

Niklas Luhmann: a systems view of education and school improvement

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Abstract

This paper focuses on one of the central aspects of educational theory and practice: self-reflection. The critical sociology of Niklas Luhmann is featured. Sufficient of his work is now available in translation to support an initial survey. The generality of Luhmann's work derives from an adaptation of Bertalanffy's General Systems Theory. The principal modification Luhmann makes is to incorporate Humberto Maturana and Francisco Varela's concept of autopoiesis. Luhmann makes communication the central feature of social life, and the bulk of his work has focussed on the forms of communication that exist within the 'function systems' of mass society. In terms of the Anglophone tradition of educational research, one aspect of this theorising is particularly significant: the centrality of human subjectivity for social analysis is radically questioned. Luhmann's critical perspective specifically targets the phenomena of self-reference and self-reflection in relation to the social effectiveness of the education system. He concludes that institutional improvement will continue to be elusive because of inherent instabilities in the processes of self-recognition.

Keywords: Autopoiesis, change, code, communication, functionality, Luhmann, organisation, self-reference, self-reflection, society, structure, system.

Introduction

Nearing the U.K. official retirement age as I am, I have probably seen and been involved in more attempts at school and institutional improvement than has been good for me. The sum total of my conclusions to date is that sometimes it works for a while, but sometimes we get it wrong, and children and adults suffer as a consequence. As to practice itself, some of the time it is pernicious in its adherence to theory, some of the time it makes endurable an unjust ideology, and some of the time it just muddles along. None of this seems very profound or revealing, and it is all the more depressing when one

recognises that we are now entering an era of massive, and to a degree, local school improvement.

In terms of research, part of the analytic problem one always faces is in knowing where to start – from amongst the heap of events, factors, and outcomes that either claim one's attention directly, or have been deemed significant by others. Size is important here, I think. For instance, once a government becomes involved in the financing of a nation's schools it is only a matter of time before some set of educational outcomes is popularly judged to be inadequate or unacceptable. Initially politicians may decide to leave choice at the local level. But recent history, both here and abroad, suggests that over time – probably as a consequence of the strengthening of national government itself (and the consequent increased viability of the mass media) – local solutions begin to seem inadequate. Critical public 'debate' fostered by the mass media, selective attempts to withhold the power of decision-making from one's political opponents, and recognition that the 'real' problems are too vast for 'local' means of solution, all combine to tempt those in authority to seize the reins.¹

To be more precise, what seems to have become an established rule in most 'developed' and many 'developing' countries is that the control of curricula, and the legislation of the conduct of teachers and their managers, has slipped away from the educational institutions themselves. In such situations exceptions become fascinating – particularly so when an entire national education system – having once been constructed along these lines – is then sent off to buck the trend; this being one reading of the prevailing education policy of the new Liberal-Conservative Coalition.² But, rather than 'agreeing with Nick', the theorist to be featured in this paper, Niklas Luhmann, has developed a way of theorising about the education system which suggests that such efforts will be plagued by a fundamental contradiction in its attempts to maintain and occasionally reform itself.³

But there is also a caveat to introduce here. Although Luhmann's work has spread a little light in my own head, I advance his case here with two reservations: his authorship is devoted to the re-vitalisation of sociology, not education; and his rather abstract delivery does not lend itself to quotations that can fit easily into the confines of a journal article. I have therefore made extensive use of a principal source for Luhmann's own ideas – the relatively compressed and more vivid writings of two South American cognitive

¹ The Thatcher era is usually identified here, e.g. the breaking up of the Inner London Education Authority, and the drive to ensure that Britain could compete with 'world class' design, technology, and science.

² At the time of writing, an adapted form of the Swedish 'Free School' movement, combined with massive expansion of the Academy designation, this despite the Liberal Democrats' preference for increased L.E.A. control and the Pupil Premium – no doubt a happy compromise will eventually be reached.

³ In the spirit of Mr. Clegg's Europeanism, one might paraphrase Luhmann's response with a slogan from the Paris of May, 1968: '*Pas de replâtrage, la structure est pourrie!* [No re-plastering, the building is rotten!].

scientists, Humberto Maturana and Francisco Varela (Maturana & Varela, 1980, 1987).

