Ten Systems:
Toward a Canon of Function Systems

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There is no description of modernity without functional differentiation. The distinction of function systems such as economy, science, art, or religion, is a key to modernity. Modern science, however, applies and implies rather than studies functional differentiation without providing exact definitions of function systems or investigating how many of these systems actually exist. The present article addresses these two issues focusing on the second. Test criteria for the distinction between function systems and systems other than function systems are developed and used to decide whether family, love, morality, culture, social work, and some more, actually are function systems. Subsequently, the article presents a list of 10 function systems and their corresponding media, codes, and programs. A final section suggests that a disciplined approach to functional differentiation opens up a horizon for interfunctional comparative social research.

Keywords: Functional differentiation; function system; social systems; form theory; Niklas Luhmann; modernity; interfunctional comparative social research.

1. Trends and Functional Differentiation

There is no self-description of modern society without at least implicit reference to functional differentiation. The distinction of autopoietic function systems such as the political system, economy, science, art, or religion, is therefore explicitly regarded as a key concept of modernity (Leydesdorff, 2002; Berger, 2003; Vanderstraeten, 2005; Brier, 2006; Kjaer, 2010; Bergthaller & Schinko, 2011; Jönhill, 2012; Schirmer & Hamadek, 2007; Schoeneborn et al., 2014; Roth, 2015a). Due to functional differentiation, modern man talks business, avoids politics or religion in leisurely conversation, considers the buying or selling of political or legal decisions as corruption, and, more often than not, tends to associate the imposition of religious imperatives upon scientific knowledge with a revival of the age of the Holy Inquisition.

Large parts of the world population take functional differentiation into account on an everyday basis and recognizably arrange their lives around it. Despite this, the function system science has not included the forms and functions of functional differentiation among its major research topics. It is fair to say that, so far, science performs not nearly as convincingly at studying the process of functional differentiation than as at presenting itself as one example of functional differentiation, in view of some unknown observer. In order to gauge the collateral damages of the current lack of inter-function system research, one only has to look at the countless

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attempts of defining contemporary society as a totality lumped together under the paramount dominion of one or the other chosen function system. In this vein, contemporary society has been described as *economized* (Urry, 2010; Lash, 2007; Alexander, 1985; Blumler & Kavanagh, 1999; Wallerstein, 2004; Habermas & McCarthy, 1985; Altvater & Mahnkopf, 1996; Chomsky, 1999; Polanyi, 1957; Smart, 2003; Çalışkan & Callon, 2009; 2010), *politicized* (Chomsky, 1997; 2000; Thompson, 2006; Blumler & Kavanagh, 1999), *juridified* (Pfeil, 2011), *mediatized* (Eaman, 1987; Castells, 1996; Mazzoleni, 2008; Hjarvard, 2008), and sometimes even *aestheticized* (Blumler & Kavanagh, 1999). While many of these premature overall-diagnoses contain specific cutting-edge observations, answers to the basic questions: (1) What is a function system?, and (2) How many function systems exist?, are only notable by their absence.

Of these two questions, we here try to answer the first, while looking in detail at the second. Modern societies have tended to produce functional self-descriptions, emphasizing the overwhelming, master-in-the-house role—the tyranny, perhaps —attributed to one single function system. Politicization, economization, mediatization, aestheticization, juridification, even secularization, are all cast after this model. All of them feature however one identical bias in the way the time dimension is articulated to thing and social dimension. Falling prey to a structure-distorting short-termism they identify *–isations/izations* or *–fications*, that is to say *trends*, basically processes of continuous growth, which poses the question of the degree to which it sacrifices, on the altar of perceptible change, part of the theoretical gains achieved by introducing functional differentiation and function systems.[3]

The observation of those –isations, –izations and –ifications makes most sense where a particular function is observed against the importance of *all* function systems, which in turn is why it is critical to properly define, and delimit, the dimensions and the horizons of functional differentiation, its scales and scopes. To this, our answer is to establish a canon of function systems. The main objective of this "canonization" is to make clear what is a function system and what, not. To this end, we compile an interim listing of function systems, starting from a sample of checklists and catalogues of function systems as offered in the literature. We then discuss strategies of distinguishing function systems from other types of social systems and develop our *distinction directrice* from a theory-of-forms (Spencer Brown, 1979) guided reading of Niklas Luhmann's distinction of observer's perspectives (Luhmann & Barrett, 2013, p. 96). To consolidate the canon of function systems, we finally discuss whether family, love, morality, culture, social work, sport, and a small number of further candidates, qualify for admission into the circle of function systems.

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3.   Trends can be observed individually or in context. For instance, it is increasingly supposed that contemporary society is subject to increasing economization. In turn, an observation like this can be observed as true or not, or as self-fulfilling (even if it is meant to be self-defeating) or not. The economization thesis leaves ultimately open whether a society is predominantly economized. Nothing prevents the political system, religion, etc., from being functionally indispensable even where we encounter a clear emerging relative increase of the importance of the economy.

2. The Inflation of Function Systems

Trying to establish a limited catalogue of function systems (Luhmann & Barrett, 2013, p. 747), we react against the recently observed inflation of function systems in social systems theory (Henkel, 2010, pp. 184ff). Secondly, by suggesting that function system should constitute an exhaustive list, we want to counter-act the trend to an almost arbitrary ennoblement of this or that system by dubbing it a function system. Systems theory needs to recognize and carefully avoid hyper-old-European temptations such as the idea of function systems as constituting some elective aristocracy, some deep society behind society. The danger, however, had been there from the start: Niklas Luhmann, author of a series of monographs devoted to function systems, refers to them by saying: "Society remains the same but appears as different depending upon the functional subsystem (politics, economy, science, mass media, education, religion, art, *and so on*) that describes it" (Luhmann, 1995b, p. 48; emphasis added).[4] The innocent words *and so on* function as the symptomatic indicators of an attitude overwhelmingly displayed by supporters as well as critics of social systems theory and the concept of functional differentiation.[5] If not perceived and corrected, as in Luhmann it is, this attitude would ultimately result in defining the concept of society as ancillary to that of function. Thus, we read that "society as a whole … can be further differentiated into various functional subsystems such as the political system, economic system, legal system, *and so on*" (Schoeneborn, 2011, p. 670; emphasis added); we read that "the social system becomes further differentiated into various subsystems, discourses, and codes (such as between an economy, scientific discourses, health care systems, *etc.*)" (Leydesdorff, 2003, p. 281; emphasis added); we find that the mention of "the legal system, the economic system, the system of education, the system of art", is regularly preceded by a "*for example*" (Seidl, 2005, p. 407; emphasis added). Strangest of all, even Luhmann's critics are not immune against the *for-example*" When they venture to "reject Luhmann's central empirical argument that modern society is built through walled-off, separate, functional systems", they refer to "*e.g.*, economy, science, law, even art" (Fontdevila, Opazo, & White, 2011, p. 178; emphasis added).[6]

