

Education in world society: A matter of form

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Abstract

In his posthumously published work on education, Niklas Luhmann (1927–1998) described his approach to the sociological observation of the educational system as a formal one. Only by refraining from more substantial definitions, based on what teachers hope to convey, he claimed, can education be understood in all its historical and geographical varieties. By rereading his oeuvre as a socio-historical account of modern school education's morphogenesis, I inspect this so-called formal approach more closely and show how it brings together different understandings of its central notion, form. The underlying theoretical movements of Luhmann's formal approach, composed of indication and delimitation, of generalisation and re-specification, provide useful hints for the study of those forms of education which today increasingly emerge outside of its formal institutions.

Keywords

Social systems theory, globalisation, form, school education, learning platforms

Introduction

Any attempt to grasp the meaning of modern education through its content, the outcomes it achieves or hopes to achieve, quickly encounters insurmountable problems. For, whether it is English grammar or art pottery, *Le Côté de Guermantes* or Zhuangzi, folk dancing or software coding, no matter how one continues this enumeration, none of its subjects, nor all of them together, would be able to exhaustively determine what is practised around the globe as education. Education, so it appears, has too many local variations, is always entangled too tightly with the surrounding national context and its idiosyncratic canons of cultivated knowledge, to tolerate any overarching, globally valid definition. Its own historical and geographical situatedness is at odds with such a global perspective, at least when resorting to the knowledge and skills that educators aim to convey. “Any substantive definition of the concept of education leads to the question of what is excluded by it and how this exclusion can be justified worldwide and for the history of education” (Luhmann, 2002:

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54), hence concluded in one of the rare passages where he acknowledges the worldwide backdrop against which all education nevertheless evolves.

As a remedy, although not an uncontested one, Luhmann proposed a formal approach to education. Such an approach (tautologically) defines education through *the intention to educate as it is made present in interaction*.¹ Rather than taking as its object what education seeks to teach, it invites sociologists to observe how education distinguishes itself as a highly specific communication process, different from others. The attention thus shifts from the search for education's defining substance, supposed essence or unalterable structures, and gives way to questions of boundary maintenance. How does education establish itself and persist, different and distinguishable from other social processes? How does a pedagogical intention become manifest as a process of interaction *sui generis*? Radicalising a direction already undertaken by Talcott Parsons (1951) and paralleling developments within linguistics, post-structuralist philosophy and cybernetics, Luhmann answers this question by stressing difference, rather than identity.

At its core, Luhmann's understanding of form is indeed synonymous with difference. The notion gives expression to his ambition to rebuild sociological theory from the ground up. Form is the differential foundation of such an endeavour (*cf.* Clam, 2002). It ties together two strands of thought into a single method.

From Husserlian phenomenology and its application in *Gestalt* psychology, such a formal method draws its empirical capacity to observe patterns as they emerge against an indistinct but constitutive background and its ability to theorise such an emergent process as meaningful. Every shape, every difference between a phenomenon and its environment, can then be observed as giving expression to the 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: 74). It makes a difference whether we distinguish education from labour (in order to question its usefulness) or education from family rearing (and then wonder how the one should compensate for the other). The notion of form is meant to grasp such a difference. When applied to education, it describes the distinction and hence the relation between education and the rest of society. When speaking of the *form of education* the question is not a matter of substance or identity, but of a horizon of possibilities resulting from the intention to educate and the *difference* that is thus established with all other social activity.

Drawing on formal logic and its reception by second wave cybernetics, Luhmann's concept of form seeks to depict such a differentiation process by which a phenomenon asserts itself as a self-organising affair (*cf.* Varela, 1975). In line with the injunction of the British mathematician George Spencer Brown (1969) to "draw a distinction", form is understood as a performative act, as the result of an operativity that distinguishes between two sides: one that is indicated (marked), against the other which remains unmarked. The outcome of such marking or distinguishing is what Luhmann indicates as a *system*: "The system creates itself as a chain of operations. The difference between system and environment arises merely because an operation produces a subsequent operation of the same type" (Luhmann, 2013: 52). Systems create, indeed *are* a form and hence our interest in the form of education leads straight to the matter of what we could call boundary work: the ways in which education manages to distinguish itself from the outside world and establish itself as a distinct kind of self-organising social process. That is: as a system. Whether and how education succeeds in establishing itself as a clear-cut system, I should add, is above all an empirical question, not a question of theoretical determination. Against the common prejudice that his framework lacks empirical interest, Luhmann's methodological precept to observe systems as (they gain) form, turns education into an observable practice, into *doing* education.

