

The nature of the university

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Abstract Higher education research frequently refers to the complex external conditions that give our old-fashioned universities a good reason to change. The underlying theoretical assumption of such framing is that organizations are open systems. This paper presents an alternative view, derived from the theory of social systems autopoiesis. It proposes that organizations, being open systems, are yet operationally closed, as all their activities and interactions with the environment are aspects of just one process: the recursive production of themselves, according to a pattern of their own identity. It is their identity that captures exactly what can and what cannot be sustained in their continuous self-production. Examining the organizational identity of universities within the theoretical framework of autopoiesis may hence shed new light on their resistance to change, explaining it as a systemic and social phenomenon, rather than an individual and psychological one. Since all processes of an autopoietic system are processes of its self-production, this paper argues that in the case of traditional European universities, the identity consists in the intertwining of only two processes: (1) introducing continuous change in the scope of scientific knowledge and (2) educating new generations of scholars, who will carry on this activity. This surprisingly leaves at the wayside seemingly the most obvious ‘use of the university’: the adequate education of students for the job market.

Keywords European university · Traditional university · Social system · Autopoiesis · Organizational identity · Resistance to change

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We tend to focus on ‘the uses of the university’ (Kerr 1982), aiming to enhance them. Such an attitude, rooted in a functionalist understanding of human organizations, presupposes that they are entities deeply embedded in the larger socioeconomic reality they operate in. A thesis taken for granted in organization research claims that organizations are *open systems* (von Bertalanffy 1968; Ackoff 1971): busy with the constant exchange with their environment as their survival depends on their continuous re-adaptation to it. Faith in the efficacy of today’s higher education reforms seems to hold on to that picture. We use the words ‘demand,’ ‘pressure,’ ‘regulation,’ and so forth, to describe complex external conditions that give our old-fashioned universities good reasons to change.

In this paper, I would like to present an alternative perspective—a view that draws into question the sustainability of even the seemingly most basic ‘use of the university’: the adequate education of students for the job market. I shall derive this approach from recent developments in general systems theory, as contributed in the late twentieth century by Humberto Maturana and Francesco Varela (Maturana 2002, 2010; Maturana and Varela 2010) and transferred into the social domain by Luhmann (1986, 1990a, b, 1995, 2000, 2009). According to the theory of autopoietic systems employed here, living (biological) and social systems—including human organizations—are open and *do* interact with their environment, but are also *operationally closed*, having subordinated all such interactions to a key internal process, named ‘autopoiesis’ (gr. self-production). On a simplified account, this process consists of the continuous self-production of the system, according to a blueprint—its identity—that emerges instantly at the moment of the system’s inception (Seidl 2004, 2005, 2009; Seidl and Becker 2006; Magalhães and Sanchez 2009). This concept sheds a new light on the logic of all its interactions: They are not guided by the system’s pursuit of a harmonious agreement with what is currently expected of it in the larger context, nor are they an outcome of its chaotic stockpiling of all the resources that happen to be available in the environment. The system–environment interaction takes place in a way and to a degree that allows just that: the system’s recursive reproduction of its core pattern under ever-changing conditions.

Whether or not human organizations *are indeed* autopoietic can be, of course, disputed. And even if we agreed to think of them as such, it may be questioned whether public universities are *organizations* in that sense, and not just somewhat organized stations, orchestrated by other societal systems in operation. Regarding the first controversy, this paper will not solve it. It will accept as its basic assumption Luhmann’s view that human organizations are autopoietic systems, leaving the evaluation of both the theory and its use to the reader. Within the latter dilemma, I consider public universities to be organizations par excellence. Their embeddedness into other systems is unproblematic because being an organization in the relevant sense does not entail or require that they do not participate in any ‘larger’ systems, nor, for that matter, that they themselves do not consist of any ‘smaller’ ones. In fact, national and international systems of higher education, the system of science, each scientific discipline, institutes, departments, research centers, chairs, and project teams are all autopoietic social systems as well. However, by analogy, the autopoietic nature of the nervous system does not negate the similarly autopoietic nature of the entire organism, nor of an individual nerve cell. This has been made clear both for systems biology (Maturana and Varela 2010) and for the social sciences (Luhmann 1995).

The idea of universities being not only open, but also autopoietic systems, invites having a closer look at the blueprint that is being reproduced in their ongoing activity of self-production. If, indeed, such blueprints capture what can and what cannot be sustained by each particular social system, gaining a good understanding of this dynamics might be of far-reaching consequences for policies directed at reforming higher education

institutions. This paper offers a generic conceptualization of an autopoietic identity embodied by universities that subscribe to the oldest European tradition—commenced in 1088 in Bologna, and restored by Wilhelm von Humboldt in 1810. If such a consideration proves meaningful, parallel trains of thought might be extended to other prevailing models.

