The history of the future and the shifting forms of education

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Introduction

Across the globe, education has recently been through a major semantic shift, where new notions such as "learning", "competences", "projects" came to replace or complement an older, more established, educational vocabulary (Mangez, 2008, 2010). The political approach to education has also evolved, as many authors have underlined, from established national forms of governing to global, transnational forms of governance (Fenwick, Mangez & Ozga, 2014). These evolutions, often abbreviated to shifts "from teaching to learning" (Biesta, 2005; Haugsbakk & Nordkvelle, 2007) and "from governing to governance" (Ozga, 2008) have resonated globally and attracted the attention of researchers. Most sociological accounts of such evolutions attribute them to the development and primacy of a preponderant logic, generally politics/power, culture or the economy. The approach that we adopt in this article suggests to start from a different, opposite, premise: not the predominance but instead the lack of any predominant logic characterizes modernity. The functional differentiation of modern society into a multiplicity of – specific yet universal – perspectives should therefore be the pivotal point that helps make sense of these transformations.

According to Niklas Luhmann's systems theory, on which we draw in this article, modern society is indeed not shaped by one specific logic (whether status, power, money, technology or other) but relies instead on multiple heterarchical, interdependent, co-evolving and yet autonomous systems, each with a life and a logic of its own. In what follows, we wish to argue that the very coexistence of such systems, their simultaneous and therefore uncoordinated existences, increases the complexity of the social world tremendously and leaves them with an uncertain future. The so-called turns to governance and to learning, we argue, should be understood respectively as political and educational attempts to deal with this loss of direction.

Self-reference, paradox and asymmetry

When it comes to the empirical exploration of such lack of direction, Jurgen Schriewer's work on processes of *externalization* provides a well-known case in point. The concept of "externalization", as Schriewer regularly reminds his readers, was conceived by Luhmann to solve a very fundamental problem. For Luhmann, externalization helps to explain how systems

that operate in a closed and strictly self-referential fashion can nevertheless constitute and maintain themselves. Or to phrase it more sharply, the problem that externalization is meant to solve is that of explaining how an arbitrary system or order can hide its arbitrariness, how the artificial becomes naturalized, how the possible is presented as necessary. In yet other words, the problem is that of shaping the present while hiding the violence inherent in this very gesture.[1]

Luhmann's solution to this problem is the following: a self-referential system can solve the problem of its own lack of necessity by relying on the internal reconstruction of external points of reference. In other words, system (re)formation require points of reference that are experienced as external (hence as given or foreign, not a product of its own doing), and that it can therefore use as a means for "breaking out of a merely tautological circle" (Luhmann, 1995, p. 466). In this way systems provide themselves with the "additional meaning" they need in order to circumvent their own indeterminacy. Only in this way is "the tautology of pure self-reference (...) interrupted" (*ibidem*; see also Luhmann 1990, pp. 127, 136-139). Externalization, in sum, is for a system a matter of grounding and hence legitimizing itself by assigning meaning to its environment, outsourcing in this way, as it were, its own lack of necessity.

Externalization thus amounts to a strategy to create *asymmetry* between an orientation that is taken (this) and all the disregarded choices that could have been made instead (not this; that, for example). The study of such asymmetrizing practices, one could say, corresponds to what Luhmann (1990c) once playfully dubbed 'Euryalistics'. With this uncommon designation, which refers back to the Greek myth of the three Gorgon sisters, he invited sociology to tread a different path when it comes to the discovery of paradoxes in social life. Paradoxes restore the symmetry between an indication (this) and its negation (not this), which lends them their ambivalent, indeterminate character. Likening the aversion of formal logic to paradoxes to Perseus' beheading of Medusa and the empty celebrations of paradox by postmodernism to the petrifying effect of Stheno, Luhmann chose the remaining sister, Euryale, to symbolize a sociology that would skilfully walk between these two dead ends. Such a sociology, he argued, would have an eye for the inventive deparadoxicalization-techniques that society comes up with to hide its own lack of necessity again. It would be able to recognize "that – and how – such de-paradoxicalization leads to creative alternative solutions" (p. 136).