Quite evidently, this systematic maintaining of a boundary with the outside world via sequences of a sufficiently distinctive type of operation requires a particular ability to discern and ultimately decide what is deemed compatible and what is not. Borrowing again from Spencer Brown's calculus of forms, systems theory handles such questions of boundary control under the heading of *re-entries*: paradoxical operations whereby the difference between inside and outside enters the distinction itself and whereby (a version of) the outside world thus becomes manageable internally. Only by observing how such paradoxical constructions are handled can it become clear how a system manages its own frontiers. Attention to form, Luhmann hence concluded, requires the mapping of the "*entire genealogy, including the concept of form, re-entry, the paradox of re-entry, and the dissolution of the paradox*" (Luhmann, 2013: 61; my emphasis).

In this article, I wish to set out Luhmann's formal approach or method, show how he tracked this genealogy within the domain of education and evaluate its usefulness for the sociological study of today's state of affairs. To that end, I shall highlight two facets of his systems-theoretical account of education in modern society. First, I shall outline the role he attributes to time in the emergence of modernity, so as to highlight how he characterises our epoch as a "cosmology of contingency" (Luhmann, 2005) in which society attempts to shake off the shackles of the past. From then on, education can no longer accept the (personal) past, someone's origins, as a limiting factor for his or her development potential. Instead, the future indeterminacy of our life course gains centre stage. Since then, education can comprehend itself as a factor of personal change and exactly this pedagogical intention, I shall argue, planted the seed for education's differentiation. Next, I shall elaborate how the pedagogical intention relates to this characterisation and summarise the morphogenesis of modern school education as a question of contingent re-specifications by which the intention to educate is made present. Both the second and third sections set out to illustrate how via its pedagogical intention education shapes its own form as an autonomous system of modern society, distinct from other societal logics. I shall then point out how the technical invention of the classroom was instrumental to this outcome and describe the resultant *forme scolaire*, as Guy Vincent (1982) has labelled it, as a technique for coping with opacity. In conclusion, an appraisal of this formal approach is given, and particular importance is given to the observation that this form of school(ing) itself increasingly appears as a restriction on what education in today's world society aspires to and puts into practice as meaningful.

Form as difference: from past to future

Probably one of systems theory's most fascinating hypotheses states that the novelty of modern society resides in a changing temporal horizon (Luhmann, 1982: 321). For Luhmann, who built on a premise first put forward by his colleague Reinhart Koselleck (1979), early modernity drew a caesura with previous epochs via an incipient *temporalisation of history*, resulting in a strongly differing experience of time. Earlier understandings of time were shaped around the religiously inspired distinction between life and the possibility of salvation in a hereafter. Such conceptions understood lifetime (*tempus*) as opposed and subordinated to the "timeless time" of perennial after-life (*aeternitas*). While time was thought of as the transient course of events, a continuum that only gradually revealed itself, the vantage point of eternity was considered to offer a unique oversight over the totality of time, containing past, present and future simultaneously, according to Luhmann's (1993) characterisation of premodern temporality. The subordination of worldly time to the next world thus also translated into a difference in knowledge. Mere mortals might entertain doubts about their personal or the world's fate, but to (divine) eternity omniscient certainty was attributed, as the perspective from where all time was created and contained. Premodern society could hence

absorb its uncertainties, as it considered not time itself, but eternity as the genuinely determining dimension of time and credited the latter with perfect knowledge (cf. Esposito, 2015).

But if afterlife was thought of as decisive, time itself was indeed absolved from most decision-making, observed Luhmann (2013: 256). The only really significant decision left open to premodern individuals was for or against sin – and thus between suffering damnation or gaining salvation in the next world. Hence, premodern time establishes itself as this curious, today almost unfathomable coincidence of determinacy, resulting from the underlying dimension of a timeless eternity and very limited leeway for individual choice. The world was the way it was and could be, mainly because the opposition between *tempus* and *aeternitas* was also conceived as ordered in a clear sequence: all time owes its being, according to premodern temporality, to a timeless origin that precedes it and has already laid out its pasts and futures during its creation.² To express such a set of circumstances, premodern semantics puts *nature* at the centre, not in our modern sense, but understood as the necessary and invariant basis of the world. As a result, premodern time always carried the past in its present: as an invariable origin, as a self-evident and undisputed presence against which the present was continuously measured. The past was not history, but (present in) the present and so the future as well remained bound to the past.