The concept of the autopoietic organizational identity

For Luhmann (1995), social systems are abstract and based on meanings. He proposed that whereas biological systems self-produce through organic processes, psychic systems do so through the processes of thinking, and social systems—through the processes of communication. The latter are not composed of living organisms (people) and spatiotemporal acts of interaction between them, but of *meanings* that emerge and are being sustained through such interactions. It follows that in the case of social systems, the autopoietic *organizational closure* should not be understood as a boundary between networks of human interactions. The closure takes place within the sphere of meanings, which are being produced in a system. Meanings are the products of distinctions: selections of what is being indicated from what is not. The continuous existence of social systems relies on such repetitive, recursive differentiations that arise from previous differentiations and is followed by subsequent ones. Whenever someone joins an organization, complains about it, acts on behalf of it, evaluates its functioning, or leaves it (which are all acts of communication), the fundamental distinction between the organization and the rest of the world is being recreated. As long as there are people who are willing to play the game—and know how to play it—the organizational closure of meanings is maintained. Further distinctions can only follow from here; the system *exists*.

To be able to play the game of a system, one needs to observe the distinctions that shape its *identity*. Seidl (2005), who took up the task of defining organizational identity on the grounds of the theory of autopoietic social systems, proposes that the identity of an organization is a joint construct of its *self-observation* and *self-description*. The former is a cognitive activity, immanently woven into the process of the autopoietic self-production of the system. It is an activity that enables this process, because each operation of the system calls for a choice between an option that belongs to its way of self-organizing, and one that does not: a differentiation between the self and the not-self. Hence, it requires the presence of both behavioral options in the cognitive structure of the system, as well as the presence of a pattern to which both may be put in relation in order to make the decision. Self-observations are communicative events: They implicitly inform about the pattern of organizational identity, by way of the operational choices taken. The self-description, in turn, is an explicit message, collaboratively created by the members of an organization on the basis of the system's self-observations, which they witness, participate in, or are told about.

Understanding the concept of organizational identity through the framework of autopoietic theory, as presented by Seidl, does not differ too much from the approaches most frequently invoked in organization research. A widely accepted definition by Albert and Whetten (1985) says that the organizational identity includes those characteristics of an organization, as presented by its members, which (1) are considered by them to be crucial to its character, (2) define the difference between this organization and others, and (3) turn out to be largely permanent through time. Newer approaches likewise place the identity within the sphere of perceptions, however, balancing the self-perception of an organization with its image as it is fed back by the environment, e.g., for Hatch and Schultz (2002),

identity is the result of a dynamic interaction between the aspects that are internal, i.e., organizational culture, with the ones that make up an organization's external image. For Czarniawska-Joerges (1997), identity is not as much a characteristic or quality of the organization, as the story that creates the organization—its narrative. The autopoietic identity described by Seidl accommodates all three aspects of the definition coined by Albert and Whetten and—like on Czarniawska-Joerges' account—refers the entire concept to the sphere of communication. Resembling Hatch and Schultz in his understanding, Seidl presents organizational identity as the effect of a dynamic interaction between its two components: one immanent, internal, and the other descriptive. Compared to Hatch and Schultz's account, the difference consists only in shifting both of these components into the inner orbit of the organization. Thus, the autopoietic approach does not revolutionize the common understanding of what an organizational identity is. What it does make much more evident, however, is an explanation as to why the self-description of an organization usually goes back to its very beginning. What is at issue is not just browsing back in search for those characteristics of an organization which, as in Albert and Whetten's definition, turn out to persist through time. Of fundamental importance are the unique characteristics, dynamics, and axiology of its foundational moment.

The blueprint emerges: the foundational moment of an organization

As Luhmann (2009, 155) explains, 'A system is either autopoietic or not autopoietic. It cannot be a little bit autopoietic.' If this is the case, then as soon as an autopoietic system arises, it is already autopoietic. This means that its self-observation begins instantly, and the self-production immediately assimilates content consistent with what the organization can observe about itself. The above is pointed out by J. Richard Hackman (1990), albeit employing a different research paradigm and focusing on teams rather than entire organizations:

In 1990 I edited a collection of essays by colleagues who had studied teams performing diverse tasks in 27 organizations—everything from a children's theater company to a mental-health-treatment team to a beer-sales-and-delivery team. In those studies, we found that the things that happen the first time a group meets strongly affect how the group operates throughout its entire life. Indeed, the first few minutes of the start of any social system are the most important because they establish not only where the group is going but also what the relationship will be between the team leader and the group, and what basic norms of conduct will be expected and enforced. (Hackman and Coutu 2009)

Arthur L. Stinchcombe (1965, 143) wrote that there exists a 'correlation between the time in history that a particular type of organization was invented and the social structure of that type which exists at the present time.' The theory of autopoiesis provides a clear explanation as to why this happens: Initial self-observations, along with the self-description formulated on their basis, construct the organizational identity, and it in turn comes to serve as a matrix, pattern, and rule for all subsequent processes of the organization's self-production.