Consistent with this precept, Schriewer's work built on the difference between the problem (self- indeterminacy) and its inventive solution (externalization) to describe how national education systems selectively borrow examples from abroad in order to compensate for their own lack of stable grounds. He thus took Luhmann's spatial metaphor of "externalization" quite literally, that is: as a sort of "geographical externalization". Explaining how global reform movements come about, Schriewer (1989) spoke of "externalization to world situations" to

[1] Luhmann (2002, p. 113-127) speaks of distinctions or forms – using both as synonyms – that injure ("*Verletzen*") the world: "one wounds the world with a first distinction".

highlight how “descriptions of examples abroad, (...) analyses of the experiences of others, and (...) surveys of world situations (...) serve as frames of reference within which to specify appropriate reform” (p. 398). Grounded in a comparative approach, his oeuvre would then point towards the global spread of new educational semantics, fuelled by cyclically repeated rankings and aided by a frequent practice of policy-borrowing between nation-states (Steiner-Khamsi & Waldow, 2012).

Rather than space, this article will observe how time and more precisely the historically changing observation of the past and the future serve as such a legitimising point of reference for education’s emergent self-(re)formation. In line with Luhmann, we will examine how the perception of the future in particular – as an open, yet undetermined horizon, possibly “dangerous”, “full of promises”, or “uncertain and filled with risks” (Luhmann 1995) – serves as a motive for the education system to creatively constitute and orient itself in one way rather than another.[2]

The history of the future

When it comes to grasping the ensemble of varying ways by which society has understood time, Luhmann has advanced the notion of semantics (*cf*. Luhmann, 1980, pp. 235-300). His use of the term differs from more widespread (semiotic) definitions, insofar as semantics designates, broadly speaking, the complex of concepts available within society. The notion indicates, in other words, the reservoir of established meaning a society can draw on to make sense of the world and itself. Especially in Luhmann’s many historical analyses, semantics occupies a central position and gives expression to his ambition to renew the sociology of knowledge. Instead of unveiling it as ideology, Luhmann opposes semantics to societal structure and posits the thesis according to which the semantics that gives meaning to our experience varies historically and tends to correlate, often in a deferred (but non-causal) manner, with structural changes in the self-organization of society (Luhmann 1990, pp. 123-124).

In order to show how the semantics of time similarly accompanies the birth of modern education, we rely on Luhmann’s “history of the future” (*cf*. Koselleck, 2004), thus comparing how society used to communicate about the future (in the past) – its past futures – with the way it now communicates about the future (in the present) – its present future.

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[2] As opposed, but also complementary to what Schriewer occasionally refers to as “externalization to tradition” (2003). Luhmann, on his turn, hailed this temporal strategy to create asymmetry with help of the future as “finalisation” (1995, p. 467).

Historia magistra vitae

Luhmann's (1998) history of the future begins in the Middle Ages, a time when life was experienced "as endangered life" (p. 64): epidemics, famine, accidents, illness, misfortunes, climatic calamities ruining one's efforts, early death.... Many things could thus happen in the premodern future. However, they were not understood as fundamentally different from the things that had happened in the past: the dangers of the future were similar to those of the past. The problem was (how) to avoid them. Clearly, one could "learn from history", Luhmann argues. History provided a mixture of superstitions, anecdotes, sayings, biblical histories and parables which, by recounting the past, offered lessons for the present, and could help one anticipate "the things to come". Society understood itself by means of such fixed, prearranged, extra-societal laws: "Whenever it was necessary to communicate, or to explain, the order of things, this was achieved via the authority of gods, saints or knowledgeable interpreters, who were trusted in the same way as one trusts a person" (Luhmann, 2017, p. 53). Divinatory practices could also help (Luhmann, 1993b, p. 8). Everything one needed to know and more widely the very order of society was still attributed to non-human forces (Luhmann, 2013a, p. 57). Society could thus attribute the problem of its own order to such external forces.