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4. Those of the list of candidates for system function rank that are close to the end, or next to the final words: *and so on*, are always already contaminated with a minus sign. In itself irrelevant, this indicates—in light of Luhmann's overall suggestion of subtracting the concept of modern society from the notion of *structural order* and placing it instead under the heading of mere *structural coupling*—nonetheless the presence of a deep-seated problem. While Luhmann, twenty to fifty years ago has offered a notion of function systems, and claimed the possibility of accounting for modern society on the base of nothing more order-providing than social *Ausdifferenzierung*, today, unsurprisingly, perhaps these same concepts or suggestions—in the meantime transformed into integrated and expectable devices of the everyday routines of distinction- and decision-making—give rise to the (mis-)interpretation as an offer of superior ordering/steering potential.

5. Everything looks as if the notion that there exist among function systems identifiable specimens and non-identifiable specimens were so powerfully (if unobservedly) rooted in the very concept of function systems, that something essential would be lacking from the grasp on society they are offering, would they not bridge both a limited, oligopolistic circle of some few named permanent members, and the wider or open dimension of a nameless, perhaps public, purely potential, variable, occasional, contingent population.

The existence of a comprehensive or exhaustive list of function systems is, on the other hand, also a much-disputed one. Even their purpose is disputed (Stichweh, 2001, pp. 30f). Looking at the existing research for what comes closest to a comprehensive list, one is confronted with a co-existence of different lists. Among the most popular of those are the "wall charts of the function systems" compiled by Walter Reese-Schäfer (1999, pp. 176f). They come in two different versions. The author lists 14 function systems: politics, economy, science, art, religion, law, the medical system, education, mass media, love, morality, social movements, ethics and the psychic system, with particularly this last item on the list, psychic systems, generating some degree of surprise, if not perplexity. Eight years later (Reese-Schäfer, 2007, p. 118), social movements have disappeared. Yet, even if his suggestions have set standards, Reese-Schäfer is by no means alone to have signed what was intended as an exhaustive wall-chart. As early as the late 1980s, Jan Künzler had already presented similar lists in his student days (Künzler, 1987, 1989). They comprised of science, economy, family/intimate relationships, politics, the legal system, and religion—with art being, however, explicitly excluded. Rudolf Stichweh (2004, p.3; 2005, p. 163) compiled a lists of at least twelve function systems: politics, economy, science, art, religion, law, health, education, and mass media are now complemented with family/ intimate relationships, sport, and tourism. Niels Andersen and Anders Born (2008, p. 334) list the economic system, the judicial system, the political system, the educational system, the health system, the system of love, the care system, and the scientific system. Detlef Krause (2005, p. 44) counts religion, law, education, politics, economy, science, the mass media, and art among the function systems. In further reducing this list, Hans-Georg Moeller (2012, p. 29) as well as Ali Asker Guenduez and Kuno Schedler (2014, pp. 61f) refer to only five systems: law, economy, politics, science, and religion.

Overall, incomplete lists are the rule, lists claiming completeness the exception. The vast majority of authors, whether interested in one or a limited number of function systems, or in functional differentiation in general, are content with alluding to or implying a knowledge of an inexistent comprehensive list of function systems. The point being precisely these authors refer to some function systems, a short list, more often than to others. Sometimes or alternatively, they isolate some core areas of society, to which Anna Henkel counts politics, economy, culture, law, education, religion, medicine, and family (Henkel, 2010, p. 183). Except for culture (probably meant to refer to creative activity or art) and family, Henkel's proposition is largely in line with what Niklas Luhmann considered the hardcore of the most important

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6. This, needless to insist, does not mean that, as soon as one refers to the concept of a function system, one is bound to mention all function systems; in any case, that which we are referring to is a separate dynamics, an *eigenlife* of meaning that is generated by the articulation between named and unnamed function systems, especially where the overlap between the ones and the others is given the value of a surplus. The unnamed function systems referred to by the words *and so on* represent a default position, an "out there," in opposition to the consensus-based oligopoly of the short and exclusive list of core function systems. Looking closely enough, one perceives that the class of the unnamed are there to define a consensus about the named central or core function systems.

function systems of society (Luhmann, 1989, p. 36; Luhmann & Barrett, 2012, p. xi). The political system, economy, science, art, religion, law, medicine, education, and mass media occupy the central ground of undisputed function systems. The remaining ones, notably family, love, morality, culture, and sport, however, must be considered contested or peripheral candidates. In response to diverse initiatives of launching the co-optation of further candidates over the past years, the present article will also exemplarily review the function system status of social work (Baecker, 1994), civil society (Reichel, 2012), sexuality (Lewandowski, 2004), and sartorial communication (Bohn, 2004).[7]

3. The Test Terms and Conditions of Functional Differentiation

In the following, we take up the questions of (1) how function systems can be recognized, and (2) whether any, and if so which, of an extensive list of function system candidates, including family, love, morality, culture, social work, sport, the civil society, sexuality, and sartorial communication, qualify for function system status.