Systems talk

A casual survey of the educational books that I and my students should be keen to buy this year suggests that the following preoccupations in educational research are alive and well, at least in the minds of publishers and authors specialising in this field. We are exhorted to buy books attempting to illuminate the characteristics of language use in schools, to comprehend the meanings of educational texts and policies, to discover regularities in the dilemmas of educational practice, and to reflect on the experience of particular groups within schools, etc. As any reader of this journal will know, this 'etc.' conceals a very long tail; but to those who are too tired to face another 'illumination', or 'discover' anything more, Luhmann offers a refreshing prospect: all such approaches are methodologically unsound! Ok – joke – but so long as the human subject remains central to any of this theorising it is, in his view, misdirected.

His real target is sociology, as indicated above, rather than education. He argues that if sociology is to be about anything of consequence, then at the very least it should aim to theoretically reconstruct social complexity. Luhmann identifies communication as the essential symptom of this social complexity, said to take place between 'cognitive systems', i.e., between organisations whose social structures have developed for specialised forms of information interchange. So although Luhmann recognises that people constitute any organisation's social environment, his theorising emphasises the fact that it is our experience of these social structures which constitutes our own humanised environment. This inversion of foreground and background entails that the actions of individuals and their subjectivities become theoretically irrelevant to Luhmann's form of *sociological* analysis. In effect, he invites us to explore with him the 'ecology' of our social world.⁴

With the publication of *Soziale Systeme* in 1984 (published as *Social Systems in 1995*), Luhmann provided a general overview of the resulting theoretical position, and his subsequent work has been devoted to re-describing the

⁴ The accounts of society that Luhmann produces have their theoretical origin in Ludwig Bertalanffy's General Systems Theory. Bertalanffy's speculation entailed four steps: organicism – wholes are greater than their parts; 'open' systems – dynamic systems maintain their separate unities by material exchange with their environments; isomorphism – different systems display analogous functionalities; and hierarchy – systems may contain, and be contained in, other systems. This account of complexity was developed in the early years of the last century to describe interacting forms of biological homeostasis. The theory was then generalised by the cyberneticists of the Thirties and Forties as they wrestled with the very different forms of complexity they encountered while developing the electro-mechanical devices which featured so prominently in the Second World War. After that war, the demonstrable successes of a systems approach prompted many in the humanities to also experiment with its theoretical perspectives, and amongst them was the sociologist, Talcot Parsons. Although Parson's attempts to apply systems theory to institutional organisation were rather half-hearted, they were sufficiently explicit to influence Luhmann during a short studentship he spent with Parsons.

principal institutions associated with the domains of social experience (Luhmann, 1995).⁵ In each case, Luhmann transcribes our familiar recognition of institutionalised forms of living into systems for mass communication capable of maintaining more or less permanent 'structural couplings' with selective informational features of their local social environments. This 'coupling' feature refers to recurrent communicative relationships between a system and its environment which ultimately may result in structural change to both, since these relationships are always understood to be reciprocal, i.e., as the system adapts to particular recurrent perturbations in its environment, these changes in its nature affect the nature of the environment itself, resulting in the development of environmental 'niches' – local environments conducive to further development along the same lines. The complex social systems Luhmann describes in *Social Systems* and in his other publications nearly always possess some degree of organisational plasticity which allows them to 'drift' towards greater congruency with respect to such recurrent perturbations that occur *if* they are significant for the system's survival – equally, if the perturbations are beyond the powers of the system to adapt, it collapses.⁶ In *Social Systems*, Luhmann himself describes this form of coupling as 'productive' and 'second-order' – distinguishing it from any changes to the 'first-order' coupling that the system may need in order to maintain itself, i.e., 'perturbations' taking place between sub-systems.

To put some educational flesh on the bones of this terminology, one could describe a school's governing body as seeking to 'productively' reduce the relative independence of its Parent Teacher Association (P.T.A). in order to avoid the publication of extremist evaluations of its own actions. This second order coupling attempt might be compared with a decision to replace a large open-plan area with three separate classrooms. Such a change of use would probably be judged, at least in the first instance, as a 'professional' matter, i.e., a first-order re-coupling. In emphasising communication, the radical shift in the focus of Luhmann's sociology – post *Soziale Systeme* – draws attention to aspects of social action that are sometimes ignored. The principle characteristic of communication is identified as *selection* – meaning is, therefore, always 'emergent'. Every communication results from the co-ordination of three components, each of which involves a separate selective act. These are: information itself – that which is selected from a repertoire of possible understandings and actualised in communication; utterance – the selection of a means to express and convey the selected information; and reciprocal understanding – where a further selection is made arising from the distinction between the construal of information and its utterance. In the case of our governing body, it will have to decide when to declare its intention to

⁵ Note that Luhmann's approach, although different from Foucault's 'genealogical' method of study, does not exclude historical perspectives from his explanations. However, from the point of view of an autopoietic system, i.e., one that is self-maintaining, if the past is to have any significance for the system's survival, its nature must be continually re-created.

