the principle of methodological individualism and the Bertalanffyian general systems theory remain at loggerheads with each other, and that the pursuit of scientific transparency ought not to occur at the cost of downplaying the role of the emergent social structures, relations, and processes.

A SOCIOLOGY OF KNOWLEDGE PERSPECTIVE

The issue of organizational transparency can also be viewed from the perspective of a sociology of knowledge. What is remarkable in this respect, is that the quest for transparency makes citizens and customers highly dependent on knowledge experts and intermediaries. Although more information is produced and made available to the general public than ever before, citizens and consumers need expert advice to sort out and prioritize this avalanche of (mostly quantitative) information. Yet, most audiences lack the resources and expertise necessary to judge the details of systematic reporting, let alone how this refers to an underlying reality. Let's take the example of corporate financial reporting, where the chances of non-experts deciphering and recognizing the underlying reality behind the indicators are slimmer than ever before. "In recent years, corporate reports have not only become more voluminous and comprehensive, they also demand the involvement of an increasing number of different expert groups. Consequently, fewer audiences are able to check the validity of claims being made in the reports." (Christensen & Cornelissen, 2014, p. 143).

This knowledge asymmetry between insiders (e.g. financial officers in a firm, doctors in a hospital) and outsiders (e.g. the media, a public regulator) is, however, not peculiar to the

disclosure of corporate financial information, but can be generalized when it comes to making modern, professionalized organizations more transparent.

> "Just like the experience of driving through a place cannot be captured by reading a map, there is bound to be a knowledge gap separating those participating in an expert system from those observing it. A practitioner and an observer do not normally share the same form of life and, thus, neither do they draw the same distinctions nor do they attach the same meanings to what their statements refer to. In other words, an expert system cannot be made fully transparent for all to see its workings; there is no detached Olympian highground from which it may be inspected. Transparency inevitably presupposes a subject: transparent to who? If this question is raised, one realizes that what the outsiders see (and the significance they attach to what they see) is not the same with what the insiders see (and the significance they attach to their experiences)." (Tsoukas, 1997, p. 834).

In contrast to what the transparency discourse claims, this knowledge asymmetry cannot simply be removed with more information, for information needs to be interpreted. A complex medical practice such as surgically operating on a patient, cannot be fully understood or accounted for through a set of externalist criteria and indicators. On the contrary, making more information on an expert system publicly available "entails that more opportunities for conflicting interpretations are created, and so it is less likely for trust to be achieved. This happens because, as argued earlier, the decontextualized nature of information requires that it be placed into a context in order to be made intelligible. Since, however, the context of the observer is different from the context of the practitioner, it is most likely that different, even conflicting, interpretations will be offered. To put it differently, the paradox is that the more information on the inner workings of an expert system observers seek to have, the less they will be inclined to trust its practitioners; the less practitioners are trusted, the less likely it is for the benefits of specialized expertise to be realized" (Tsoukas, 1997, p. 835).

The paradox identified by Tsoukas (1997) may however be less characteristic of organizations which can participate in several function systems and thus can develop expertise in the types of professional knowledge that the function systems process. Roth et al. (2017, p. 195) argue that functional differentiation multiplies horizons of organizational decision-making, thereby making organizations smarter and more flexible (cf. Roth et al, 2018). Will et al. (2018) show that organizations develop "multifunctional profiles" that are supposed to correspond to their dependencies on specific function systems. Yet, by developing management strategies and tools for navigating the terrain of functional differentiation, organizations enhance the complexity of processes they utilize for handling their self-reference. Luhmann's (1986) conjecture is that the increase of this complexity makes these organizations less understandable to outside stakeholders, since the very idea of understanding pertains to the observation of the systemic self-reference handling strategy. Thus, whereas organizations themselves can avoid Tsoukas' (1997) paradox, they pass the paradox further on to their stakeholders.