Following in the footsteps of a long line of systems theorists, we suggest to count among the minimum requirements for function system status the fact that an observer is able to identify a communicative system whose basic operations refer to society (Henkel, 2010). This narrows the field to communication systems (as opposed, e.g., to psychic systems, which are counted among the function systems in Reese-Schäfer's list of 1999). It means secondly that function systems cannot be subsystems of systems other than the compassing social system, society (this, in turn, excludes e.g., ethics, which—constituting a subfield of the function system science—thus does not qualify for function system status). It means thirdly that the functional perspective must be at work in the observed system rather than only in the eye of the beholder: Many a systems' operations can be observed with reference to the overall society; only few systems' operations are constituted with reference to the overall society. Definitions of function systems that move beyond these minimum requirements normally either present shorter or longer historical accounts of the evolution of social

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7. It is not our intention to suggest that these potential function systems are more plausible candidates than others. Rather, we pick and choose some exemplary candidates to demonstrate the use of our method of distinguishing between function systems and non-function systems. There are of course other potential candidates. Luhmann's idea that tourism could be a function system (Luhmann 2013, 218) has motivated a monograph (Pott, 2007) whose author, however, soon concluded that tourism is not a function system. Ethics, i.e., the science of the moral, is to be considered a subfield of science rather than an independent function system. PR has been referred to as function system (Ronneberger & Rühl, 1992), too, yet debatably so (Wehmeier & Winkler, 2013), because the observed functions of public relations are observed with regard to particular organizations and not with regard to the overall society. As to the System Pop, smartly brought into play by Markus Heidingsfelder (2012), one might doubt that it manages to break out of music as a form of art and, hence, that it constitutes a function system of its own. In a similar way we find that war (Harste, 2003) is, either an inter-segment conflict—and hence refers to a performance rather than a function lens (see Figure 1 and explanations)—or to the proverbial continuation of politics by other means, and hence is plugged into the political system.

differentiation in general and function systems in particular, or work off lists of test terms (Baecker, 1994) that allow for the distinction of function systems.

The first one of these approaches contrasts functional differentiation, as the dominant form of self-description of modern societies, with earlier forms of social differentiation (Luhmann, 1977, 1995c). The first known forms of subsystems of society were families and tribes. Early societies were therefore segmented in terms of these analytically similar and equal subsystems (see Table 1).

Table 1: Social Differentiation

		Equal	
		+	−
Similar	+	Segmentation (Families, tribes, nations, etc.)	Centralization (Civilizations, empires, etc.)
	−	Functional Differentiation (Economy, Science, Art, etc.)	Stratification (Castes, estates, classes, etc.)

Note: updated from Roth, 2014a, 2014e, 2015

During the Neolithic revolution, however, some segments turned into centers and others into peripheries. The corresponding distinction of *similar, but unequal subsystems* was soon superposed by the distinction of *dissimilar and unequal subsystems*, which is associated with the development of hierarchical social orders such as the Indian caste system or the (Western European) estates of the realm. These forms of stratification defined persons by assigning them individually into specific communities based within ranking orders themselves based upon kinship and heredity, thus allowing only for very limited social mobility (Roth, 2013). In post-medieval Europe, long-term evolutionary processes such as those initiated by apparently so diverse processes as were the availability of Gutenberg's press with its movable types, the Central-European rural exodus, but also the ennoblement of what turned out soon to be an unsustainably large share of commoners, which increasingly weakened the constitutive distinction of nobles and commoners until, finally, the entire rationale of stratification was superposed and increasingly replaced by functional differentiation. As epiphenomenon of modernization, function systems have evolved in terms of communications centered on symbolically generalized communication media such as money, power, truth, or belief. Functional differentiation has turned the former universe of stratification into a multiverse in which, we recall, "society remains the same but appears as different depending upon the functional subsystem (politics, economy, science, mass media, education, religion, art, *and so on*) that describes it" (Luhmann, 1995b, p. 48). In fact, the elements of earlier social subsystems could only belong to one subsystem (e.g., a nobleman could not have simultaneously been a commoner), while in nowadays functionally differentiated societies one and the same social event may simultaneously be economized, politicized and mediatized. At the

same time, individual function systems are incommensurable: Any path that would lead to the result that, for example, science is essentially more important than politics or religion, or economy more important than art or education, is foreclosed. In this sense, the functional differentiation of dissimilar and equal subsystems closes the gap within a 2x2 matrix of social differentiation, and is already quite solidly defined by what it is not.

A second approach to functional differentiation that has been proposed refers to the application of test terms. In Baecker (1994) there are three of those. All potential function systems are here checked for the presence or absence of a) a function, b) operational closure, and c) a binary coded communication medium. But the second point poses the problem that operational closure is a necessary condition for all forms of social systems—and effectively, some authors suggest omitting it and focusing only on the formulation of a function and a binary coding scheme (see Henkel, 2010). It is assumed, furthermore, that there are function systems without binary coded communication media and that there are binary coded communication media without a corresponding function system (Henkel, 2010; Karafillidis, 2010; Luhmann, 2000b; Luhmann, Holmes, & Larmore, 1982). Thus, the observation of a binary coded communication medium equally fails to warrant the existence of a function system.

Assuming that the observation of function systems simply refers to itself, we shall therefore choose a third strategy. Function systems must not be understood as the organic outcome of the historical sequence to which they owe their presence; even less, they are a sum of their parts; the decisive concept is that of function itself. It must be distinguished from other forms of observation. We rely here on Niklas Luhmann's distinction of observer perspectives:

> It must also be asked what possibilities there are for observing systems when subsystems form. For purely logical reasons, there are three possibilities: (1) observation of the overall system to which the subsystem belongs, (2) observation of other subsystems in the intrasocietal environment (or of other systems in the external environment), and (3) observation of the subsystem by itself (self-observation). To enable these various system references to be distinguished, I shall call observation of the overall system *function*, observation of other systems *performance*, and self-observation of a system *reflection*. (Luhmann & Barrett, 2013, p. 96)