In this context, where the future, however dangerous, is not understood as fundamentally different from the past, where the things to come are in the hands of extra-societal forces rather than in one's own, no systematized preparation for the future is required. As is well known, for the vast majority of the population, at the time, education primarily happened by means of mere socialization through the oral and practical transmission of know-how and knowledge, myths and popular beliefs (Lebrun et al, 1981; see also Vanderstraeten 2004) that frequently conveyed "religiously based assumptions about true being, nature and the supernatural" (Luhmann, 2017, p. 53). In the then still very rural Europe, local communities most often "educate[d] their young on the job, in their stride, as part and parcel of the general business of living, without relying much or at all on any kind of educational specialist" (Gellner, 1983, pp. 30-31). Most children were not isolated from the world, whether in schools or families, for the purpose of being educated: from the age of 6 or 7, they learned by being immersed in the (local) world. Education was not (yet) differentiated from the rest of society: only a limited portion of the population attended the medieval school which was primarily confined to clerics (Ariès, 1965, pp. 137- 141) and concerned with the transmission of Christian doctrine rather than with education (Luhmann, 2013a, p. 219).

Little by little, in the late Middle Ages, the very form of society evolved from being merely segmented to being more and more strictly stratified and hierarchized with the upper strata (the aristocracy and the church hierarchy) ruling society and controlling ideas, behaviours and discourses (Luhmann, 1982, pp. 238-239; 2013a, pp. 55, 213). The church tried to take firmer control of society, by eradicating superstitious ideas, including among clerics and priests, by repressing sorcerers and magicians, by punishing those approaching and consulting them, by forbidding popular (non-Christian) festivities, by discouraging the Idolatry of Saints (*cf*. Lebrun et al., 1981). Luhmann, drawing upon the work of the historian Reinhart Koselleck (2004), shows how such an effort was decisively facilitated by the fear of the end of the world. The description of the future as the end of the world nourished fears of damnation and hopes of

salvation. In the realm of education, these prospects were reconstructed as the imperious necessity to learn to distinguish between good and evil (Luhmann, 2013a, p. 219).

As part and parcel of this movement, education progressively switched from being primarily achieved through mere socialization to becoming more systemically organized and differentiated from the rest of society. What emerged then across Europe was a sort of "popular religious education" (Luhmann, 2013a, p. 219) whose contents were still aligned with dogmatic teachings (Luhmann and Schorr, 2000 pp. 74- 75) and differentiated according to rank and status. The notion that schools and families operate as sites for the systematic, intentional and still very religious education of the population became generalized around the sixteenth century in Europe.[3]

Trust in the future

For Luhmann, as for many others, the French Revolution symbolizes the tipping point into modern times, in the form of an inversion of the order of the world. Modernity relieved society from its deified points of reference: whatever is, is no longer the will of God or a fact of Nature. Degrees of freedom were released, as Robespierre's famous speech on May 10, 1793, illustrates: "The time has come to call upon each to realize his own destiny." It then became possible for society to question itself: why this? Why not that instead? What "if we set out to observe the natural as artificial and the necessary as contingent?" (Luhmann, 2002, p. 90). In two centuries, the future switched from being in the hands of God to being in one's own hands: "Man reigns alone in this world, and the Revolution of 1789 is the coming of his reign" (Guizot, 1858, p. 24). What thus emerges is the potential contingency of all things and, together with it, the potential for ever more complexity (Luhmann, 1998, p. 44). The future then ceases to be understood as the endless repetition of the past or the end of time. No longer attributed to an external point of reference that remains out of reach, it is now observed as potentially different from the past, as capable of going in this or that direction depending on what is decided and done in the present.