A BUSINESS ETHICS PERSPECTIVE

Lastly, the issue of transparency has long become an integral part of the contemporary business ethics scholarship. In a popular textbook, Crane and Matten (2010, p. 71) define transparency as "the degree to which corporate decisions, policies, activities and impacts are acknowledged and made visible to relevant stakeholders". Admitting that "transparency is certainly no panacea for restoring public trust", Crane and Matten (ibid) nevertheless conclude that "increased attention to issues of transparency might no longer be just an option for many corporations". In broad agreement with this view, Carroll and Buchholtz (2009, p. 337) point out that "the opposite of transparency is opacity, i.e., an opaque condition in which activities and practices remain obscure or hidden from outside scrutiny and review". It is certainly true that transparency may present an effective means of enforcing the democratic accountability of corporations. Still, the systems-theoretic vantage point of both Bertalanffy and later thinkers is alert to the possibility of the dysfunctional consequences of too much transparency. These consequences, too, have moral significance that it would be wrong to ignore.

Consider, for example, Milton Friedman's classic but highly controversial *Capitalism and Freedom*, in which he interpreted for-profit firms as "intermediaries between individuals in their capacities as suppliers of service and as purchasers of goods" (Friedman, 1982, p. 20). This intermediary function decouples the production activities from the primordial needs that would be characteristic of self-provisioning households that would not rely on the social division of labor. The decoupling from these primordial needs, in turn, makes clear that for-profit firms may realize an in(de)finite range of win-win interactions with diverse stakeholders. Moreover, being rightly known as a vocal skeptic of corporate social responsibility, Friedman nevertheless conceded that "it may well be in the long-run interest of a corporation that is a major employer in a small community to devote resources to providing amenities to that community or to improving its government. That may make it easier to attract desirable employees, it may reduce the wage bill or lessen losses from pilferage and sabotage or have other worthwhile effects" (Friedman, 1970).

Yet, by urging that "the social responsibility of business is to increase its profits", Friedman (1970) argued for the unconditional primacy of the interests of stockholders, and thus for the moral necessity of ensuring full transparency of corporate life to them. Friedman's ideas have been attacked on many fronts, but of primary interest here is the issue of transparency. Given the all too human condition of bounded rationality, it seems an open question whether stockholders could actually develop a proper overview and understanding of the diverse win-win interactions that corporations could entertain with a broad range of stakeholders. Developing this understanding would require preconditions that cannot be guaranteed. As a result, many win-win possibilities may remain unused. In the systems-theoretic terminology used above, the moral upshot here is that enforcing full transparency to stockholders entails the risk that corporations lose the degrees of freedom required to realize the emerging win-win potentials whose existence Friedman was ready to concede.

Conversely, the importance of degrees of freedom appears to be acknowledged in alternative business ethics approaches that are much more affirmative of corporate social responsibility. Consider Archie Carroll's (1991) seminal pyramid of corporate social responsibility distinguishing between economic, legal, ethical, and philanthropic types of responsibility. Economic and legal responsibilities are relatively straightforward; they indicate that corporations must be profitable and obey the law. The ethical responsibilities of corporations "embody those standards, norms, or expectations that reflect a concern for

what consumers, employees, shareholders, and the community regard as fair, just, or in keeping with the respect or protection of stakeholders' moral rights" (ibid, p. 41), while philanthropic responsibilities refer to "those corporate actions that are in response to society's expectation that businesses be good corporate citizens" (ibid, p. 42). A moment's reflection will reveal a key difference between the former two and the latter two types of responsibility with regard to transparency. Obviously, corporations must make it transparent that their actions are profitable and legal. In contrast, corporate decision-making related to ethical and philanthropic responsibilities involves judgment, sensitivity, and moral effort that go beyond the somewhat crude requirement of transparency. This decision-making can hardly get off the ground without a dose of the degrees of freedom that create a sort of "protected enclave" in which corporate managers develop moral ambitions and identify the ways of their realization. For the ethical and philanthropic responsibilities, these ways are anything but given; they require moral decisions which, in turn, can hardly benefit from the setting of full transparency.

TOWARDS CONCLUSIONS: BERTALANFFY, LUHMANN AND THE DIVERSE FACES AND LIMITS OF TRANSPARENCY

These diverse perspectives on and aspects of transparency, reinterpreted through the lens of systems theory combining insights from Bertalanffy and Luhmann, produce key insights in transparency. It always has limits and drawbacks, and it is always constructed within a particular perspective of system and environment. A choice for one understanding and one organization of transparency makes alternative understandings and forms of organization and institutionalization difficult. Furthermore, other aspects of transparency/opacity are the correlate of cognitive and organizational choices regarding other concepts: notions of morality, of the individual, of freedom, regarding the delineation of scientific knowledge, etc, have implications for the balance transparency/opacity. Then, there are limits to transparency, uses of opacity and performances of transparency pertaining to the use of strategy by decision- makers.