In the language of a mathematics of form and a sociology of observers (Spencer Brown, 1979; Engstrom, 2001; Baecker, 2013), this quote translates into the following constellation of forms:
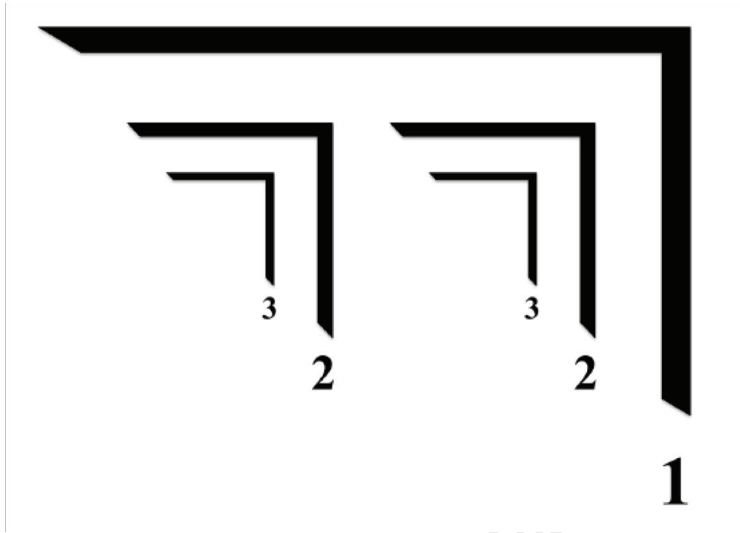
Figure 1: Three Possibilities for Observing Systems

Let 2 denote the marked state, that is, the perspective of the subsystem of reference. 1 then denotes the compassing system, the environment of level 2 systems, which is also the medium in which forms at level 2 evolve. When we now observe the relation of one of the level 2 systems to the overall system 1, we observe its *function*, whereas the contrastive observation of two or more level 2 systems refers to the term *performance*. A third view-point comes in when we look at the way in which level 2 systems use their own level 3 distinctions to refer to themselves, thus turning themselves into their own medium. This relationship is referred to as *reflection*.

If we apply this distinction of reflection, performance, and function to our context, then we can, not only properly define function systems in terms of their function to society, but also distinguish the observation of functions from performative or reflexive modes of observation. This distinction is very useful in the distinction between function systems and other systems. Now we find that, for example, law actually can be observed through all the three lenses.

> Reflexivity refers to the self-maintenance of law, performance to the contribution that law produces in relation to other partial social structures – such as economy and politics – and function to the role that the legal system fulfills in relation to the integration of society as such. (Kjaer, 2010, p. 520)

This observational flexibility, however, must not conceal the observation that what *defines* the legal system as function system is neither successful self-reflection nor the services contributed to other subsystems: it is its function *for society*, which is constitutive for even the most basic legal operations and thus for the autopoiesis of the legal system. This is why the criterion of function systems is that they distinguish themselves by their relation to society, and not by their relation to themselves or to any particular subsystems of society.

On the basis of these clarifications we now return to the question whether, beyond a generic definition of function systems, there is also such a thing as a canon of existing function systems, and if so, which canon this is.

Elder and Newer Function System Candidates

If the question is whether *families* distinguish themselves by their relationship to society, the obvious answer is: No! Families are characterized by such a degree of nonchalance vis-à-vis society that what is difficult to explain is the fact that they have been counted adamantly among the function systems (Henkel, 2010; Mayntz, 1988; Tyrell, 1979; Aderhold, 2004; Luhmann, 1990c). Let it be noted, however, that other authors have considered families as endangered species, referring to their tendency of falling prey to love, this notorious invader of families' biotopes (Burkart, 2005). If the family were a function system, then this threat of extinction would make an instructive case for the potential disappearance of function systems at large, a topic on which so far only histories of origins and persistence have been told. But is family a function system? The function of the family remains defined, for the time being, as the total inclusion of the whole of the person (Luhmann, 1990c). To the extent to which this prominent definition still appears attractive, the logic of function systems, construed rather explicitly with a view for allowing multi-inclusion, is already excluded from the field of possible options. The plural itself indicates that we cannot introduce a family as a singular system unless we abstract it from all other families in society. Persons can participate in all function systems; persons cannot be part of all families. Moreover, social functions of families can be observed even today, in an age of functional differentiation; however, what distinguishes the case of families from that of function systems is the fact that it is not the observation of these functions that makes families come about. As throughout their history—and families seem to be among the earliest forms of differentiation—they are base units of segmented societies, and it is hard to imagine that the families of society changed their fundamental mode of reproduction just because newer forms of social differentiation superposed older ones (without, notabene, replacing them). We conclude that families are self-reflective systems, not function systems (nor, incidentally, performance systems).

Family and love have in common the claim for the total inclusion of the person, which in the case of love actually is reduced—reduced to the maximum (Luhmann, 1986). In fact, love is personal communication in person. Love craves that for which modernity, in its social variety,[8] can no longer cater, no longer find space in itself: Love needs subjects and self-exposure, not geeks and mastery; seeking comprehensive exclusivity, not partial or disposable inclusion, love communicates *eigen-values*: substances, not functions (Cassirer, 1910). Love, therefore, cannot be

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8. *Social* in systems theory's conceptual sense, as in the more diffuse (and more diffused) service—or *officium*-related sense of *clerical*, *professional*, *managerial*. Clericalization and managerialization have provided, collectively and severally, the material of a compassing, if only half-way theoretical hermeneutics of meanwhile immeasurable bibliographic dimensions (Eisenstadt, 1982; Burnham, 1941).

referred to anything outside love. Any reflection about love's contribution to the moral development, about its beneficial effects to the gross national product or to society at large, is a reliable love killer, even passion killer. Love is a bad candidate for a function system.

Copiously contested, theoretically unwieldy, and far from evident in its everyday relevance remains the idea of a function system called *morality* (Neuberger, 2006). Worse than that, a tenacious rumor has it that it owes its place at least in part to the shadowy protection of the most irreparably compromised of all god-mothers: the old-European tradition. Morality has been included in some function systems lists (Schwelger, 2008; Reese-Schäfer, 1999, 2007), an inclusion that provokes much criticism (Krohn, 1999; Luhmann 2004, 2008a, 2008b).[9] We cannot give morality function system status because moral communication never operates with regard to society as a whole, but instead with reference to concrete subsystems of society which it enables to fulfill their systemic destinies like some form of police or immune-system. The perspective of this form of communication is the evaluation of other systems performances, which is performed against the background of a given system's intrinsic value(s); for instance, moral communication qualifies as an opponent of communications, whose higher amorality is otherwise held so high, such as love (Luhmann & Barrett, 2013).