Modernity first experiences a sort of "trust in the future" (Luhmann, 1998, p. 65; Nassehi, 1994). It corresponds to a period of faith not only in the ability of, but even more fundamentally in the very possibility for the nation-state to represent the unity of society (Luhmann, 2013a, p. 288). The political system, in the form of the modern state, adopting a position that elusively resembles the one previously held by religion (Luhmann, 1990, p. 170), is seen as the

[3] Ariès' historical reconstruction of the "invention of the child", on which Luhmann (1995, 2013a) relies, demonstrates how both school education and family education corresponded to a new concern to isolate children from the rest of society, so as to raise them away from the corrupted world of sinners: "Family and school together removed the child from society" (Ariès, 1965, p. 413). The very notion of a family which does not merely live in the world but which differentiates itself and isolates itself from the world participates in and results from the above-mentioned progressive hierarchization and moralization of society. Similarly, the notion that schools should now more systematically isolate specific (young) age groups from society and educate them according to religious principles comes to replace older forms of lecturing primarily oriented towards the (mostly oral) transmission of sacred texts and little concerned with, if not completely indifferent to, age differences in their audience (Luhmann, 2004b, p.91; Ariès, 1965).

orchestrator that will help society meet its own expectations. It is conceived of as being in control of – and somehow standing "above", governing – society, ensuring in this way the unity of the multiple perspectives emerging from the development of a functionally differentiated society (Luhmann, 1995, pp. 464, 612n55). The image, which Luhmann considers illusionary, and which is somewhat reminiscent of Durkheim or Parsons's theory of society (Luhmann, 1984, p. 63), is that of a society capable of governing itself, and even self-improving and progressing, by dividing labour and establishing structural couplings between function systems. For a time, the future is understood as a promise (Luhmann and Schorr, 2000, p. 68): that of the unity of a (national) society that will definitively break away from the old, premodern, hierarchy and ensure freedom and equality among its population (Luhmann, 1998, p. 66; 1993c, p. 779).

The project of national education in particular thus reflects such a state of affairs and established itself in reference to this future and the correlative rejection of its stratified past. As Luhmann (2002, pp. 119- 121) remarks, education therefore relied on the 'technical' invention of the school class. By postulating the inclusion of the entire population indiscriminately (Luhmann 2004b, p. 86), as a nation of equal citizens, and linking this emergent mass schooling to the transmission of a shared canon of knowledge, values and a national language, what David Tyack and Larry Cuban (1995) have famously called the "grammar of schooling" came to stand as a symbol for the rejection of stratification and the unity of a national society (*cf*. Vanderstraeten 2004). A symptom of this homogenising role is that modern school education has indeed (progressively) been expected to be(come) indifferent to non-educational differences among its pupils, such as differences in socio-economic status, background or gender (Luhmann, 2004b) – and only thus could purely educational difference first emerge. Education shifted from origin to future, breaking away from the past and its hierarchical order, strengthened by the conviction that natural dispositions could no longer serve as education's invariable foundation. "From every child can now come all sorts of possibilities," is how Luhmann (1991, p. 20) summarized this shift, and this future-orientation has been the central reference point for the formation of modern school education.

The future as risk

According to Luhmann (1995, pp. 464-465), the view according to which the state could bring society towards a better future was misleading, since it overestimated the ability of the nation-state to actually govern and integrate modern society. The state played a key role, not so much in limiting and controlling but rather in enabling the further development of functional differentiation, thus undermining its own ability to govern society (Luhmann, 1990b). The "tragedy of the state", as Helmut Willke (1986a) puts it, indicates a situation where the state, like a classical tragic hero, contributes to organizing autonomous systems that, as a result, increasingly escape its control. Willke thus pointed out the discrepancy between the territorial definition and scope of the modern nation-state, to which it owns its immense political success as the heroic safeguard that guarantees communal belonging and decisiveness, and the emergence of functional systems (like the economy, of course, but also science, education or art) which profited from that internal milieu to develop a global *modus operandi* no longer

bound or guided by that state. Today, subsystems like the economy, science, education, religion and even sports transgress territorial boundaries and are on their way to form lateral world systems.