From our previous observations, we can derive distinctions between cognitive and organizational transparency, and between purposive and non- purposive transparency. Systems theory in the line of LvB shows and explains why all these forms are at play at the same time. We can further distinguish between transparency of self and environment, where environmental complexity and autopoietic systems in the environment limit transparency, and where the observing system is never completely transparent to itself. Appeals to reflexivity in governance, in organizations, have obvious appeal and utility, yet hit the wall of an autopoiesis which can never be fully comprehended from within. Hence the importance of second order observation, as noted above.

Drawing on Glanville's (1982) seminal work on the black box concept, we further identified a form of opacity not often identified in the literature, I.e. the opacity stemming from emergence, from systems producing new features, or new systems, transcending the features and reproductive logic of the grounding system. LvB is clear here, in the sense that for him, neither looking forward nor looking backward is possible in processes of emergence; before and after are different worlds, which cannot be causally connected. New forms of causality emerge. We can add, following the same reasoning *transformational opacity,* where radical transformations of organizations, governance systems, or other systems,

produce a similar effect of a double opacity: a not fully understood reshuffling of a maybe carefully designed balance between transparency and opacity, and a new opacity in the evolution of the organization or system, into the past, hence a diminished explanation of certain current mechanisms.

Building on this emerging typology of transparency and opacity, we can highlight the possibility of certain of organizations, and of governance systems, to *enhance transparency in their environment.* This can never achieve perfect results, and as noted above, systems theory has strong explanations for these imperfections, but in current discourses on transparency (and derivates such as accountability) these attempts take central place. Good governance is not just supposed to be transparent governance but also governance increasing transparency in the environment. Accounting firms, law firms, police organizations, NGOs, academic organizations, can all be employed to that effect. Of course, the existing transparency and opacities these systems engage, in self and environment, of the different types just delineated, will influence these attempts to enhance transparency. The examples also indicate that 'enhancing' transparency is always managing transparency, and, as in the case of accounting firms, performing transparency.

The accounting firm example reiterates the importance of the system/environment boundary, of the perspective coming with that, the interest, the different sets of transparencies and opacities (cognitive and otherwise), the different need for change and performance of change, of transparency, for each perspective, each side of the boundary. And LvB and Luhmann showed us *there is always a boundary.* Taking the transparency discourses at face value, thus carries the risk, as pointed at earlier, of erasing the benefits of differentiation, of reducing space for strategy, of reducing complexity of losing the ability to manage the couplings between systems (we refer to our observations on de- coupling).

The ethical injunction to complete transparency therefore has to be analyzed as what it is, a discourse representing a non- systemic understanding of the universe, moreover a discourse which ignores a meta-injunction in many ethical perspectives, I.e.that an ethical decision follows from *judgement,* not simple procedures, and that judgment requires space to exercise it. The 'island' mentioned before, an island shielded by systems boundaries, and intentionally by internal procedures, an island of ethical judgment, and other forms of judgment (if we are dealing with organizations and other social systems), that island has to *manage transparency and opacity,* and that management includes a component of shielding against absolute injunctions for transparency. And allowing for the forms of decoupling mentioned above.

We know now that this is the case because it helps to maintain system boundaries and rationalities, because absolute transparency does not exist, because it always has an angle and an interest, because cognitive and organizational transparency are linked, because reflexivity has boundaries which will be fiercely tested under demands for increased transparency, because of transaction costs, and because of the tight restriction on strategy imposed by it, including the strategy to maintain different domains and forms of communication, and the possibility to change identity. It also means that the functioning of the system will be disrupted because informalities are suddenly suspicious.

We believe our systems- inspired investigations into functions and limits of transparency can help to save the benefits of transparency in particular situation, and, e.g. by means of the derived typology of transparencies and opacities, come to a more nuanced analysis of that

situation, of the current patterns and uses of transparency/opacity, of new demands placed on the systems, and of possible implications of shifting the balances of opacity and transparency. Our systemic and typological approach can thus, it is hoped, help to prevent new forms of oppression by a transparency whose selective and perspectival character is not recognized. This does not just apply to the Foucaultian panopticon which reduces people to a shrivelled and easily redefined identity, it applies to any system observed by others.

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