⁶ The two quoted terms, 'drift' and 'perturbation', and the later use of 'trigger', come from Maturana and Varela's work; these concepts are given more varied forms of application and explanation within Luhmann's own writings.

create three separate classrooms, how best to convey this information to the various interested parties affected by the decision, and – if it has any political sense – anticipate their likely objections. If it is successful in this, its social niche will, of course, have become more comfortably feathered.

It must be clear from this illustration that a Luhmann-inspired account of how a system makes its decisions can sound very much like the way that one might equally describe the decision-making of an individual; but one has to remember that individual's are theoretically irrelevant! In fact, this potential for confusion is often intriguing, for instance, how does one know that what one says is one's own speech? Luhmann's answer to its system equivalent, as developed in *Social Systems*, is to indicate that each of the major forms of social organisation gain their distinctiveness through self-referential (autopoietic) information processing.⁷ One half of this self-reference entails a capacity to find certain aspects of the totality of the social world productive of meaning, i.e., containing 'perturbations' that can be construed by the system as constituting relevant information, while the other half involves the reproduction of its identity through every communicative act it engages in. Here, it is not so much the idea of every system communication carrying a brand image or institutional logo, rather it is the capacity of each act of communication to be organised by the system so as to contribute to the maintenance and continuity of the system's own viability.⁸ For an autopoietic system, responding to changes in the environment is never simply *determined*; its autopoiesis cuts in every time so that both the recognition of the change as meaningful, and the formulation of its response, are conducted *in system terms alone*. Expressing the same idea from a systems perspective: in every case, what is 'triggered' by an external event is self-generated meaning and self-generated (self-regarding, self-conserving) action.⁹

This self-closure entails that an 'external' view of communication appears paradoxical, e.g. applying Shannon's basic model (discussed in Shannon, 1948), *a sender can never send anything directly 'into' such a system unchanged, and a receiver can never take anything directly 'out' without change; the system will never allow anything to be directly transmitted 'through' it!* The paradox is resolved once one considers a concrete example such as the postal service. While senders in the larger system of society may wish to impart meaningful communications to others, and receivers receive in

⁷ This is opposition to other basic units which have been proposed by social theoreticians for this role: exchange, action, or power. Cf. Foucault's three pairings defining the conceptual 'space' occupied by the sciences of Man in the Modern era: function and norm, conflict and rule, signification and system (Foucault, 1970: 357).

⁸ Luhmann refers to the 'function systems' of society, such as education, medicine, and the law, as being organised in relation to the identification and manipulation of a social 'positivity' or 'negativity', e.g. ignorance, illness, and illegality or, in the case of a mass media news service, newness (of information).

⁹ Luhmann radically departs from most sociologists in this, such as Durkheim, Parsons, and Bourdieu, since he argues that the differentiated functionality of a social system is *not* the product of some teleologically conceived social utility that the system 'offers' to society or some section of it, and neither is its output simply what society 'mandates' from it.

kind, from the perspective of the postal system itself such intentions and expectations are literally *insignificant*. The only 'meaning' to be extracted (selected) from the complexity of its external environment are signs (recurrent significant perturbations) which indicate that what is to be handled is material in nature, is paid for, and is appropriately addressed and enclosed. In other words, the post system facilitates interpersonal communication by insisting that all communications are transformed into system-entities meaningful to its own operations.¹⁰

An educational equivalent to this can be seen in the decision-making processes of a typical county museum service. The starting point might be the observation that its specialised forms of imagery are appropriated by the county's educational establishments on a regular and casual basis. But inside each museum a unique acquisition code is used both to register those artefacts it holds and to incorporate any new ones it acquires. Surprisingly, perhaps, the complicating issue of public display introduces no significant variations into this process. Such matters are instead dealt with *via* the second-order structural coupling that the system maintains between itself and its social environment. Almost every museum 'policies' any interaction between those who select its artefacts for display (and in some cases, distribution), and the general public. Even though public representatives may be involved in making 'community' or 'educational' selections, their special designations mark the exceptions being made to a prevailing norm, as does the internal designation of the museum 'community' or 'education' officer, i.e., a 'gatekeeper' whose task is to maintain a specific first order coupling between the reserve collection and what is placed in the galleries.