What is embraced at the foundational moment is perpetuated as long as the organization lasts, should it even be for centuries. The investigation of the organizational identity of traditional European universities requires, then, a travel back in time, to their very beginnings. In the higher education research field, 'in which the path-dependent character of organizational structures is downplayed, while new concepts and models, which seem to

flow across organizational boundaries, are celebrated' (Krücken 2003, 334), with so many and diverse transformations in view it may not be obvious whether identity decisions taken eight or nine centuries ago retain any meaning at all. The theory of autopoiesis as applied to organizations indicates that they might have fundamental meaning. Krücken is right: 'history matters, also for organizations' (p. 334).

The 'Ideal Type' of European universities

Every university is a unique autopoietic system, because each has had its own, unique foundational moment. So constructing a Weberian ideal type and discussing *the* identity of the traditional European university—the 'nature' of it—is certainly an oversimplification. Each institution has its own, distinctive identity pattern, its own nature. However, one may note that searching for an idealization has as its source the way in which universities construct their own self-descriptions. In contrast to the typical self-descriptions of enterprises, those of universities highly emphasize what is timeless, beyond the individual, universal. And this is the case not only today, when universities proudly showcase a pedigree of over nine centuries, but has been the case since the very beginnings of the first medieval universities. Even though they were thoroughly original and novel organizations, not known to earlier generations, they constructed their self-description through what Hobsbawm and Ranger call 'invented tradition': fabricating a connection with a convenient past and creating the pretense of continuity with the chosen tradition (Hobsbawm 1992). While twentieth-century universities traced their tradition back to the Humboldtian era, and earlier ones to the middle ages, the founders of the first medieval universities pointed to antiquity, sometimes even forging documents which would prove their ancient provenance (Rüegg 1992; Weber 2004). Hence, independently of actual historical evidence, the self-description of universities turns out to consistently refer to the past as the source of endorsement for their authority in society. Reference is made not only to ancient institutions, but above all to the achievements and glory of past generations of scholars. As Bernard de Chartres used to repeat, 'we are like dwarfs on the shoulders of giants' (Merton 1965). The university, in its self-description, presents itself as the heir, continuator, and custodian of their legacy.

What defines such an idealized identity of European universities as rooted in the past? As Kerr (1982) points out, it is noteworthy that out of the 85 surviving European institutions founded before 1520 (such as the Catholic Church and several Swiss cantons), 70 are universities:

Kings that rule, feudal lords with vassals, and guilds with monopolies are all gone. These seventy universities, however, are still in the same locations with some of the same buildings, with professors and students doing much of the same things, and with governance carried on in much the same ways. There have been many intervening variations on the ancient themes, it is true, but the eternal themes of teaching, scholarship, and service, in one combination or another, continue. (Kerr 1982, 115)

With this exceptional durability, the identity of the European university is hence undoubtedly a successful one. From Kerr's figures, one could even conclude that it is the most successful identity that European organizations have ever developed. Its classical definitions identify exactly the three components mentioned by Kerr: research, education, and public service (e.g., European Commission 2003; Vorley and Nelles 2008; Santiago et al. 2008; Sowa 2009).

Uses of a system versus its nature

The above tripartite characterization of the university through research, education, and public service describes its mission that is the primary objective of the organization (Griffin 2011). However, such teleological concepts belong to what Maturana and Varela (2010) call the *allopoietic* perspective, focused on the outputs of a system. This is the perspective for which Kerr's (1982) 'uses of the university' may serve as a good example. Maturana and Varela explain that allopoietic systems are those that are organized to produce something different than themselves, whereas autopoietic ones self-organize to produce themselves. This does not mean that the latter cannot be *described* in a terminology of inputs and outputs and *treated* in that way by another system. Just as an autopoietically organized, self-producing organism of, say, a cow can be treated by some other autopoietically organized, self-producing systems (e.g., the economy, the law, a household, or a mosquito) as an input–output device. With organizations, allopoietic descriptions and handling surely are common practice. Such an allo-oriented treatment, however, 'does not reveal [the system's] organization' (Maturana and Varela 2010, 81) as an autopoietic one. In order to understand the autopoietic dimension of a system's functioning, it is hence necessary to redirect attention from its outputs and uses, manifested in its mission statement and recognized by other systems, to the *forms* of its own continuous perpetuation. It is through them that the system accomplishes its recursive self-production.

It is characteristic that the three components of the European university's idealized mission were at first accompanied by two basic forms of action. Research and teaching were clearly both the mission of a university and its basic activities. Yet the third pillar, public service, had not been assigned a unique form of action. Rather, it had been assigned both of the above, since through research, the university became a 'breeding ground of ideas and values' for society, and through teaching, a 'breeding ground of professionals' that would serve it (Sowa 2009). On the autopoietic level, the traditional mission of public service did not call for any additional activities outside the process of self-production. It remained an external narrative, an evaluation of the usefulness of the former two from the perspective of other social systems.