Culture is casually considered as a function system (Burkart, 2005; Henkel, 2010). Dirk Baecker, maybe because he assigns to culture the function of a memory of society (Baecker, 2007), has been interpreted, or misinterpreted as a supporter of this idea (von Rosenberg, 2009). Be this as it may, Baecker (2003) does introduce culture as a universalized *tertium datur* that consequently balks at the binary logic of functional differentiation. For our purposes, culture or social memory is observed either as a feature of individual function systems (Baecker, 1987; Luhmann 1995a) in general, or as a sub-function of the mass media system in particular (Esposito, 2008); in either case as a subsystem of subsystems, and therefore clearly not a function system. Rather, it is important to note that culture relates to a semantic that indicates the difference of value and value (Baecker, 2007), a comparative semantic which, hence, operates in the mode of performances to-be-compared (Baecker, 2003, 2008). In a global society, cultures refer to subsystems of the society, not to society as a whole. Culture therefore is not a function system.

Social work (or *social aid*) has been called a function system emphatically and repeatedly (Baecker, 1994; Fuchs, 2000; Maass, 2009; Scherr, 2001). According to its advocates, social work/aid, which emerged since the early 20th century, is to be seen as a function system in which it is decided whether or not help is provided (Hafen, 1998). The addressee of this help has been presented as the damaged social address (Baecker, 1994) or as the person understood as a case. Both help/non-help and case/non-case have therefore been discussed as binary code (Fuchs & Schneider, 1995). In

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9.   The English term remains underdetermined—as long, that is, as one refuses, as we do, to speak of *the* moral. Mind that Luhmann and others refer to "*die* Moral" as he does to "*das* Recht" and "*die* Ökonomie"—a choice that epitomizes social systems theory's strategy of insisting on the function-singularizing style of observation.

terms of its function, social work is said to be about compensation for missed chances in relation to inclusion in society (Baecker, 1994), or simply in the handling of social problem cases (Luhmann, 1973). Social work is therefore observed as problem-dependent or indeed case-dependent (Maass, 2009). The word *case* points to the fact that the autopoiesis of the system is not maintained, and hence that the system is not defined by the solutions that it provides to or for detected cases; rather it is defined (in the strict sense of its borders being determined) by the detection of new cases, or indeed: determined by its capacity to help itself by means of referring to the finding of cases that require help. In this respect, the function system candidate can be compared only to the health system and its need for disease (and not for health). Social work hence creates its own means of existence in just the same way as is done in the health system, where the diagnosis first creates the disease (by endowing it with linguistic citizen-rights as disease), then assigns the suitable therapy. Furthermore, we realize that both health and social work represent systems of aid, systems specializing in modalities of what is called, in everyday lingo, helping. One way of dealing with these surprising parallelisms would be that of generalizing by taking these surprising similarities as a starting point, we may then ask as to whether or to what degree the two systems actually diverge. Is not the health system itself about help, even if it is a specific disease-triggered species of it? Can social work not be considered an extended version of the concept of disease, entitling it to deal, in addition to cases of physical need of help, to social need of help? These suspicions weigh even heavier once we recall that a similar extension of the notion of disease to psychic systems eventually resulted in the differentiation of medicine and psychotherapy. With the supplementary bonus that, if we aimed at maintaining the function system status of social work, then we could also at this point inaugurate the newly chosen function system of psychotherapy. In that case, the next question to emerge would be why we stop short of distinguishing physical, psychic, and social forms of scarcity and consequently also of differentiating the economy into three new function systems.

We opt against conceiving social work as an independent function system; this relates to a portfolio of reasons, among which that of the epistemic as well as the systems theoretic status of aid, which remains so far an open question. Decisions of the sort remain of course open to revision, yet under current conditions and in the current state of the discussion there are no convincing motives to part ways with a conservative politics of terminology that considers social work a subsystem of an health system (an enhanced health system that directs its administrative potentials toward problem cases physical, psychic, and social) and leaves questions such as whether social work actually is a subsystem of the health system, or whether, on the contrary, the medical system is a subsystem of a comprehensive aid system, provisionally unanswered. This, however, means that the terms used to describe the function, program, medium, and code of the respective system are still attuned to the health system. At any rate, for the time being, the case of the canonization of social work as an independent function system must be closed for insufficient motives. Motion defeated.

Sport is, although incorrectly in the light of the history of the Olympic games, considered as a young function system (Bette, 1999). Yet, there are hardly objections to its function system status (Schulze, 2005, 2008)—those that have been put forward can be traced, either or both to an inappropriate use of social systems theory (Werron, 2007; Bette, 2007), or to a general social systems theory resistance in the ranks of sport scientists (Seven, 2009). Apart from these minor issues, sport appears to be a function system insofar as the discussion is not about its status anymore, but rather about the naming of its code and function. What is to be reported here is a competition, meantime traditional, whether the relevant code for the function system sport is between victory/defeat (Schimank, 1988) and performance/non-performance (Stichweh, 1990). Looking at both of these proposals, we suggest changing the first—which has a political flavor and does not cover individual sport—to failure/ success while restricting the second to the system's function concept of performance communication. Furthermore, we insist that specific stress must be put on the fact that performance communication is not about competition. This not only in order to include individual sports, but also because competition, that is, performance comparison and the corresponding placements on positions in the social space, refers strictly speaking to education, not sport (see Table 2 in the subsequent section). Although the two function systems seem to be somehow intertwined, history shows that the two functions can be well-distinguished, a fact that is hinted to by the hard times sport experienced during the long period separating the decline of the Ancient and the rebirth of the modern Olympic Games. In this sense, sport is not only a candidate for function system status. It also offers an excellent case for the idea that the relevance of function systems is subject to change, and that function systems can in principle always disappear or reappear.

The claims for the function system status of *sexuality* fail in that they define desire/satisfaction as the respective code (Lewandowski, 2004). This code proposal, however, suffers from two problems. It is not subject to binary coding, and it is not sufficiently different from the common (self-) description of the economy's function as form of need satisfaction (Luhmann, 1988). Attempts to define sexuality's function as the stimulation (Lewandowski, 2004) or the absolutization of sexual desire (Lewandowski, 2008) have also yet to demonstrate how the autopoiesis of sexual communication operates, of all things, with reference to society as a whole.