In sum, while museum designers may work to enhance a public's appreciation of context, and museum enactors may dance around in an effort to add 'realism' to the experiences on offer, the totality of structural couplings maintained by the museum continue to arise from an *internally generated* conception of public need and public duty; i.e., through self-referential expression. And note also how in this style of analysis the specialised communications of this differentiated system constitute, in the main, a writing – a text – rather than just direct utterances. For instance, when a museum has to deal with new restrictions being placed on the handling and presentation of human remains, one assumes that various policy statements and directives will be involved and that one can describe with some accuracy the various centres for information interchange involved. This is in opposition to trying to track down instances of direct 'telling' to the system's relevant operatives. In terms of research methodology, therefore, such an approach tends to undercut the central paradigm of ethnographic study, since the principal task now is to characterise *system* operations, rather than the often ambivalent responses of operatives who also happen to be people burdened

¹⁰ As one recognises in the U.K., it is the present national system's failure to encompass more flexible forms of structural coupling that has led to some observers describing it as rigid and inefficient. Luhmann, however, stresses that there is no 'outside' which is not already within some other system; the status of the supposedly neutral observer is always compromised by system affiliation and, at least in research, this should be declared from the outset.

with confusing subjectivities. But they are, of course, also cognitive systems – so how might they be located in a Luhmann-inspired social description?

System topics

An answer to this question is best developed by way of an easy misunderstanding. In the earlier example of the governing body, a decision to split the school's open-plan area into three separate classrooms had eventually to be communicated to the outside world. In *The Reality of the Mass Media*, Luhmann distinguishes face-to-face communications by the tight, recursive checks on understanding typically featured: whatever is uttered by one interlocutor is immediately subject to recognition and possible modification by the other – an initial act of communication necessitates another, and so on. For a museum, school, or any other institution, 'boundary' conditions prevent such forms of immediate monitoring of the nature of response, not the least reason for this being that typically these systems address a mass rather than an individual.¹¹ Museums, therefore, like broadcast news services and schools, respond to the recognised perturbations involved in the second order structural couplings they maintain by developing a range of *topics*; and these are never 'neutral', instead as system acts they constitute self-serving operations relative to what might be called the museum's sense of 'self'. But in general, if the system's survival entails adaptation to a complex social world, then unitary self-reference will always be subject to compromise because of this diversity. For instance, a large Secondary School will come to depend on a number of differentiated self-summaries – 'self-portraits' which it deploys in relation to its conception of what each sector of its audience (source of specific perturbation) expects if structural coupling is to be maintained – compare, for instance, the typical narrative intended for potential parents with that intended for the pre-inspection Self Evaluation Form.¹²

¹¹ Michel Serres provides a vivid characterisation of this, '... this demarcation consists, curiously, of three layers. The interior one protects each inhabitant with its softness, the exterior one threatens all invaders with its resistance, while the middle one is interrupted by gaps, passages, doors, or porosities by which ... various living or material things enter, worm their way in, leave, cross, attack, wait without hope ...' (Serres, 2008 : 45; my trans.).

¹² The interaction of mass-marketed news services offer parallel sources of illustration of just how dynamic this phenomenon can be. For each newspaper topic selection is essential for its unique survival strategy: the newspaper must continue to produce 'news', but of a particular sort. It also follows from this that the more a topic is accepted by a public as a source of on-going concern and fascination, e.g. child abuse, the more likely it is that structural 'drift' will occur so that the system can increasingly base its survival around elaborations of, and extensions to, this same topic, e.g., *The News of the World's* naming-and-shaming policy in relation to paedophilia. Will the assumed freeing up of curricula lead schools into this kind of world? Consider another example: the furore surrounding the introduction of Mr Nick Griffin, Leader of the British National Party, to the BBC's 'Question Time' panel just before the election. Here, one saw an institution commenting (extensively) on its own processes of topic selection, and presenting such reflections as both 'news' and evidence of its trademark 'impartiality'. Brilliantly, this self-serving conjunction of institutional praxis and self-representation was parodied the following week in *Private Eye*, (London: Pressdram Ltd., no. 1248, Oct. 30th – Nov. 12th. p. 18; is this an indication of how inter-school system communication might develop?