Once the past becomes, on the contrary, observed as history and detached from the present as a self-standing reality, the here and now is no longer measured on its adequacy with the past. But it is now instead the past that is observed, interpreted, evaluated, rewritten and possibly even discarded, if not capable of providing the present with sufficient latitude to decide on possible future courses. The temporality of the emerging modern society increasingly supposed this *divergence* between past and future. According to this modern understanding of time, our future state of affairs is no longer expected to automatically match past states. Modern temporality breaks the linear continuity between past, present and future. Consequently, society can understand itself as no longer necessarily bound by its past, while its orientation gradually shifts towards a future deemed still undetermined and open. In modern society, as Elena Esposito (2011) hence aphorised this epochal change, the future shapes the present. The future becomes the focal point for the projection of new expectations. It provides a horizon of possibilities wherein salvation finds its secular translation as the hope of progress.³

When now turning to education, it is easy to see how this new status quo makes itself felt with particular intensity. Rather than guiding human growth towards the natural perfection it was predestined for, as premodern instruction understood its task, the pedagogical thought of early modernity indeed increasingly abandons such role description and contemplates education as an opportunity to *change* its addressees. That is: as intentional instruction that is oriented towards their future, irrespective of their past. Education should no longer view the child as shaped by innate ideas, to use John Locke's expression, which only needed to be brought to fruition, but instead as an empty sheet on which instruction can write his or her future. "From every child can now come all sorts of possibilities," as Luhmann (1991: 20) summarised the future orientation of this new pedagogical semantics, and much of his attention was indeed geared towards mapping out how rather than mere vigilance over the good nature of the child, so as to avoid its moral corruption, modern pedagogy began gradually to understand education as a means for deliberate change, for which it claimed unchallenged competence, regardless of any assumed nature or origin (cf. Luhmann and Schorr, 2000).⁴

Although the first expressions of this modern pedagogy seemed primarily aimed at the *pater familias* and recall what we would today label self-help literature, they above all signalled that education could no longer be left to the whims of family life.⁵ The ideals of human perfectibility that they depicted demanded more effort and greater responsibility. They heralded, Luhmann (1997) claims, the differentiation of education as a reality in its own right. Since from then on, it

becomes possible to distinguish between the largely implicit learning processes that we all undergo continuously – socialisation – and that which Jean-Jacques Rousseau already explicitly indicated, with a here rather fortunate expression, as “a system of education”.⁶ The caesura between these two, asserts Luhmann, is marked by the modern pedagogical intention:

By stipulating that something is done for educational purposes, the operations that can meaningfully follow are reduced. Neither the nature or essence of education, nor a normative law, nor a cultural value such as *Bildung* produces what happens at the operational level. Rather, the system generates itself through a process of self-binding, a commitment to continue or reconstruct what has been started. The symbolism of the intention is vague enough to take up new suggestions or coincidences, disturbances or opportunities and to give the course of events an unexpected twist every now and then. By “intention” the system means nothing other than itself; but this in a way that can be interpreted operationally as action. (Luhmann, 1992: 113)

By means of its pedagogical intention, education crystallised into a system that is able to observe its own unity while simultaneously drawing a boundary between itself and other social practices, such as political decision-making or the economy, which lack such intention. The intentionality of education, in other words, serves as a signal for recognition, for belonging to a single ensemble of pedagogical activities that is thus able to develop systematicity. It symbolises educational relevance and “togetherness” in a way that is visible to all involved. But although it is hence the pedagogical intention that catalysed education into being as an autonomous and distinct reality (Luhmann, 2002: 60), it is the thus established *difference* from the rest of society that shapes its *form* as a system and ultimately gives it its meaning.

Instead of contrasting this understanding of form against matter (as the notion’s philosophical history might suggest) or content (as Georg Simmel did), Luhmann suggested the notion of *medium* as its counterpart (Luhmann, 2012: 113–120).⁷ Building on the work of *Gestalt* psychologist Fritz Heider, Luhmann explains the connectivity among phenomena – the succession of forms – by the presence of a medium that itself always remains invisible. Much as a series of sounds always relies on silent air to be heard or a variation of colours needs invisible light in order to be seen, it is said that the social world too relies on media to shape and dissolve different forms. According to the resulting characterisation, forms are no longer considered the merely incidental expression of a matter or essence that actually constitutes the substantial. Instead, and against such essentialism, the notion becomes part and parcel of how his systems theory envisages that the contingency of the social world – the scope of the possible – is always handled via dissolution and recombination practices that either replenish or reduce complexity. The focus of the analysis thus centres on the question of contingency and its forms, a question which has for a long time been popular in systems theory.⁸

As Esposito (2007: 89) remarks, the thus emerging perspective implies above all having an eye for the “liquification” of age-old necessities into a new “space of contingency”, which invariably raises the question of how the thus emerging latitude is to be administered into new arrangements. And indeed, the same is true for the emergent education system. In the modern “cosmology of contingency,” where everything is lived as a possibility and not an impossibility or necessity, education shifts together with the rest of society from origin to the future. Education has adopted this deeply modern temporal orientation to the future, so runs Luhmann’s (1997) thesis, and transformed it into its own *medium* or reservoir for potential educational interventions. But how does education find a foothold without the reference points previously provided by the idealisations of one’s origin as nature? The question quickly emerges of how its modern practice uses the acquired degrees of freedom to determine its own present. Or, phrased differently: how does education act

on its pedagogical intention to change the addressee in the light of a future that appears open to anything and no longer necessarily restricted by his or her past? How is a sense of (communicative) order regained in this newly created realm of open possibilities? Precisely this question will be dealt with below, where I review how Luhmann's systems theory explains the morphogenesis of mass schooling.