Sartorial communication has been proposed as designation of an independent function system (Bohn, 2004) on account of the suggestion that clothes, outfit, can serve as dissemination media that expresses the social status of certain estates, classes, or milieus. In doing so, however, the supposed function of sartorial communication is defined, not by its function to society as a whole, but by the service it renders to certain subsystems of society. Complementary attempts to discuss clothes as forms of fashion soon make outfit enter the well-known tension zone of innovation and imitation (Esposito, 2011), which is commonly considered the domain of art.

Last, but not least, there is André Reichel's (2012) recent attempt to introduce *civil society* as a function system. This proposition reminds us of Walter Reese-

Schäfer's proposal, later withdrawn, to define *social movements* as function systems, with the reason for the withdrawal being located in the fact that it is hard to avoid references to the political system when giving examples for social movements (Reese-Schäfer, 1999, pp. 176f). In the case of civil society, the political connotation is even more evident insofar as the use of the term *civil* in itself, indicates that the lens through which society is observed is a politically focused one. A third reason to exclude civil society from the canon of function systems relates to the system's supposed function, which is assumed to be in the addressing of other function systems' blind spots "by providing joint collaborative action for the common good and social coherence" (Reichel, 2012, p. 65). First, this description is not a function description; it is rather the description of a service performed by a subsystem of society to other subsystems of society. Also, this non-function definition is full of references to the political system—a subsystem of which it can be considered.

Returning to what has already been said, we submit that neither family nor love can be considered as a function system. In their constitutive procedures, neither of the two systems can be observed as maintaining its borders with reference to society; rather, love and family pursue their respective societal campaigns with reference to themselves, indeed quite often in direct and explicit counter-distinction to any broader social (e.g., political, or politicizable) goals. Morality and culture differentiate in terms of the evaluation or comparison of subsystems of the society, and hence not with reference to society as a whole. The function system status of social work or aid must be disputed insofar as the system is more likely to be a subsystem of an enhanced health system or a generalized aid system, which focuses on physical, psychic and social problem cases and hence would have to include medicine, psychotherapy and social work. As sexuality, sartorial communication, and civil society have also failed to convince, sport remains the only one among the most recent candidates to have passed the present function system test.

4. The Ten Function Systems of Society

Due to sharing the aim of comprehensiveness, the subsequently presented canon of function systems builds on the basic structure proposed by Jan Künzler (1987, 1989) and Walter Reese-Schäfer (1999, 2007), to which it adds or applies considerable amendments and changes. (see Table 2).[10]

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10. Our table focuses on function systems rather than communication media. We have therefore attributed code, media, program, and function to the individual function systems. For reasons explained in the previous section, we deleted from Reese-Schäfer's list morality, ethics, love, and the psychic system, while adding sport. We also decided to attribute only one function per function system and chose function system designations containing the suffix *–tion*; not for any formally linguistic or aesthetic reasons, but precisely because functions happen to be shorthand expressions for transformations, and in this sense quite naturally go by the name of the suffix *-tion*. We also acted on the assumption that function systems are characterized by only one code within one medium, which, however, by no means implies that there cannot be different programs coded within one and the same medium. This explains also why, in our necessarily space-limited table, we only listed one typical program per function system.

A few remarks to introduce our table. As to the Political System, the two authors of this article disagree about maintaining the Luhmann-suggested, up to now generally accepted, however narrower (and non-binary) code of government/opposition (Hellmann, 2005)—this is the version chosen—or on the contrary replace it with a distinction that is at once more fundamental and more elementary, namely inferior/ superior (Luhmann, 2000b, p. 88). The function of the Political System is power control or the limitation of power, respectively (Luhmann, p. 74).[11]

Table 2: The Function Systems of Society

System	Code	Medium	Program*	Function
Political System	government/opposition	power	ideology	limitation
Economy	payment/non-payment	money	price	distribution
Science	true/untrue	truth	theory	verification
Art	innovative/imitative	style	fashion	creation
Religion	immanent/transcendent	faith	confession	revelation
Legal System	lawful/unlawful	norm	law	standardiza-tion
Sport	success/failure	achievement	goal	mobilization
Health System	ill/healthy	illness	diagnosis	restoration**
Education	placeable/unplaceable	vita	curriculum	formation
Mass Media	informative/non-informative	medium	topic	multiplication

Notes: updated from Roth, 2014e.
    *exemplars, not a comprehensive list
    ** In the light of some of the arguments in our debate above about a possible extension of the health system to a general aid system, restoration proves in our view a more general substitute for therapy, cure, regeneration, or recovery that can also be applied to the case(s) of social work, in which all types of help are about the restoration of a damaged social address.

The Economic code here proposed is not have/have-not, it is non-/payment. In terms of the system's function, we opted for the idea of a future-proof provision with temporary distribution situations (Luhmann, 1988).

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11. We consequently deviate from Luhmann's (1995, p. 222) proposition to consider "'collectively binding decisions' as the function of politics"; first, because decision refers to organization, which is not limited to the political system, and, second, because non-political decisions may also be collectively binding, for example, in the case of payment decisions.

The medium of Science is truth (Luhmann, 1990b; Luhmann & Behnke, 1994) rather than scientific insight or scientific publications (Stichweh, 1998), the latter of which would instead correspond to the mass media system. The key function of Science is verification.

"The function of *art* is difficult to detect" (Luhmann, 2000a, p. 143). Tautological definitions such as "the function of art … is to reproduce the difference of art" (Luhmann, p. 145) remain unsatisfactory because similar tautologies apply to all function systems. The same is true for the idea that "the function of art … is to make the world appear within the world" (Luhmann, p. 149), which furthermore is a definition quite similar to those of the worlds and realities created by the mass media system (Luhmann & Cross, 2000; e.g., pp. 103, 115). We also find it hard to support the idea that artworks are the media of Art (see e.g., Reese-Schäfer, 1999; Kraus, 2005), "because the medium of art is present in every artwork, yet it is invisible" (Luhmann, p. 118). Rather, the medium of art is style, with changing fashions deciding which stylistic forms of art are de-/coded as innovative or imitative.[12]

The Religion program has not, so far, satisfyingly been written, or indeed written about. In our opinion, the function system shape of Religion that determines the mode of presence of religion in modern society, is characterized by the fact that it is not dogmas or theologies (Hafner, 2003) but rather confessions or denominations that guide the correct application of the religious code, immanent/transcendent (Luhmann, 2013, p. 61f) in the medium of faith (Luhmann, p. 146). Non-affiliation with any denomination indicates indeed the absence of an orientation to a religious program. A non-dogmatic or non-theological denomination of the religious program furthermore facilitates the observation of godless forms of the distinction of immanent and transcendent spheres most especially outside the occident.