Resisting flexibility threatens the survival of any system in a changing world, and this perception leads straight to a familiar example: the National Curriculum (N. C.); a central mechanism of the education system forcefully incorporated some twenty years ago. During the many years during which its legislation was judged to tie the policy arm of the executive, the system's overall capacity to generate new versions of what it is to be educated – to 'drift' and so adapt to social change – has been reduced. This stasis imposed upon a system that by many accounts has always needed a measure of social dynamism (capacity to drift) has resulted in embarrassments for successive Secretaries of State – and more especially since the last Government's espousal of 'evidence-based' policy. The most recent hilarious but also dismaying come-uppance came when the last Secretary of State was confronted by the many research confirmations identified in the final report of the *Cambridge Primary Review* in December, 2009; his reluctance to endorse the policy implications of many of its conclusions was all part of the same piece.¹³

The underpinnings of this process of topic selection are complex, as the above example suggests, but they are also critical for any research programme working within Luhmann's sociological framework post-publication of *Soziale Systeme*. He invokes Kant's theory of knowledge, as developed in *The Critique of Pure Reason*, when he describes there being system-specific 'permissions' for generating the particular kinds of information that the system relies on for its continued viability. Like Kantian schemata, they, "are not images but rather rules for accomplishing operations. The circle schema, for example, is not the depiction of any circle, but the rule for drawing a circle." (Luhmann, 2000: 109).¹⁴ So, it is not simply the generation of information that is important, but also the ways in which the system's various information-forms are spatially and temporally actualised – both within the system and at its boundaries with the rest of the social world.¹⁵

Strictly speaking, the National Curriculum is a transmission code – a formal mode of expression, i.e., a grammar. Within schools following this curriculum, a teacher's knowledge cannot be conveyed unless it is first translated into the modes of expression that the National Curriculum permits. Initially at least,

¹³ An historical overview by Professor Robin Alexander is available at http://www.robinalexander.org.uk/docs/Dear_Prime_Minister.pdf

Many readers will also be aware of his overview for the final report of the *Cambridge Primary Review* itself (Hofkins & Northern, 2009). It will be interesting to see if Michael Gove, as the education system's prime operative, dares to initiate a turn away from this central pillar of its present construction.

¹⁴ Kantian schemas are derived from the categories of understanding, and act as procedural rules for the imagination, allowing it to construct 'image-models' when summoned to do so when perceiving or reflecting – see *Critique of Pure Reason*, A 140.

¹⁵ Luhmann draws a distinction between a system's organisation, which is a description of the relationships that exists between its various components; and its structure, which is a particular embodiment of this organisational configuration. In the case of the mail service – as we are currently experiencing in the U.K. – there are a number of ways in which the same basic organisation of a mail service can be structurally embodied, and each of these will have its own 'ontology'.

this grammar was prescriptive, i.e., it embodied an 'external' adjudication of correct or incorrect usage.¹⁶ But opposed to prescriptive grammars are those which are termed 'descriptive' and 'internal', i.e., actual grammars of use – the slang, the local dialect, etc., and it is these which a prescriptive grammar tries to control; and it is, of course, also a form of parasitism. There are variously contested and elided accounts of Margaret Thatcher's dispute with Kenneth Baker over the scope of the planned National Curriculum – particularly at Secondary level; she would have preferred it to be restricted to just mathematics, English, and science.¹⁷ If such a limited policy had been followed through by Baker it would have precipitated autopoietic changes within many schools, but it would have had nothing like the impact of the actual National Curriculum as defined by the 1988 Act. In Luhmann's terms, then, Baker decided that 'his' curriculum should serve as a revised descriptive grammar for the entire pre-examination structure of schooling, replacing all variants of the system's existing descriptive (school-based) and prescriptive (Local Education Authority -based) grammars in such a way as to precipitate the replacement of all internal codes with its own set of 'permissions' for curriculum content, progression, assessment, etc. In effect, the Primary education system was subjected to the enforced injection of a life-threatening virus, or (to be more positive) radical gene therapy!