Initial choices define autopoietic identity

Identifying research and teaching as two fundamental forms of activity is of course insufficient to exhaust the organizational identity of any university, even of a generalized and idealized one. This is not only due to the immense richness of this complicated and extensive organization. Another reason is that, according to Luhmann's (1986, 1989, 1990a, b, 1995) method for describing the identity of an autopoietic social system, based on Spencer-Brown (1969), and further developed by Seidl (2005), an identity is characterized and constructed by communicative events whose structure is based on *binary oppositions*. Such events communicate identity through repeated choices between alternative options, delineating the option that marks 'self' from other, not chosen ones. According to Luhmann (1989, 1990a, b), the codes of the functional subsystems of society—such as the economy, culture, or knowledge—are each based on one fundamental binary opposition. For example for knowledge, this is the opposition 'true vs. false,' which organizes the self-production of the system. The identity codes of organizations, in turn, are shaped by the binary oppositions that follow from decisions:

Decisions are a very peculiar form of communication: they are ‘compact communications’ (Luhmann, 2000, p. 185) which communicate their own contingency. In contrast to an ‘ordinary’ communication, which only communicates a specific content that has been selected (e.g., ‘I love you’), a decision communicates also—explicitly or implicitly—that there are alternatives that could have been selected instead (e.g., ‘We are buying machine A and not machine B’). They communicate not only what has been decided but also that it has been decided. This has significant implications for the dynamics of decisions. In the transition from one decision to the next, the uncertainty of the first decision—i.e., the uncertainty about the consequences of the given alternatives—disappears. For the second decision it is irrelevant what the initial decision situation looked like. The second decision can take the chosen alternative as a clear point of reference (...). (Seidl 2009, 139)

At its inception, the organization takes its first defining decisions, and in the very act also communicates having done so. These decisions are binding, because subsequent ones are constrained by the options chosen previously. Thus, the realm of organizational choices narrows down, as its operations become increasingly confined by the recursive generation of system components, which remains conditioned by all former decisions.

The exact initial distinctions that have shaped the identities of each and every traditional European university should be considered separately on a case-by-case basis. A fundamental statement of the complex systems research paradigm is Henri Poincaré’s (1890) observation that very small differences in initial conditions may yield very diverging outcomes. What I would like to offer, however, is a general conceptualization of what initial choices of the very first European universities appear to have in common. Available reconstructions (e.g., Haskins 1965; Rüegg 1992; Pedersen 1997) of their foundational moments provide evidence for formulating the hypothesis that although these organizations were complicated from their beginning, there were only two fundamental binary oppositions from which their autopoietic systems originated. The first one was shaped by the great intellectual fascination of the medieval masters with the category of *truth*. Of course it was not their invention, but an area whose boundaries became well-defined to a sufficient number of collaborating people at a certain historical moment. The second opposition was created by these same people, who, by differentiating themselves from society in general, formed individual academic communities.

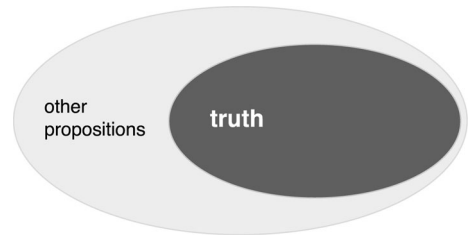
The integral connection of these two choices created the university. In order to fully understand the connection, let us look at each one it turns first.

The first binary opposition: truth versus other propositions about reality

On the classic formulation in Aristotle’s *Metaphysics*, truth is defined in opposition to falsehood. The concept of truth which has shaped the university, however, is narrower: It is opposed not only to falsehood, but also to any propositions which are not the result rational thinking or have not been proven by its established rules. So it incorporates strictly truths discovered by reason, and not, e.g., divine revelation, the truth of emotions, truths derived from intuition, or common sense.

At the turn of the eleventh and twelfth centuries, the dissemination of knowledge about classical culture stirred up a rush for knowledge and growing respect for the powers of human reason (Rüegg 1992). Of course in earlier centuries, there had also been masters who had trust in reason and formulated their propositions in accordance with the laws of

Fig. 1 Identity of the traditional European university: the first binary opposition (truth vs. other propositions)



logic. However, in the period directly preceding the creation of the first medieval universities, the value of rationally proven truth ceased to be recognized only by the few, gradually becoming a platform of communication and collaboration for ever widening circles of scholars. The reason for the hitherto dispersed individual scholars to form groups was the sheer amount of new knowledge and the rapidity of its increase, impossible to track for any single individual: Combined effort was necessary to assimilate it all (Pedersen 1997). The common ground which made cooperation possible was the agreement on what truth is and is not (Fig. 1).