With regard to the code of the Legal System, we also pleaded for amendments because the often-proposed medium of justice clearly transcends the Legal System (see Luhmann, 1981). This is also true for the suggested code true/wrong (Stichweh, 1998), whereby truth refers to science. Right/wrong or, better, lawful/unlawful is closer to the function of law, which is standardization, "the stabilization of normative expectations" (Luhmann, 2004, pp. 48, 148, 153, 473).

Similarly, it can be noted that the program of the Health System or respectively of the system of medical treatment (Luhmann, 1990a), is not the Hippocratic oath (Reese-Schäfer, 2007); rather, it is the diagnosis that defines what or who is ill or not ill. The health system's medium is illness and not treatment or therapy. The restoration of damaged health, not health promotion, is the function of a system whose continued existence can only be secured by the continued detection and clustering of symptoms.[13]

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12. "Observing how the work is made yields an observation of a more general type often called 'style'. At the level of stylistic forms, the art system is able to evolve; it can replace form combinations that have already been tested or derive new forms from the rejection of what has become all too familiar" (Luhmann, 2000a, p. 122).

13. Non-/symptom also makes a promising candidate for the code of the Health System.

Sport is often not listed as a function system. As in consideration of the previous discussion, we opt for including it. We are confronted with the questions resulting from this choice. We suggest, as the medium of Sport, achievement. Achievement is measured against goals. The function of Sport is mobilization.

The function of Education is formation. Educational programs, curricula (Luhmann, 2002, p. 195), decide which forms are to be placed in the context of which forming of the educational medium. Education is about the exposition to customary forms, including forms of knowledge, forms of use, and forms. The medium of Education is no longer only the child, but the (entire) vita (Luhmann, p. 93). The code of education is un-/placeable (Luhmann, p. 59), which refers to the placement of both learning content to learners and the placement of learners to particular positions in society.

The reproduction, the multiplication or, in a word, the circulation of yet-existing communicative events is finally the function of the Mass Media System (Luhmann & Cross, 2000). In this context, topics decide what is topical or, coded, non-/informative (Luhmann & Cross, p. 17), and hence worth recording.

Our own provisional list of suggested function systems is hereby closed. The discussion is open.

5. An Outlook to Interfunctional Comparative Social Research

We started this article from the assumption that the distinction of function systems is a key principle of modern societies and distinguished a total of ten systems that can reasonably be considered as function systems of the society: the political system, economy, science, art, religion, the legal system, sport, health, education, and the mass media system. While we see traditional suspicions, such as that the argument about *Ausdifferenzierung* means "that modern society is built through walled-off, separate, functional subsystems" (Fontdevila, Opazo, & White, 2011, p. 178), slowly disappear in the back mirror, it is important to draw the attention to the systematic distinction and exploration of a set of variables that has not been given enough attention. In fact, large parts of research in social sciences and social theory today focus on sets of variables such as age, gender, race, nationality, culture, class, all of which make far more sense in respect to earlier forms of social differentiation, while turning a blind eye to what might constitute the originality of modern society. We say *might* in order to point to the possibility that the specificities of modern society in its still current form will be much easier accessible, one day, in hindsight, than they are in our days. In fact, this would be everything but a surprise; historians are used to such situations.

Luhmann's grid of function systems allows to understand the role of functions. This role is independent from the question of whether there is some inordinate growth, productivity, proliferation linked to it, or not. Non system-theoretical approaches remain almost generally under the spell of the idea that what we are witnessing, for example, between politics and economy, is a re-play of the battle of enemy empires, and targets mutual submission and/or incorporation or absorption. Accordingly, we find the greatest interest, and more often than not a highly articulate interest at that,

applied to questions such as the secularization, the politicization, the mediatization, the aestheticization, the juridification, or, doubtlessly the most popular case, the economization of society. These trend statements, while often raising highly relevant transformations, remain however at the surface. Trends need to be understood as dependent variables of functions. What is called for is a systematic reflection not only on the individual trends, but on functional differentiation and, most of all, on the presence of multiple function systems, this last point referring us to the need for a clearer idea of the difference between function systems and other social systems. In elaborating our answer, we intended to distinguish the functionalization of systems from the observation of function systems, to contradict the notion of competition, and the diagnoses of and the growth of some function systems at the expense of the survival of others, and to identify a canon of ten systems that can be observed operating along the functions of the function-system compassing overall society. For each of these ten systems, we tentatively indicate code, medium, an exemplary program, and a (one-word) definition of their function. In doing so, we relied on a reading of Niklas Luhmann's relevant monographs. Luhmann here always starts from a clearly recognizable pattern of the general concepts of form, code, medium, and program and proceeds by cutting-edge observations; some of his definitions are luckier than others, some—most especially of the medium of the particular function systems—remain vague. The most important feature concerning Luhmann is, in our view, that he observes changes in the codes or the media of some of the function systems. Art presents a shift in its code from beautiful/ugly to original/copy (there are further shifts), whereas in the case of education we are invited to observe a shift from the child to the (curriculum) vita(e) as the medium of education. The question all this poses relates to whether it is possible to observe shifts as to the medium without a corresponding shift as to the code, and whether the observation of a different code does not also imply the observation of a different function system, too.

The overall aim of our proposed canon is to facilitate the observation of functional differentiation. The clearer the focus is on functional differentiation in general rather than on particular function systems, the easier it should become to align self-descriptions of modern society with the social realities that emerge from functional differentiation. In this sense, future research might also wish to focus on, or again challenge the idea of biases to particular function systems featured by particular subsystems of society; and it is not least in this context that the measurability or verifiability issues raised in this special issue of *Cybernetics and Human Knowing* appear as critical (Roth, 2015b).

The vision behind our definition of a canon of function systems, ostensibly dogmatic in nature as it is, thus turns out to be a framework for the systematic detection, exploration, and mapping of the interfaces, interactions, and interplays of the function systems of society. In this basis, there is a likelihood that an approach to functional differentiation which strives at being more imaginative and at once more disciplined, could open up new sets of variables and a new horizon of interfunctional comparative social research.