And so to people – the individual teachers, lecturers, pupils and students who also happen to inhabit the various institutions of the education system. Luhmann's research frame, as described so far, might lead one to think that the structural forms – topics – 'permitted' by the institutions of law, politics, religion, and education are different in kind from those related to transport and supermarket vending; but just what are these topics, if not judgements, policies, *ex cathedra* pronouncements, and curricula? Clearly, the 'topics' sustained by these institutions correspond to sets of communications built around idealised (system determined) descriptions of the kinds of people which they 'permit' to exist 'within' themselves as 'operatives': the politician, the student, the believer, etc. Furthermore, each system's 'grammar' allows for the kinds of distinctions we are all used to: between the lawyer and the criminal, and the teacher and the student – and all of these have no real inter-human substance, serving only the reproduction of their respective systems

¹⁶ This implies that over the years since its introduction the education system (and its sub-systems – the schools, etc.) has progressively internalised the National Curriculum – but one must be careful. Perhaps what has been 'internalised' is a hybrid code – a set of quasi-formal curriculum practices that have 'humanised' the National Curriculum through the partial retention within many institutions of a pre-existing but equally prescriptive grammar of professional 'care'.

¹⁷ Trying to establish an exact date for this dispute is difficult, since the available memoirs do not agree. What is clear is that prior to the publication of the Great Education Reform Bill in October 1987 Baker had already defied Thatcher's wishes by refusing to reduce the number of curriculum areas. The dispute itself is generally reckoned to have become public at the annual conference of Secondary Heads, held at Reading in May 1988, before the August publication of the Bill; Baker being forced to defend the percentage of pupil time devoted to the National Curriculum. See Mike Baker's report and overview of the 14th. April, 2009, 'Tide turns towards trusting teachers' – available at BBC Online at <http://www.mikebakereducation.co.uk/?articles=view&id=48>

and system topics.¹⁸ But in the posthumously produced and still un-translated account of 2002, *Das Erziehungssystem der Gesellschaft (The Development System of Society)*, Luhmann invokes the cognitive autopoiesis of individuals to produce a full-blooded endorsement of human freedom – one which is *not* determined by the various forms of functional production that social systems sustain. He argues that the exclusion of people from the autopoiesis of social systems allows human action to be understood as both more complex and more unpredictable than would otherwise be the case. For example, a Higher Education college might aspire to produce a particular range of graduates as its system images or topics, but as individuals, each student would always live in a dimension of freedom which subtended such dreams of institutional productivity.

In an earlier joint publication produced with Karl Schorr, *Problems of Reflection in the System of Education*, Luhmann argued that any congruence achieved between a social system's communications and acts of individual human cognition was bound to be ephemeral (Luhmann & Schorr, 2000). For the individual, congruency of meaning was labile; s/he could always think of something else. This same contingency led the authors to comment critically on the often grandiloquent claims made by educational institutions, particularly in relation to their capacity to inculcate wider social ideals. The transience and instability of communication between education system and individual could never result in faultless transfers of knowledge – or of social norms and values being automatically 'internalised'. All that could be hoped for was that the *psychological* development of the individual would eventually become structurally coupled to a social environment with which they could autopoietically interact.¹⁹ In *Social Systems*, Luhmann makes essentially the same point, but the education system is now said to be incapable of avoiding the consequences of the self-organising operations of the cognitive systems it deals with (pupils, students).²⁰ The functional distinctiveness of the education system – said to be a reliance on extensive face-to-face communication as a means to monitor and attempt the regulation of individual development is insufficient to the tasks it sets itself. Education is allied to therapy, and Luhmann draws attention to the extended and layered expectations for communicative competence typical of these systems. He describes the compliance of pupils and students as being continually evaluated against the expectations supposedly communicated to pupils/students by streaming, by written comments, and by their reaction to testing of various kinds. However, people do not have to act like slaves or robots, even wilful ones.