The morphogenesis of school education

Whenever educators try to impart knowledge or skills to someone who does not yet have them, the intention to educate becomes most recognisable. Nowhere more so than in such activity, education can fashion itself as intentional change. But such self-understanding has its consequences. Ever since education has claimed to change whoever it addresses, on the one hand, its outcome can be compared to its initial intentions and thus invariably results in an evaluation of its success or lack of it. The "intentionalisation of socialisation" that, according to Luhmann (1987), typifies modern education inevitably brings the evaluation of pedagogical outcomes to the fore. Precisely for this reason, Giancarlo Corsi (1996) has pointed to the pedagogical intention as the unity of the difference between instruction and selection and designates this distinction as the (inner) form of the education system. Next to the need for evaluation, the intention to educate also brings education as a specific operation into focus. Towards the end of his life, Luhmann indicated the intentional conveyance of knowledge and skills as the operation that establishes education as a system. Following a proposal made by Jochen Kade (1997), he claimed that the thus emerging distinction between what is conveyable in educational settings and what is not, is what makes it possible to code the communication among those present as being educational. As a symbolic generalisation, however, one easily sees that the modern pedagogical intention still lacks specificity. Even when practised as conveyance and structured by the prospect of its evaluation, it is a blank slate that does not yet specify how instruction can ensue – only that it *can* ensue. In line with the tradition of systems theory, such generalisation is therefore observed with chains of re-specifications that mould education's generalised intention into a more determined shape.⁹ In Luhmann's oeuvre, four mechanisms to re-specify the pedagogical intention are discussed. I review them here briefly in order to highlight how each contributes to the emergence of school education as a highly specific form of interaction:

- (a) Education always presumes somebody who needs it. At its most basic level, the pedagogical intention indeed re-specifies itself by means of the person. The latter does not here denote the classical subject, nor the full complexity of the participating individuals, but a reference to the latter by the education system as *pupils*. It constitutes an external point of reference within the system, allowing the system to organise itself (Luhmann, 1992: 123). Using this point of reference, the instruction can distinguish between pupils, develop expectations about each of them and organise itself accordingly. The re-specification of education over persons situates it in a group of function systems, together with medicine, in which communication processes organise their own internal development, while seeking to provoke a precise effect in the environment (the pupil's mind, the patient's body). Precisely like other "people-processing" systems, education has developed its inclusion as professional care, asymmetrically constructed between a performance role (teacher) and an audience role (pupil) (Stichweh, 2005: 21), and a strong dependence on interaction (Luhmann, 2002: 102–111).
- (b) In modern society, no interaction obtains structural relevance without an organisational context and this also holds for education's well-intentioned efforts. The meaning of organising education is precisely situated in providing possibilities for the re-specification of its

all too general intention (Luhmann, 2002: 153–165). According to systems theory, organisations are ultimately chains of decisions (*cf.* Luhmann, 2000) and re-specification thus becomes a synonym for decision-making: about personnel, about schedules, about classes and their classrooms, etc. The *school organisation* thus answers the problem that the pedagogical interaction requires decision-making, but that those decisions cannot be taken in the interaction itself (Luhmann, 2002: 121). That educational organisation thus inevitably creates a well-known differentiation – often portrayed as insurmountable (*cf.* Bidwell, 1965) – between itself and the interaction process it seeks to organise, is an irony not lost on Luhmann: “as soon as the educational interaction begins, teacher and pupil are at the mercy of its dynamics. They need to react to what has already happened or attempt to ‘interpunctuate’ its course to grant new themes a chance of entry. The organisation pulls itself back, as it were, and leaves the interaction in charge” (Luhmann, 2002: 160–161). The primary gain of organising education as school is hence not the obtaining of steering control over the interaction, either over its process or its outcome. Educational organisation cannot be understood as increased rationality or efficiency. As others have also pointed out – Weick (1976) above all – educational organisation can hardly be grasped by such a vocabulary.