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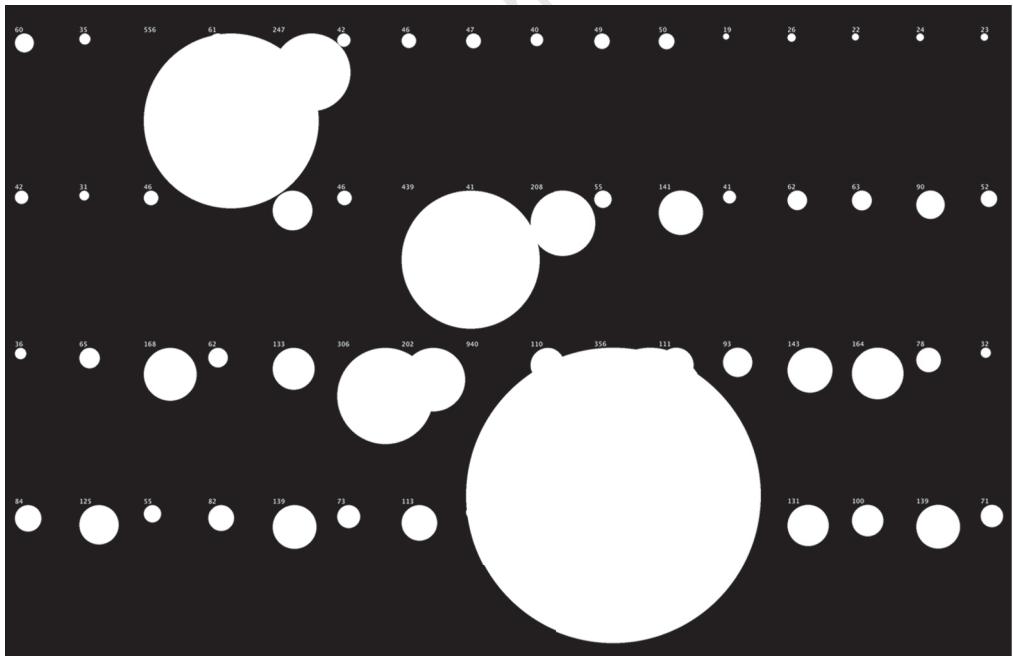
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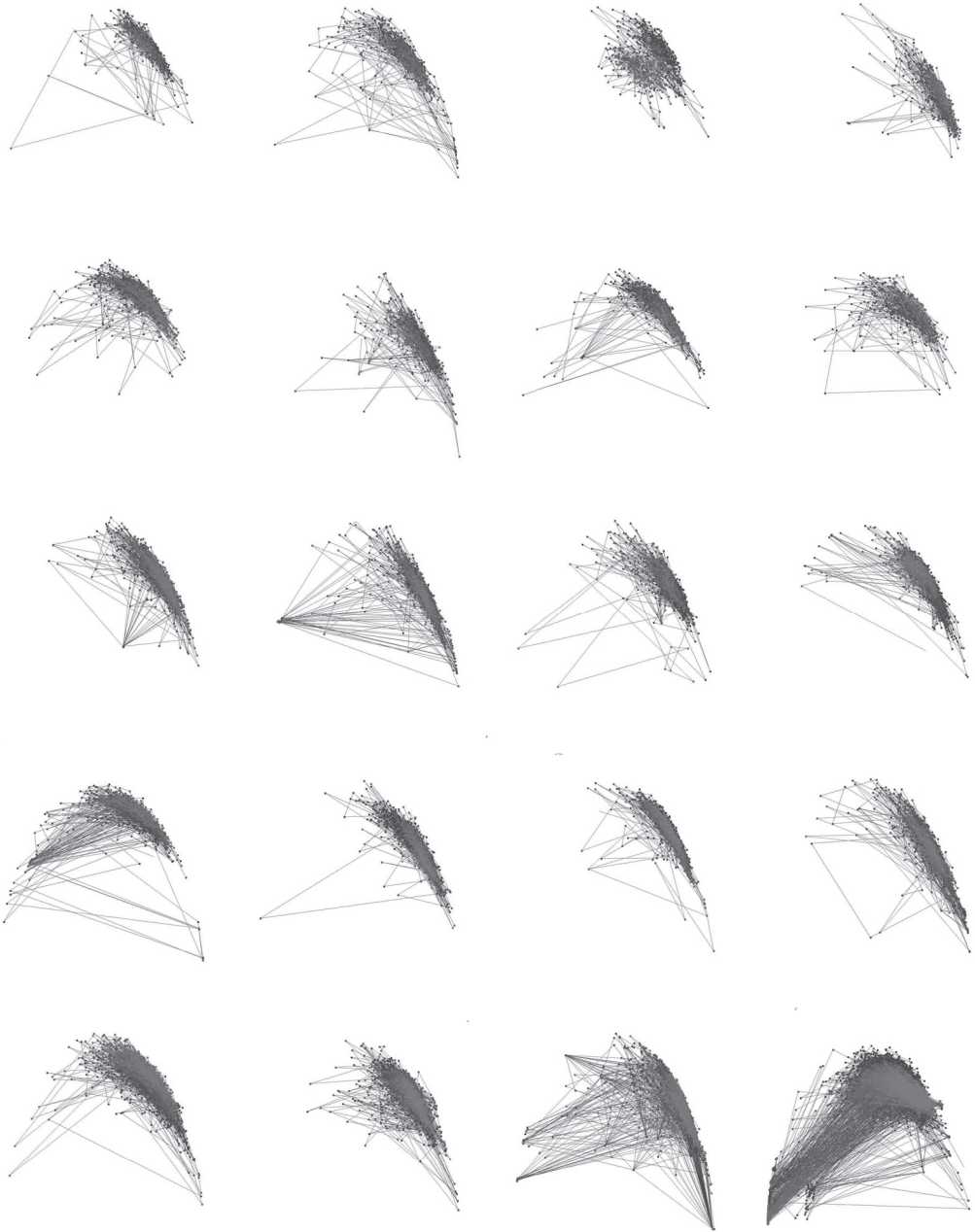
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