In particular, striking, and controversial, was the opposition of this newly institutionalized concept not to falsehood (seen as unproblematic), but to religious truths dictated by the doctrine of faith (Asztalos 1992). Pierre Abélard's famous *Sic et Non* became a manifesto that set the rules here. He claimed that the first key to wisdom is questioning: 'for by doubting we come to inquiry; through inquiring we perceive the truth' (Tierney 1976, 398). Abélard's phrasing of the first binary opposition which defined the identity of the university was highly radical for his times. It separated the newly forming autopoietic system from the system of religion, which was governing the intellectual life of Europe. It was not so much a schism or rebellion targeted at the Church and its influence, as the adoption of a new, independent way of discovering truth.

The decision within the binary opposition between truth and other propositions seems to be continually retaken by universities. Yet nowadays, this choice does not generate major controversy when opposing the system of religion. It is the economy that has taken its place. Also, the cornerstone concept got more sophisticated over time. Today, we are unlikely to use the exact word 'truth,' speaking about 'adequacy,' 'validity,' or 'relevance.' Scientific accounts of the reality are not expected to be 'true'—they should, rather, provide 'useful lenses': enable understanding, explanation, prediction, and action. But they can do that only if they do not distort. Otherwise, the action will turn out to be misdirected, prediction—inaccurate, explanation—unconvincing, and sense of understanding—short-lived.

The second binary opposition: the academic community versus other social groups

The emergence of groups of masters and students seeking truth became the pillar of the second binary opposition—this one located not in the realm of ideas, but in the everyday arena of the socioeconomic life of medieval Bologna, Paris, Oxford, Cambridge, Salamanca, Montpellier, Padua, and other cities. The new academic communities soon turned out to be significant enough to wield a considerable influence on the realities of their times (Rüegg 1992). Their social leverage was a consequence of the increasing acceptance of and appreciation for the power of knowledge. To the cities in which they settled, they brought

Fig. 2 Identity of the traditional European university: the second binary opposition (the academic community vs. other social groups)



fame, reputation, and new streams of income. They were conscious of their value and used it aptly to negotiate additional privileges from important institutions. From the beginning, the relationship between scholars and those wielding power has been an even game marked by ambivalence (Pedersen 1997). Scholars and students were frequently in conflict especially with residents and local authorities. The relations with royal and papal authorities were more subtle, as both tried to curry scholars' favors by offering legal protection and support. The academics maintained a balance, frequently using the protection of one side to force concessions from the other.

The drive of the power wielders of the time to subjugate the developing academic communities made political sense. But it is certain that in the twentieth century, universities were not *subordinated* to any of them. Pedersen emphasizes that the universities of Bologna, Salerno, and even Paris owed their position—by far superior to the teaching standards of the time—not to protection and support, but exclusively to their own efforts and the quality of their achievements. The academic community was not an *allopoietically* constructed instrument of the authorities—be it local, royal, or of the Church. The threat of becoming just that turned into the source of the second binary opposition constituting the autopoiesis of the university as a social system: the opposition between academic communities and the rest of society, especially its power structures. While the first opposition (truth vs. other propositions) created a broad academic community in the public sphere, the second opposition gave rise to concrete, formal, social organizations, which grouped the community into separate, autonomous institutions (Fig. 2).

The transformation of loosely confederated academic communities into formal organizations was a way to emphasize and protect their independence and rights. Academics needed rules to which they could appeal and which would protect their privileges. Igniting impulses for the formalization of the university mostly did not come from big issues, like the defense of scientific truth. For example in Bologna, the direct stimulus came from steady increases in rents for student residences. Individual tenants facing such practices were helpless. There was need of a structure which would generate sufficient pressure to protect students (Haskins 1965; Pedersen 1997).

While each individual academic teacher was a guardian of the first binary opposition, the broader collegial structure became guardian of the second. The academic communities chose an adequate legal structure, which would best protect the interests of their profession, from what was popular and available within the socioeconomic systems of their time. In the middle ages, the word *universitas* simply referred to a guild (Haskins 1965; Rüegg 1992). Therefore, the university constituted itself as a professional group, closer to today's professional associations than to enterprises. The word *university* referred to this community of persons (and not, for example, the universality of science). Nor did it refer to a place, or the university campus, as it currently does. At the moment of their inception,

universities were not institutions or places, but communities of *studiorum et studentium*—teachers and learners.

The two processes of self-production

According to the original, biological theory of Maturana and Varela (2010, 77), autopoietic systems are unities, which are defined by *dynamic* (not static) *relations* between *processes* (not components). It may be useful to apply such a framework also to the streams of decisive-communicative events that create organizations. A blueprint of the organization's identity could then be described as a self-observed and self-described intertwinement that holds all the key self-observed and self-described processes together. In case of the European university, the two oppositions outlined above define the areas where such processes occur. Before the final reconstruction of their mutual relation, let us understand each separately.