¹⁸ Enter, of course, the Michel Foucault of *Discipline and Punish* (Foucault, 1977), but for a stomping feminist approach to the same scenario, Donna Haraway's 'A Cyborg Manifesto', first published in the Eighties, is hard to beat; available in re-edited form (Haraway, 1991) and at <http://www.stanford.edu/dept/HPS/Haraway/CyborgManifesto.html>

¹⁹ Since the start of state funding in most countries, education systems have been exhorted to guarantee certain outcomes. In Luhmann and Schorr's view this has always resulted in the systems over-reaching their communicative competence and suffering pernicious simplifications of their actions (and so to self-representations) in order to be seen to succeed.

²⁰ The identification of pupils and students follows Luhmann's critique, but of course this can include any and all of the system's disenchanting educators and educational managers

School improvement and system self-recognition

From Luhmann's perspective, this same distinction between the individual and the operative lies at the heart of the education system's difficulties in improving its own effectiveness.²¹ In fact, the contrast he draws with the other principal function systems of society is sometimes stark. For instance, Luhmann describes the economic domain in a capitalistic society as being a system which possesses a fully integrated symbolic code – one that is used in all its transactions, i.e., the system is fully monetarised. In contrast, the education system is said to be incapable of controlling the consequences of its own 'topic' expressions. This stems from the fact that there is nothing which can serve as both an integrating and a fixed basis for an equivalent symbolic code – the system may deal with children, but the system is dedicated to changing them! In the earlier discussion of the National Curriculum there was the suggestion that perhaps what was once a prescriptive grammar might have developed into an internal, descriptive one that could account for what it was that schools did, but Luhmann's analysis is less optimistic.

The question is, how can an autopoietic system 'improve' itself if it does not have a consistent set of permissions – a unifying process code that is capable of co-ordinating the operations of the system as a whole and of its various sub-components? From a Luhmann/Maturana perspective there can be only one type of answer: by increasing the survival value of its various forms of social coupling so that the system's structural drift is optimally matched to those environmental perturbations which are significant for its survival and reproduction. There are two corollaries to this, the first being the Darwinian one that evolution is both local and purposeless – so long as survival and reproduction can continue the system will drift where it is opportune for it to do so. Therefore, characterising 'life forms' as being either 'higher' or 'lower' can only be a product (perturbation) of an observation (a coupling response?) by another system operating according to its own autopoiesis. The second corollary raises a new, but fundamental question – Can the education system know itself well enough to self-improve – does it have a comprehensive epistemology of self?

According to Luhmann, the functionality of a system entails three forms of self-reference, and of these it is the 'reflective' form which is relevant here.²²

²¹ Adam Phillips provides a nuanced meditation on the distinction between being schooled and becoming educated for living – see his 'Learning to Live' (Phillips, 2006: 135-160). It is interesting to compare this with what is currently said about individual self-reflective practice – see the ERIC digest at <http://www.ericdigests.org/2001-3/reflective.htm> – and its institutional equivalent – see, for instance, Watson and Maddison's *Managing Institutional Self Study* (Watson & Maddison, 2005).

²² Self-reference is said to be 'basal' when a distinction is made between an element's operations and the various functional relationships it may have with other elements; it is 'reflexive' when a temporal distinction is made, i.e., a communication emerges as before/after differences (events) are recognised

For knowledge of this kind to exist *within* the system the 'external' functional differences and transactions conducted between it and its environment must be transformed into an 'internal' distinction between self-reference and other-reference. As Luhmann explains, "*this distinction between self-reference and other-reference cannot exist in the system's environment (what would be 'self' here, and what would be 'other'?), but rather only within the system itself*" (Luhmann, 2000: 5). So although all forms of self-reference correspond to the complexity of the world seen from the system's perspective, none of them can depict the 'real' environment since "[t]he environment is the system's *ground*, and a ground is always *without form*." (Luhmann, 1995: 444). For the system, then, "the world is not an object but is rather a horizon, in the phenomenological sense, i.e., it is inaccessible" (Luhmann, 2000: 6).²³ Therefore, if self-improvement is to come from anywhere, it must come from within the system itself. Assuming symbolic integration, two additional system features are essential for this to continue: a capacity for unitary self-description relative to a conjectured environment; and a related capacity to develop unitary self-descriptions of process so that communication about sub-components is possible. Ideally, then, the same code will comprehend this functional division (as it does within the financial system).