For Luhmann (1995), any attempt to observe modern society as a unity (whether under the control of the state, the banner of culture or the rules of the economy) amounts to an "illusionary generalization" that fails to take into account modernity's most fundamental achievement: "Functional differentiation had set in and could no longer be comprehended in any totalizing idea" (p. 465). That modern society is not unified but consists instead of multiple parallel orders has indeed far-reaching implications. Above all, the fact that all functional systems evolve *simultaneously* and react to changes in their environment according to their own logic at a global scale increases the complexity of their world tremendously and renders their future uncertain, which in turn forces each system to deal with the thus created indeterminacy of the future in its own way (see for example Luhmann, 1990, p. 184; 1993a, p. 493). Late modernity is indeed characterized by the fact that it describes itself as being in constant crisis and problematizes its future as full of uncertainties and risks (Luhmann, 1984). No longer understood as some improved version of the present and even less so as repeating the past, the future has now become uncertain: "As never before, the continuity from past to future is broken in our time," Luhmann writes, and he adds: "we can only be certain that we cannot be certain (...)" (1998, p. 67). All dimensions of meaning are affected: neither facts nor individuals, nor time itself, can be assumed to remain as they are: "the only question concerns the length of time it takes for something to change" (Luhmann, 2013b, p. 152).

Uncertainty as certainty

Faced with this specific mode of experiencing the future, which Luhmann (1976) refers to as the "futurization of the future", education and politics, but also science, law or economy can each react in different and even contrasting ways. Understanding how these and other functional domains internalize such (self-produced) "future emergencies" (Opitz and Tellman, 2015) has become a central concern for a number of researchers. One possible, fruitful and yet insufficiently specific answer to this question consists in considering future uncertainties as a resource for the *expansion* of each system, rather than as an obstacle to their operations: uncertainties then fuel the need for ever more education, ever more policy, ever more science, ever more economic operations, more laws, etc. thus endlessly feeding a global process of expansion (Esposito, 2015). While this is certainly enlightening, we contend that more specific answers must be elaborated with a view to explaining whether and how our present understanding of the future changes the very *form* of those systems and what such a change of form implies for them and their environment.

The concept of form has been elaborated by Luhmann in a number of ways, most notably by referring to the formal calculus developed by the British mathematician George Spencer Brown. With radical simplicity, the concept of form indicates nothing more than an orientation that is taken, a line that is drawn. It involves the distinction between two sides: one that is indicated (marked), against the other which remains unmarked. As such, the notion

corresponds to Luhmann's ambition to rebuild social theory from the ground up, not beginning with identity, but starting instead from *difference*. Form is the basic unit to express such an ambition; for Luhmann it conceptualizes in a highly abstract fashion the (Husserlian) intuition that "a difference is contained in every experience of meaning, namely the difference between what is actually given and what can possibly result from it. This basic difference, which is automatically reproduced in every experience of meaning, gives experience informational value" (Luhmann, 1995, p. 74). Put differently, the concept of form

> designates the wounding of the world through an incision, through "writing" in Derrida's sense, through the differentiation of systems in the sense of systems theory. It retains the wounded world as that which becomes unobservable through the installation of possibilities of observation (of whatever form). It does not cancel out the world; it only trans-forms it – as a latter-day descendant of the Fall (Luhmann, 2002, p. 117).

If form, as the most basic expression of how meaning is processed, stands for nothing other than the creation of difference, it is clear that, conversely, the creation of asymmetric difference can be labelled as a process of *morphogenesis* (Luhmann, 1990, p. 179). In what follows, we propose to explore how the contemporary semantic forms of time, centred around future uncertainty, risk and crisis, enable such a process of differentiation that defines anew the form of education and politics. With such a formulation we continue in a line of thought, already explored by other scholars in the realm of the economy (Esposito, 2011) and law (Willke, 1986b), which observes how the difference between those systems and their environment is currently redrawn. In the remainder of this article, we wish to suggest that the contemporary understanding of the future, to which many of the questions regarding the legitimacy of current decisions are evacuated, helps to make sense of the current metamorphosis. That holds for how education is dealt with by the political system and for education itself.