Autopoietic processes define the basic trajectories of movement for the continuous flux of perpetuation that is the repetitive, recursive self-production of the system. It seems that the traditional European public university has had two such processes from the beginning. They represent *axes of construction*, organizing the two areas described above, the area of truth, and the area of the academic community. The first is the *process of discovering truth*, which consists in continually adding the new to the already known. It organizes the intellectual activity of the academic community in the abstract space of knowledge and ideas (Fig. 3).

The discovery of new scientific truths consists in the incessant introduction of change (Znaniecki 1986). Pushing the frontiers of the known is one of the two basic activities of the university as an autopoietic system. This process combines research (discovering what already is) with creativity (making an own, unique contribution). The connection is integral, because scientific creativity is subordinated to an external order. The creativity of a researcher is mostly a matter of her or his method, technique, or approach; the intuition of where to position the sculptor's chisel and how to drive it. What is revealed in effect is no longer the scholar's creation, but a truth about reality. The individuation of academic communities from the rest of society provided them with the organizational footing indispensable for this kind of creative search subordinated to the truth. Communities of scholars and their students organized in a way which allowed them to not only expand scientific truth, but also accumulate it and pass it on to the next generations.

The second process is the *education of students*. It takes place between master and disciple, which is the 'axial, constitutive social relation' (Sowa 2009, 48) of the university. Today these relations take the form of many-to-many, rather than one-to-one, but this does not alter their status as the canvas of the university as a community (Fig. 4).

Fig. 3 Identity of the traditional European university: the process of discovering truth (new becomes known)

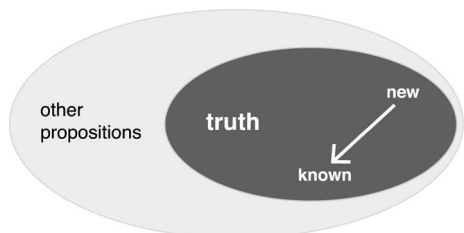
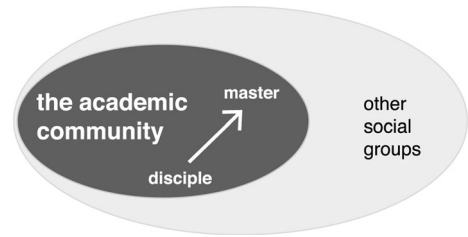


Fig. 4 Identity of the traditional European university: the process of education (disciple becomes master)



Within an autopoietic system, as explained by Mingers (1995, 32), ‘all possible states of activity must always lead to or generate further activity within itself,’ since ‘all processes are processes of self-production.’ The essence of the autopoietically understood organization is, thus, the production of its decisive-communicative events by means of other such events. Within the university, known truths (i.e., truth statements) produce new truths, which in turn become known truths. And masters (i.e., ones who have been assigned this organizational role by the decision of others) teach disciples so they become masters themselves. This leads to quite a controversial conclusion that the second fundamental autopoietic process of the European university is educating students to become *academic masters*, rather than educating them for the benefit of society. According to this logic, the ‘surplus’ of candidates—those leaving the university after graduation—may just be a strategy of the autopoietic system to ensure its access to a large pool of ‘material’ for choosing future scholars. That the surplus students have other, non-scientific goals related to their own careers, matters to the autopoietic system only as a way of attracting them and involving them in the processes of its self-production. If we accept that the identity matrix of the European university has been laid down at the moment of its foundation, such a conclusion seems justified. This has been the case historically, as Charles H. Haskins explained even before Europe *en masse* returned to the *licentiate*:

(...) the student came to seek the professor’s license as a certificate of attainment, regardless of his future career. This certificate, the license to teach (*licentia docendi*), thus became the earliest form of academic degree. Our higher degrees still preserve this tradition in the words master (*magister*) and doctor, originally synonymous, while the French even have a *licence*. A Master of Arts was one qualified to teach the liberal arts; a Doctor of Laws, a certified teacher of law. And the ambitious student sought the degree and gave an inaugural lecture, even when he expressly disclaimed all intentions of continuing in the teaching profession. (Haskins 1965, 11)

These two ‘axes of construction’—the discovery of truth and the education of students—define the direction of flux of the processes, not a static relation between concrete components. What is new today will be known tomorrow and will form the basis of further discoveries. Today’s student will be a master tomorrow—an educator of new students.