- (c) When the pedagogical intention obtains the characterising, specific organisational shape of school, the latter also constitutes the basis for education’s further internal differentiations – into schools and universities, different school types and yearly cohorts – which then enable the construction of diverging school careers for pupils and professional positions for *teachers*. The professionalisation of the latter forms another specification of education’s general intention to change its pupils.¹⁰ It is, however, worth pointing out that Luhmann’s understanding of professionalisation has little to do with the common conception of professions as occupations whose access is limited by academic credentials, thus distinguishing themselves from other occupational categories by their status and the close link with learned knowledge. On the contrary, what characterises professional work, Luhmann (2002: 148–149) notes, is precisely that such academic knowledge is seldom sufficient to bridge the gap between principle and praxis – or, in our case, between pedagogical intention and outcome. What therefore characterises professional practice first and foremost is that “this knowledge cannot be applied directly, logically, without any problem”, and thus all the more that “every application is burdened by the risk of failure”. In Luhmann’s account, professional work signifies above all coping with uncertainty in highly complex situations, with the awareness that there are no straightforward recipes for success. From such a perspective, professionalisation hence does not coincide with “academicisation”, but should be understood as the monopolisation of a specific area of uncertainty as one’s unique occupational space.¹¹ If successful in fending off the competition of other occupations, professions take up the role of mediating between the two worlds expressed by the specific value they are oriented towards: from uneducated towards educational success.

Like any subdomain of modern society, education faces the problem that it needs to generalise its function to the whole of society – so that every event, fact or problem can become an object of instruction or learning activities – by re-specifying it into a workable practice. The three above-mentioned ways to re-specify education’s pedagogical intention seek to answer that quandary. In earlier writings, Luhmann (in particular Luhmann and Schorr, 2000) put forward a different perspective on how the education system seeks to regulate its boundaries. Its unity was understood not so much as being brought together by an intention, but rather as comprising the two sides of the difference between education’s internal development (its function) and how the latter relates to

society's external expectations (its performance, in Luhmann-speak). In contrast to Pierre Bourdieu's oeuvre, where the two are opposed to each other as autonomy versus heteronomy, systems theory observes their unity in the historically evolving semantic formulae by which the education system internally reflects on how to balance its own self-understanding with society's demands. These formulae or descriptors are instances of the paradoxical re-entries that we have already encountered in the introduction. They reinsert the difference between education and society within the difference itself, in an effort to manage the distinction or form internally. They are the mechanism – a Rubin's vase of sorts – with which education displays and evaluates itself and its societal environment (Luhmann, 2002: 182–186). In the technical vocabulary of systems theory, such semantic expressions are designated as “contingency formulae”: they are the canonised expressions by which function systems, such as education, negotiate between generalisation and specificity (Luhmann and Schorr, 2000: 66) as they transform the world's indeterminacy into a determinable contingency. The latter then does not refer to the contingency of the world, but to the possible ways a system can deal with it (*cf.* Luhmann, 2004: 216). In short, these self-descriptors help unfold the now paradoxical difference between inside and outside into a workable course for action:

- (d) In the course of its history, the formulae used to reflect on education's unity with its environment underwent several reformulations, shifting from ideals of all-round education (such as the German ideal of *Bildung*) towards the contemporary idealisations of the ability to learn (*cf.* Luhmann and Schorr, 2000: 66–104). These formulae constitute norms that, as an observation scheme, are able to represent the unity of the system, all the while stipulating, as it were, under what conditions the rest of society appears relevant for the education system. They let the world appear through the specific, functional lens of each subsystem by providing a single norm to express its unity. Their historical evolution discloses above all that what school education can teach comes down to a matter of choice and thus decision. Precisely this becomes apparent in the *curriculum*, the re-specification by which education, falling back on the school organisation, details its generalised unity into a specific codification of the materials it wishes to teach.

The opacity of classroom interaction

The pupil as the centre of the pedagogical intention; his or her asymmetrical relationship with a professional teacher, who mediates autonomously between educational success and failure; an organisational mode that by means of its decisions arranges inclusion and dictates how time and space are to be divided and repeated; and a planned, revisable curriculum, which specifies what is to be taught to the person it wishes to educate, thus closing the circle again – Luhmann advanced the notion of *classroom interaction* to grasp the ensemble of these re-specifications. As I have elaborated elsewhere (Vanden Broeck, 2020a), this conglomerate term seeks to grasp how the education system creates its form and thus the necessary space to enable an almost infinite range of possibilities for itself, whilst simultaneously avoiding sheer arbitrariness. The school class, Luhmann (2002: 119–121) argued, is the technical invention to improve the odds of an interaction that does not end in a merely pleasant get-together, where anything goes, but results in the much more improbable outcome that the persons involved learn something.