Governance

When it comes to the political system, the problem is that of making decisions in a paradoxical situation. On the one hand future uncertainties intensify the necessity to urgently make decisions in the present: now is the time when the right decision must be taken so as to be able to face what(ever) will come in the future (Luhmann, 1998, p. 67). On the other hand, the very same observation of the future also makes it more problematical to actually make definite/definitive decisions. For, what can be decided in the face of uncertainty about what is to come? How are judgements to be made when reference points become unstable and contingent? Is the capacity to cope with uncertainties itself becoming the only possible stable reference? In such a highly complex situation, the very notion of making definite decisions may appear urgent and needed but at the same time involves an unprecedented level of risk (Japp & Kusche, 2008). The outcome of the thus emerging double bind helps to supplement the well-known bordered and boundaried formal cycle of governing (Luhmann, 1990b, pp. 48-

49) with less formal, continuously revisable, cognitive orientations that are “willing to learn” (Vanden Broeck & Mangez, 2016). Elena Esposito’s observation resonates here: “in times of high uncertainty attention tends to shift from first order observation to second order observation: one observes what others do rather than how things are” (Esposito, 2013, p. 8; see also Luhmann, 1993a, p. 495).

Thus, the political system turns to knowledge in the hope that this will solve the uncomfortable indeterminacy it experiences. However, instead of reducing the excess of possibilities, by highlighting the right decision to take, more knowledge makes even more visible the fact that other ways of doing are possible, thus stressing even further the contingency of all choices (see Luhmann 1993a, p. 495; 2002, p. 59; 1990, p. 139). Uncertainties and the ensuing need to seek solutions thus give rise to intense “knowledge work”: numerous devices are being set up to observe educational systems and operators on an ever more global scale. In 2001, the European Commission went as far as to officially adopt governance structures (most notably the Open Method of Coordination (OMC)), next to its more traditional modes of governing (*cf*. Kjaer, 2010). Precisely because they are not geared towards formal decision-making, such governance structures can include a wide range of stakeholders, such as trade unions or other interest groups, with the expectation of sharing their perspectives, experiences, needs and objections. The thus resulting making of observations and comparisons, the production and circulation of data, evaluation and peer reviews – which characterize the OMC, as well as other instances of transnational governance of education – seem to take over the making of collectively binding decisions. What emerges is a shift in political practices from national and institutionally based governing to governance through the observation of observers (Fenwick et al., 2014). With this shift, the political system adds new possibilities for itself: as Roderick A.W. Rhodes’ notion of “governing without government” (1996) already alluded to, governance structures attempt to steer systems at a distance, without relying on making collectively binding decisions.

By means of such structures, the European Commission, to give but one example, has thus underlined the necessity for education to focus on a number of so-called key competences for the future. Education then no longer seems to describe itself in terms of a shared body of knowledge to be taught and instead focuses on what is being learned by individuals. “Competences”, and even more importantly “transferable competences” capable of being used in a wide variety of situations, including yet unknown situations, are particularly valued. The case of entrepreneurship competence, which has been steadily promoted by the European Commission for almost two decades, is symptomatic of this evolution. The many documents produced by the European Commission on the topic do not point towards any clear- cut body of knowledge but rather understand entrepreneurship as an ability to deal with the unexpected. While the 2003 Green Paper (still) “focuses on entrepreneurship within a business context” (p. 5), what is striking is how the notion of entrepreneurship is progressively stretched and expanded in the documents that come after it. It becomes a means to deal with anything that might come in the future. Entrepreneurship can happen anywhere, in any sector, anytime, thanks to anyone, it can be about anything. It is qualified as “domain-neutral” and seen as a competence that can help in any situation. Perhaps it should then not surprise that even trade unions approve and consider entrepreneur education as “an exciting opportunity for teachers to deliver something that takes their students through a journey. A journey [...],

providing a base that students can develop their futures with" (European Commission, 39 DG Education & Culture, 2014).