The unity of processes that constitutes the university

On a systems approach, as opposed to an analytic approach, a satisfying understanding of the phenomena in question requires a synthetic account, rather than a decomposition into the smallest possible components. As proposed above, the autopoietic identity pattern of organizations should be defined by the relation between its key processes, and not these

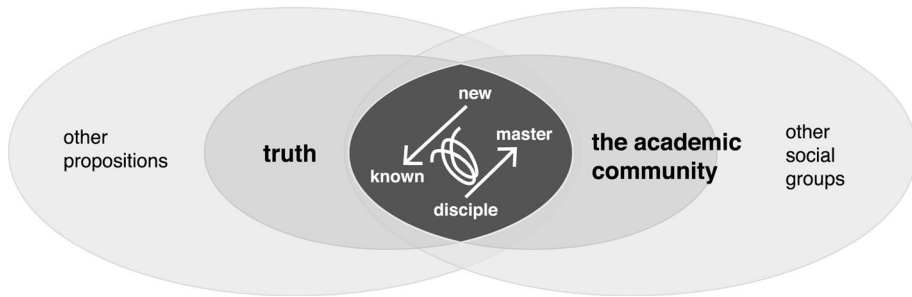


Fig. 5 Identity of the traditional European public university: the dynamic relation between its two fundamental processes

processes as such, nor the components between which they take place. So the identity pattern of the traditional European university is the *relation* between the two processes described above. This relation binds them to each other (Fig. 5):

The self-production of the university as an autopoietic system is the result of the dynamic interaction between two processes: the process of discovering new truths, and the process of transforming students into scholars. These processes are not independent:

1. The research process—adding new scientific truths to the known ones—is the vehicle that gradually turns a student into a master.
2. At the same time, the process of transforming new members of the academic community into scholars is a driving force behind enriching scientific knowledge with new truths.

The reason for the latter is not only that in order to climb the ladder of academic scholarship from bachelor to professor, candidates are motivated to demonstrate ever-new scientific accomplishments. Equally important is the stimulation of the minds of mature scientists by contact with investigative youth.¹

It follows that the essence of the identity of the traditional European university is an integral combination of education and research. This idea is usually attributed to Wilhelm von Humboldt, but it was present as early as at the foundational moment of the medieval universities. Initially both processes were closely integrated: The search for truth did not take place but through scholastic disputes, to which also students listened and contributed.

This integral combination defines the boundaries of the traditional university, and thus also the areas excluded from its identity. Within these boundaries lie the truths discovered and accumulated by the academic community, and the part of the academic community which contributes to these undertakings—Clark's (1998) 'academic heartland.' The intersection of the two sets excludes those truths which were not discovered and investigated by members of the community: Their integration into scientific knowledge, approved by universities, requires further work by scientists. But there is more left outside: things academics do which do not serve the discovery and accumulation of truth. The low regard for non-academic activities among scholars is as old as the university itself.

¹ The latter is beautifully illustrated by the history of the concept of 'autopoiesis' itself. As Maturana (2002, 6) recounts, his search for the essence of what makes living systems unique began with the question of a student. Maturana did not know the answer. He asked the student to come back in a year's time.

There is no change without continuity

The voluminous research on traditional European universities illustrates various transformations piling up inside them. The past and present trends of change described are numerous—and massive public policy agendas, set out to increase their speed and scope, still remain unsatisfied, and keep demanding more. I am aware that in such a context, a contemplation of a binding blueprint of the university may seem surprising. Nonetheless, I believe that a search for the underlying autopoietic pattern of the university, and a consideration of its strength, can be of great relevance *especially* in times of rapid transformations and reforms—be it postulated, implemented, or contested ones. Without understanding continuity, we cannot understand change.

The theory of autopoietic social systems, when applied to understanding the organizational identity of the university, opens up paths for new explorations. It makes it quite apparent, for example, why the struggle of the (autopoietic) systems of politics to merge universities with the (autopoietic) system of the economy results in intra-university differentiations, buffering the ‘academic heartland’ from the tasks absorbed by the ‘strengthened steering core’ and ‘expanded peripherals’ (Clark 1998). It has been well articulated by the founding fathers of autopoiesis Maturana and Varela (2010) that autopoietic systems treat outside influences as *perturbations* and respond to them with adequate *compensations*. They develop new processes and structures only to be able to continue their own autopoiesis, in spite of the perturbations. One could say: they change only to be able to remain unchanged.

For those involved in steering transformations and implementing changes, it can be particularly interesting to use the concept of autopoiesis as an explanatory framework to see why certain university transformations are so difficult to carry out and so quick to evaporate. The autopoietic identity of the university, as I hope to have shown in this paper, justifies academic professors being preoccupied with what their students *know, understand*, are able to *question* and *explain*, and not with what concepts and qualities are currently considered *worthy a transaction* within the system of the economy—be it even a transaction of employment at the job market. The ruts of academic work have been set long ago to travel from unknown to known, and from disciple to master. Moving from non-payment to payment (which Luhmann sees as the basic distinction of the system of the economy) is another game, with another set of rules.