What emerges from this interplay between re-specifications is the distinctive shape of an education system that thus somehow overcomes the transience of the ever-slipping away present of the pedagogical interaction, granting it recognisability and repeatability.¹² Both are accomplishments

of a system – or more precisely of the *form* of a system, emerging when education evolved towards self-organisation. Especially when formulated as such, Luhmann's notion of classroom interaction closely resembles what Guy Vincent once summarised as *la forme scolaire* or the school form:

For the pupil, to act according to the rules, for the master, to teach by principles: that is what has seemed to us characteristic of school activity and allowed us to define a form of school. Namely, a place separated from all others (including places of worship); a space organised so that masters and schoolchildren may, in the formulation of J.-B. de la Salle, fulfil their duties; a set time and a use of time that is a principle of order, rather than efficiency; a secular master, at least in his function (even before education was secularised); exercises where conformity to principles is of greater account than the result; finally, the means to uphold this school order. (Vincent, 1982: 529; my translation)

But while Vincent's historical depiction of the school form strongly highlights its disciplining traits, characterised by "a military organisation of space and time, a pedagogy based on prohibitions" (Vincent, 1982: 90), such a conception remains largely absent in Luhmann's perspective. Although his portrayal of modern education sketches a system that relies on organisation and interaction in its irresolvable attempt to domesticate the "savage" minds of the pupils, the stress falls on the ordering effects this ambition implies for the *instruction* – much less for them.¹³ Where Vincent's stress on the rigidity and unswerving stability of this educational form brings to the fore its inevitability (Vincent et al., 1994), Luhmann's sociology of education sets out to demonstrate the opposite. It sketches out how through various specifications the education system historically succeeded in the highly improbable task of establishing its modern unity, in the absence of any other grounding principles than its own.

The technique of the classroom has been central to this outcome. For education to become systematic, Luhmann (2002: 121) claimed, it is reliant on this curious, never really merging amalgam – "a peculiar symbiosis" – between interaction systems that require decision-making (on what to teach, when, by, to whom and so on) and organisation systems, to which that decision-making is delegated, but which always face the difficulty of the fickle volatility of the former. The same holds true for the professional role of the teacher, who must also tackle the inevitable ambiguity of the interaction in which he or she intervenes. School education, in sum, is generated in the attempt to control intransparency (Luhmann, 1997). The morphogenesis of its social order rests on a *double opacity* that compels instruction to find solutions (Luhmann, 1986). Interaction, on the one hand, serves mainly as a means to address the deficient transparency of human understanding and verify the attainment of its pedagogical intentions: since a change in mental state is not directly visible anywhere, there is nothing left to do but interact in order to check whether something has actually been learned. The various mechanisms that re-specify these pedagogical intentions, on the other hand, seek to tackle the opacity brought about by that very interaction.

Coda: on the form(s) of global education

In an attempt to grasp education without sacrificing its rich variety of manifestations throughout history and around the globe, Luhmann proposed a formal approach. Such an approach observes the birth of modern education starting from the explicit intention to educate, irrespective of origin or nature, as made present in interaction processes. The preceding pages have sought to make apparent that the formal character of this definition can be said to express itself in two different ways.

As the previous section has shown, a first way shifts the interest towards establishing how, through the intention to educate, interaction obtains a characteristic and recognisable form. The

stress thus falls on the particularities that shape interaction as instruction. Whether in France, China or elsewhere, whether today or two centuries ago, education is made recognisable as such by the mechanisms that re-specify the pedagogical intention to educate as a question of pupils, teachers, schools and their curriculum. As if to answer a question Jacques Derrida (1982: 169) once raised regarding the notion of form – “How does it determine the meaning of Being as presence, that is, as the present?” – Luhmann’s sociology shows how the thus resulting form of education effectively articulates the scope of the possible as classroom interaction.

But this focus on the pedagogical intention and on how it is made present as a highly specific form of interaction not only makes it possible to abstract from the thorny issue of education’s social imbrication in always situated contexts. At the same time, the intention to educate demarcates education from the mere socialisation processes that continuously occur without any explicit pedagogical intention. It is the pedagogical intention that renders visible the difference between education and socialisation and, more broadly, between education and the rest of society. As a generalised symbol of modern education (Luhmann, 1992) – its boundary object, one might say – the intention to educate flags what is in and what is out. It indicates what belongs to education and what such education will treat as extraneous, as beyond its own doing. In other words, it draws the contours or indeed the form of a societal subdomain by delineating its limits.