The above illustrates how governance structures emerge as the result of the observation by the political system of its own difficulty in dealing with increased complexity by traditional means. Its own form (the form of governing) and its main instrument (collectively binding decisions) no longer suffice. Such limits, however, do not limit but enable new kinds of policy instruments that open new horizons of possibilities for the formalization of education policy as well. Hence, "what seemed to constitute an indissoluble unity," as Ulrich Beck (2006, p. 99) summarized it elsewhere, "politics and nation, politics and state, are being politically decoupled" and thus "transformed" in the light of an indeterminate future.

Learning

School education also faces a paradox, when it turns ever more into a solution and a problem at the same time. While education has always been observed as a means to prepare for the future(s), this is, however, all the more the case when the uncertainty of the future becomes prominent in society's self-understanding. Education is a solution, it is assumed, because it will protect individuals from risks and help them make the most of future opportunities. At the same time, precisely because the future is observed as uncertain, the notion of school-based transmission of knowledge ("teaching") from the past to the future generations is being questioned (Dubet, 2002): one no longer knows for sure what teachers should teach, what and how students should learn, whether there should be teachers at all, or schools, etc. How does one prepare for the future when the only thing one knows for sure is precisely that one does not know what the future situations will be like?

In the last two or three decades most education systems across the world have responded to this paradoxical situation through a major semantic shift, where old (national) curricular notions have been replaced by, or complemented with, a new global vocabulary centred on notions such as "competences", "learning", "projects" (Mangez, 2008, 2010). The semantics of learning became preeminent (Lawn, 2003).

Luhmann too observed that learning, and even more "learning to learn", gained currency as the most suitable way to prepare for yet unknown problems and situations (Luhmann and Schorr 2000, pp. 69-70, pp. 94-104). When it speaks of learning, education abrogates its previous pedagogical ideals of self-cultivation – "a present that will be in effect in the future". Instead, the new semantics of learning stipulates a willingness to change and highlight *this* not as the *starting point*: our willingness to learn is education's "future that is always present" (Luhmann and Schorr 2000, pp. 98). From this viewpoint, learning is hence not per se economically oriented, nor is it tied to the state, or to any other specific function. It is the semantic form or formula by which the education system processes and compensates for its future uncertainties.[4] When the future becomes observed as uncertain, learning thus comes

[4] Luhmann indeed indicates learning more specifically as contemporary education's "contingency formula" (Luhmann and Schorr, 2000 pp. 94-104). That is: as a central semantic expression that delineates the infinite space

to drastically amend the notion of (school-based) teaching. Maybe that is what Luhmann alluded to when he asserted cryptically that "the education process ends itself by making learning permanent" (Luhmann and Schorr 2000, pp. 95).

From our perspective, the semantic shift towards learning opens the road for a limitless self-understanding, where education increasingly discovers its own demarcation from the rest of society as a limitation, possibly an obstacle, to the realization of its own function. Such a differentiation did indeed carry a paradox within itself: school had to prepare pupils precisely for what it was not (i.e. real-life situations, participation in other logics than its own). Once the future becomes observed as uncertain, the need to be prepared for unpredictable real-life situations becomes all the more pressing, the paradox then becomes more visible, and the limits of school education become problematic. How can school education prepare for real-life situations since it exists precisely thanks to its difference from the rest of society?

As an attempt to overcome this difficulty, activities emerge that imitate real-life situations, either by inviting or collaborating with actors traditionally deemed external to the school (referred to as "stakeholders" or "partners") or by rejecting the mere notion of transmitting knowledge in favour of various types of learning-by-doing (Mangez, 2008, 2010).[5] In this way the system/environment distinction re-enters the system. The new emphasis on competences and learning outcomes shows just that: the effort made by the system to deal with its own – problematic – difference from its societal environment. The education system comes to observe the difference between itself and its environment as a problem, even an obstacle to its very function, and hence attempts to become what it is not.

Towards a new morphogenesis?