The last chapter of *The Development System of Society* takes analysis of the actual situation in the education system further when it features an extended treatment of the German system's epistemology – one that was initially adopted for political reasons back in the beginning of the Nineteenth Century, i.e., here is another example of an imposed prescriptive grammar, but in this case it has been one that always has been much more obviously focussed on an ideal of *individual* growth – the concept of self-construction - of *Bildung*.²⁴ For the non-German reader, the penultimate chapter of *Social Systems* features a discussion of *Bildung*, which is characterised by Luhmann as a significantly flawed self-figuration. Luhmann stresses the point made above that although the education system is driven to achieve success in communication, its communications cluster around practices, theories, and prescriptions for bringing about change in people's lives – particularly those of children. As we have seen, Luhmann considers the actual being of people to offer too transient and variable a range of phenomena to provide the basis for any system's code. This, however, is precisely what the metaphor of *Bildung*

by interlocutors; and it is 'self-reflective' when a distinction is made between the system as a whole and its environment.

²³ Luhmann describes this as being 'empirical', rather than transcendental in the Kantian sense. The distinction between an organism's genotype and its phenotype may be helpful in making sense of this rather Delphic distinction: the organism's phenotype is a more or less faithful embodiment or expression of its genetic code. The genotype creates various 'permissions' that are realised in the phenotype's interactions with its environment, but all the genotype can do is code for certain sensory and locomotive possibilities which have in the past been found conducive to the organism's survival, i.e., all that the organism can 'know' of its environment is internally determined before birth.

²⁴ *Bildung* remains central to understanding academic and political debate about education within Germany, even though it is now widely considered to be conceptually bankrupt. Readers may find the following articles useful in relation to tracking the multiple meanings of the term, with Michael Wimmer providing a contemporary overview at [Ruins of Bildung in a Knowledge Society- Commenting on the debate ...](#) while Paolo Giacomini offers a more detailed historical account featuring the influential perspective of von Humboldt at <http://www.bu.edu/wcp/Papers/Mode/ModeGiac.htm>.
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insists upon: a belief that the system can identify *individual* educational 'origins' and confer *individual* forms of perfectability. As an attempt at unitary self-description, therefore, this self-imaging is constantly subverted by the individual specificities, i.e. the 'realities', of the multitude of communicative transactions it supposedly sanctions in classrooms and in teacher-pupil dialogue. Luhmann identifies some grounds for hope when he draws attention to the emergence of *reflexive* self-reference in general: in learning something one learns to learn well: when "pupils are made to learn, they also learn the capacities necessary for learning" (Luhmann, 1995 :464). He adds, "[i]n the same sense, or so one hopes, teaching could be turned into a method, so that it as well can learn in its practice from mistakes and improve itself" (Luhmann, 1995 :464). But this capacity for temporal self-reference is not in itself capable of sustaining a fully self-reflective system image: *Bildung*, instead, lends itself to "exaggeration and hypostatization" (Luhmann, 1995 :464).

The point of this analysis must by now be clear: given a public assumption that education entails social progressivism, there is no 'natural code' available that can overcome the fact that the system's only available 'object' for an integrated symbolic code is inconstant in nature. The process of school (or teacher as operative) self-improvement stalls before it can start.²⁵ In this respect the German metaphorical prescription of curriculum built around the individual stands exactly on a par with the U.K. one of fragmented subjects and universally staged descriptions of privileged disciplines. From the point of view of research, the various schemata of the education system, particularly within its many sub-systems (individual schools and colleges), will continue to employ a mixture of local descriptive but 'illegitimate' self-reflective figurations alongside 'legitimate' but more prescriptive national ones. No doubt as the Academies and Free Schools begin to spread across the land there will be many new and old 'common-sense' nostrums (prescriptive grammars) offered as solutions to their on-going dilemmas of practice, and some, of course, will be self-developed. In this situation it would be far better if Mr. Gove knew the devil he faced, but the actual situation of the education system is, at least according to Luhmann, that its peculiar 'devils' have many faces, and they just keep on and on changing.

²⁵ Not wishing be too gloomy, clearly local changes relative to some local set of problems will take place, and in Luhmann's ecological sense the situation for that school will have improved, i.e., a stronger form of social coupling will have been developed or a weakening one will have been maintained or restored. However, this is a far cry from the notion that simply by reference to some universal and unified code – accurately simplified to an appropriate self-reflective image – the institution or the operative will be able to boot-strap itself up to education's broad and sunlit uplands.

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