In this double sense, Luhmann’s systems–theoretical observation of education can be described as a matter of *form*, be it in terms of observing the shape of its interaction processes in the light of a series of re-specifications or as the demarcation of a societal subdomain. It should hence not be a surprise that describing the *morphogenesis of education as mass schooling*, the improbable emergence of this distinctly modern form of classroom instruction as an autonomous, self-standing system, constitutes the centrepiece of his educational sociology. As a result, one might easily be tempted to conclude that his writings – like most sociology of education, after all – amount to a sociology of school. Such an evaluation would not necessarily be wrong. His sociology does indeed offer first and foremost a theoretical account of school education that rewrites as it were the latter’s formal characteristics into its own abstract, conceptual vocabulary.¹⁴

As a conclusion to this article, I would like to highlight that Luhmann’s formal approach nevertheless makes it possible to step *beyond* a sociology of school education – even if he himself largely abstained from doing so.¹⁵ Such a shift of focus towards other forms of education increasingly appears necessary in an era where learning and instruction are put into practice without school or classroom, during today’s pandemic more than ever, and indeed do so on a global scale. In an age where these two activities are increasingly entrusted to educational apps and learning platforms (Decuyper, 2019a, 2019b) or to transnational networks of educational and non-educational organisations alike (Vanden Broeck, 2020a, 2020b), it becomes ever more urgent to renew sociology’s vocabulary with new terms better equipped to express this new reality.

Understanding education as a matter of form offers a starting point to observe such phenomena, not as simple tools for reinforcing the existing stratification between the haves and have-nots, as sociology often seems content to point out, but as a signal for newly emerging differentiation processes within the system of global education. Starting from their intention to educate, sociology could observe these new phenomena and search for the new and different mechanisms that re-specify education as an endeavour different from classroom interaction. What are the functional equivalents that “platform education” relies on in the absence of teachers and/or pupils? How do algorithms re-specify interaction as instruction? And does the label “interaction” still prove adequate for describing such communication between humans and artificial intelligence chatbots, with whom we do not share any physical context? How do apps specify what is possible as education (and what is not)? Traditional research has thus far barely scratched the surface of these and similar

questions. If anything, the systems–theoretical approach I have outlined above offers a first step to help discern the improbable genesis of these novel and globally operating forms of education.

Let me conclude with two topics that could prove fruitful when further exploring such a line of research. First, the search for functional equivalents to the classroom could, indeed should, pay attention to potential *problems of boundary maintenance*.¹⁶ If the pedagogical intention to change its addressees is the cornerstone of all modern education, can the human participants involved – pupils and teachers alike – then still recognise it when on the other side there is an algorithm doing the grading? Or when it is an artificially intelligent chatbot suggesting a new stack of learning modules? In classroom interaction, as the previous pages have sought to make clear, the school organisation plays an important role in drawing the line between what is education and what is not. The physical seclusion of its classrooms helps to make tangible that once the classroom door is closed, instruction can reign sovereignly, without interference from the outside world. Does the same hold true for the learning activities on digital platforms? Do such learning platforms allow for the autonomous creation of pedagogical value? Or do they only enable value extraction by co-opting resources created elsewhere (*cf.* Stark and Pais, 2021)? Is their organisational form a sufficient re-specification to make education expectable? Or does it provoke boundary uncertainty, if not outright confusion? And are there any new self-descriptors emerging by which education seeks to gain a sense of autonomy? Or do they lag behind these formal changes? Adhering to Luhmann’s methodological maxim to observe the “entire genealogy” of emergent forms should not necessarily lead to blindly claiming (or denying) its full realisation *a priori*. Rather, it should invite one to raise these and similar empirical questions, which otherwise might remain unasked.

Secondly, when education is understood as the shaping of a highly specific interaction process for the sake of a pedagogical intention, its long history can be read as the expanding effort to produce techniques intended to compensate for the opacity and volatility of that interaction. As already discussed above, as long as this interaction is held among people who share the same space and time – in a classroom, for example – the interaction context thus created retains a certain unruliness. One can draw up timetables and curricula, recruit teachers and organise class groups. But what happens between the classroom walls, whether learning can actually take place, always remains to a certain degree unpredictable. The question then is how digital media relate to such a state of affairs. Under the misleading label of *interactivity*, the possibilities for interaction between digital machinery and humans are *de facto* strongly pre-structured, more so than in any physical setting (Esposito, 1999). There appears to be little space left for unruliness when navigating the pre-established templates and algorithms of online learning modules: either you click and accept, or you refuse and run aground. Any room for the unforeseen events, unplanned interactions or feigning attention and even protest that typify life in classrooms seems to have vanished. Is there any territory left between the choice to accept or to be stranded, other than the domain of bugs, system errors and other technological deficiencies? And if the scope of the possible is thus limited to premade choices, can algorithms really help construct someone’s future life course? Or do they, on the contrary, risk closing off the future – and if so, how? One wonders how education can still fathom itself as a means for individual change, when there is so little remaining space for the pupil’s individuality. That is: when the opportunity for inner migration or overt deviance is reduced to absolute minima. Can self-learning artificial intelligence reintroduce enough variation and unpredictability to make human learning possible? Or will it serve to project the future again as unalterable, like a second Nature of sorts, much as its evolution in other domains seems to illustrate (Wang, 2018)? Answering these questions might help elucidate whether we are still dwelling in the aftermath of Koselleck’s (1979) *Sattelzeit*, where the future shapes the present. Or whether we are instead witnessing a slowly emerging counter-movement, with the proliferation of techniques that pre-emptively bind the future so that, at least for some people, they risk cancelling it.