Systems theory conceives of 'asymmetrization' as a process through which self-referential sys- tems, in order to make their own operations possible, have to choose points of reference that are no longer called into question within these operations but accepted as foreign givens. In this article, we have dealt with the special case of asymmetries established via the semantics of time. We asked how changes in the meaning attributed to time itself, and to the future in particular, help to explain changes in the field of education and in the political endeavour to shape its operations. First, we showed how premodern understandings of time

for contingent possibilities, which now constitute the education system in all its variety. But as Luhmann adds: "These formulas restrict the system so little that the system not only can, but must claim autonomy for its business" (pp. 114-115). Contingency invites an increasing autonomy, autonomy coincides with drawing boundaries and thus with the stipulation of the system's form.

[5] By expressing its dissatisfaction with (national) school systems, the European discourse is not only pushing new creative forms, but also legitimizes them by complaining about what *is*: "Education and training systems in Europe have made great strides over the past decade, but in too many ways they are still turned in upon themselves. Greater cooperation with a broad range of actors in business, research and society at large, including the social partners is needed: education and training establishments need this to become learning organisations themselves, to stay open to outside changes, contributions, ideas and talent, and to remain relevant for the lives of the individuals they serve". "Everyone in society with an interest in education and training must be able to make their contribution, and education and training establishments must be open and able to receive the intellectual and practical contributions that the outside world can make." (extracts from "Detailed work programme: Opening Up Education and Training Systems to the Wider World", https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XG0614(01)&from=SL).

supported religious educa- tion. Modern school education, for its part, emerged with a view to the realization of national societies and on the assumption that the future could be governed. Such planning optimism is now confronted with another perspective, which no longer seems to offer the certainty that the future can be bound by our present decisions. What then emerges as stable is, paradoxically, uncertainty itself. The latter becomes a sort of unquestioned assumption. Instead of explaining the resulting ambivalent metamorphoses by the strength or centrality of one predominant logic, and hence against a ubiquitous strand of literature, we have argued that they establish them- selves in response to the paradoxes that resurface when different logics—politics and education, in our case—each autonomously begin to process this new future orientation.

As Gunther Teubner (1997) has similarly observed in the ambit of law, expanding on a thesis already formulated by Klaus Krippendorf (1984), a new kind of morphogenesis thus emerges. It is one where paradox is not repressed in favour of simple asymmetries (this, not that) but maintained and transformed into an endogenous modality (that-being-this): Educate, but not as a school would! Govern, but not as a government could! Such new and more complex forms, Teubner remarks, maintain the very contradictions that give rise to paradox and transform it into an internal distinction. They insert the difference between system and environment into the very difference itself and in this way introduce the negation of classroom teaching into the world of formal education. The same holds for the political system, which thus discovers a new modus operandi, different from its national configuration, in which learning from society no longer necessarily excludes the ambition to simultaneously control it.

Luhmann chose Euryale to study how, through a multitude of inventive solutions, the paradoxes of our social world are hidden in asymmetrical forms. But perhaps the inquiry of this opposite movement—how established forms return to paradox—warrants a different patron. To be sure, the study of these forms, which apparently seek to restore the symmetry of an ‘uncut’ world, back to its state before the Fall, might require a similar sympathy for devilish demons. Perhaps then we could choose Mephistopheles, the devil who invited Faust to descend (or ascend) to a realm where ‘shapes will crowd and swirl like clouds’ and where ‘there is no rule—for all is form in transformation’.

Wherever that may lead us, such a Mephistophelian study would not (only) observe how systems solve their lack of necessity through externalization to an outside world. It would (also) see how certain systems internalize their differences from that external world as productive self-contra- dictions in order to circumvent the limits of their finite form. It would observe such Faustian hubris, well aware that the realm of dissolved forms the devil promises always escapes us, condemned as we are to draw distinctions in order to establish meaning. It would also be aware that the lexis of learning, both in education and politics, occupies a central role in accompanying these new paradoxical forms. Learning seems to offer the necessary semantic cover to dress up the new-found ambivalences and thus ultimately unfold the paradox again. The remaining question is, then, what differences these ambivalent forms nevertheless make, what new oppositions they live on and hence how they, too, inevitably wound the world with new distinctions to establish their meaning.

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