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Notes

1. For a critical discussion of this way out, see Hellmann (2006).
2. “Eternity coming first is seen in God’s preceding all things,” writes Augustine (XII-IV.40).
3. Or its indeterminacy can appear, vice versa, as the always pending catastrophe, as an always imminent crisis (cf. Luhmann, 1984). In both cases – as one could summarise the bottom line of Luhmann’s sociological re-description – the expectation of discontinuity moves the anticipation of the future to the centre, since idly waiting, letting the future come as it comes, seems impossible. And that is why modern society, perhaps today more than ever, is increasingly dominated by the following preoccupation: “How can we cope with the unknown?” (Luhmann, 1993: 539).
4. On education’s temporality see Corsi (1998, 2020) and some of my recent publications (Decuypere and Vanden Broeck, 2020; Mangez and Vanden Broeck, 2020).
5. Locke’s (1693) *Some Thoughts Concerning Education*, for example, provides household advice to fathers on very mundane topics, ranging from air quality to goblin tales.
6. Distancing himself from the above-mentioned household advice, Rousseau laments in his *Letters Written from the Mountain* that he had a completely different intention: “It is a question of a new system of education the plan of which I offer to the examination of the wise, and not of a method for fathers and mothers, about which I never dreamed” (Rousseau, 1764: 211).
7. For an instructive discussion on the merits of Luhmann’s overall medium theory, see Esposito (2007). For the notion’s counter-intuitive application in the domain of education, see instead Luhmann’s and Corsi’s contributions to this special issue.
8. For an excellent, even if by no means exhaustive overview of the question of form in systems theory, see Baecker (1999).
9. Cf. Ackerman and Parsons (1966) and Luhmann (1995: 327–331) for a general elaboration; for the application of this theoretical scheme to the domain of education, see Luhmann (2002: 142–167) and Kurtz (2004b). I am much indebted to the latter for the typology of educational re-specifications used in the following pages.
10. The notion occupies a rather marginal position in its general framework, and a detailed overview of systems theory’s approach to professions would inevitably lead us off on too much of a tangent. I draw on the very concise synopsis that Luhmann gives in the posthumously published *Das Erziehungssystem der Gesellschaft* (2002: 147–153), as it fits the purpose of briefly outlining the frame of his sociology of education. For further elaborations of the systems theory approach to professions, cf. Stichweh (1992; 1994; 1997), Kurtz (2002; 2004a; 2011) and Vanderstraeten (2004; 2007a; 2007b).
11. Again, such a statement should not too quickly lead to the (false) conclusion that a profession “rules” its respective function system. Rather, “[i]ts function may be defined as ‘surviving failures’ (in the double sense of the English -ing form)”, Luhmann notes in an interview with David Sciulli (Sciulli, 1994: 60).
12. Cf. Corsi (1992: 283 n.20).
13. On the contrary, in the few passages dedicated to maintaining discipline in the classroom, Luhmann is quick to point out that the disciplining effect of school rests largely on the continuous, reciprocal

- observation between teacher and pupils and therefore provides the latter category as well with ample opportunity for provocation, disturbance and the often-neglected delight that those might bring to pupils (Luhmann, 2002: 103). For a further elaboration of the matter, see Schorr (1987).
14. In this regard one might note how many of Luhmann's sociological counter-arguments are developed not so much in debate with other sociological literature, but directly address (German) pedagogy as his preferred interlocutor. Witness the rather defiant subtitle, "Questions to pedagogy," of a series of publications Luhmann edited over the course of several years together with the German educationalist Karl-Eberhard Schorr. Rather often than not, Luhmann's writings on education had the not even thinly veiled intent to irritate the pedagogical debate into questioning its disciplinary axioms. Most dissonance between the two revolves around the place of the human subject, central in pedagogy, but dismissed to modern society's environment in his systems theory, as is well known. For a knowledgeable, if partisan, evaluation of systems theory's resonance within pedagogy, cf. Corsi (2000) or Baraldi and Corsi (2017: 103–106).
 15. Next and usually in contrast to formal instruction, Luhmann sporadically mentions family education. However, the latter is said not to have crystallised into a distinguishable system type (Luhmann, 2002:118). For a discussion of the wide variety of activities today understood as educational, see his contribution to this special issue.
 16. This remark gratefully draws on a generous suggestion made by one of the reviewers of this article.

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