As Luhmann (1990a, 31) explains, the system’s fundamental distinction yields its ‘sensitivity to specific questions’ and ‘indifference toward everything else.’ The cornerstone distinctions of the university—between truths and other prepositions, and between academic and other social groups—shape the areas of its sensitivity and indifference in its environment. Human organizations are *open* systems. But *what* they are *open to* is conditioned by the pattern of their own autopoiesis.

Acknowledgments I would like to thank Prof. Grazyna Prawelska-Skrzypek, Dr. Marta Shaw, Prof. Achim Brosziewski, and Witold Reichhart for inspiring discussions, critique, and comments, as well as Sasha Wronsky for translation and proof-reading assistance. This research was supported by the ‘Doctus’ Lesser Poland Scholarship Fund.

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References

- Ackoff, R. L. (1971). Towards a system of systems concepts. *Management Science*, 17(11), 661–671.
- Albert, S., & Whetten, D. A. (1985). Organizational identity. *Research in Organizational Behavior*, 7, 263–295.
- Asztalos, M. (1992). The faculty of theology. In: W. Ruegg (Ed.), *The history of the university in Europe* (Vol. 1). *Universities in the Middle Ages* (Chapter 14, pp. 409–441). Cambridge: Cambridge University Press.
- Clark, B. R. (1998). *Creating entrepreneurial universities: Organizational pathways to transformation*. Oxford: IAU Press.
- Czarniawska-Joerges, B. (1997). *Narrating the organization: Dramas of institutional identity*. Chicago, IL: University of Chicago Press.
- European Commission. (2003). Communication from the commission: The role of the universities in the Europe of Knowledge. Commission of the European Communities COM(2003) 58 final. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2003:0058:FIN:en:pdf>. Accessed November 3, 2013.
- Griffin, R. W. (2011). *Fundamentals of management*. Mason: South Western Cengage Learning.
- Hackman, J. R. (Ed.). (1990). *Groups That Work (and Those that don't)*. San Francisco, CA: Jossey-Bass.
- Hackman, J. R., & Coutu, D. (2009). Why teams don't work. *Harvard Business Review*, 87, 99–105.
- Haskins, C. H. (1965). *The rise of universities*. Ithaca, NJ: Cornell University Press.
- Hatch, M. J., & Schultz, M. (2002). The dynamics of organizational identity. *Human Relations*, doi:10.1177/0018726702055008181.
- Hobsbawm, E. (1992). Introduction: Inventing Traditions. In E. Hobsbawm & T. Ranger (Eds.), *The invention of tradition* (pp. 1–14). Cambridge: Cambridge University Press.
- Kerr, C. (1982). *The uses of the university*. Cambridge, MA: Harvard University Press.
- Krücken, G. (2003). Learning the 'New. New Thing': *On the role of path dependency in university structures*. *Higher Education*, doi:10.1023/A:1025344413682.
- Luhmann, N. (1986). The Autopoiesis of Social Systems. In F. Geyer & J. Van der Zeeuwen (Eds.), *Sociocybernetic paradoxes: Observation, control, and evolution of self-steering systems* (pp. 172–192). London: SAGE Publications.
- Luhmann, N. (1989). *Ecological communication*. Chicago: University of Chicago Press.
- Luhmann, N. (1990a). *Die Wissenschaft der Gesellschaft*. Frankfurt am Main: Suhrkamp.
- Luhmann, N. (1990b). *Political theory in the welfare state*. Berlin: de Gruyter.
- Luhmann, N. (1995). *Social systems*. Stanford: Stanford University Press.
- Luhmann, N. (2000). *Organization und Entscheidung*. Opladen: Westdeutscher Verlag.
- Luhmann, N. (2009). Self-organization and autopoiesis. In B. Clarke & M. B. N. Hansen (Eds.), *Emergence and embodiment: New essays on second-order systems theory* (pp. 143–156). Durham: Duke University Press.
- Magalhães, R., & Sanchez, R. (Eds.). (2009). *Autopoiesis in organization: Theory and practice*. Emerald: Bingley.
- Maturana, H. R. (2002). Autopoiesis, structural coupling and cognition: A history of these and other notions in the biology of cognition. *Cybernetics & Human Knowing*, 9(3–4), 5–34.
- Maturana, H. R. (2010). Biology and Cognition. In H. R. Maturana & F. J. Varela (Eds.), *Autopoiesis and cognition: The realization of the living* (pp. 1–58). Dordrecht: D. Reidel.
- Maturana, H. R., & Varela, F. J. (2010). Autopoiesis: The organization of the living. In H. R. Maturana & F. J. Varela (Eds.), *Autopoiesis and cognition: The realization of the living* (pp. 59–123). Dordrecht: D. Reidel.
- Merton, R. K. (1965). *On the shoulders of giants: A Shandean postscript*. New York: Free Press.
- Mingers, J. (1995). *Self-producing systems: Implications and applications of autopoiesis*. New York: Plenum.
- Pedersen, O. (1997). *The first universities: Studium generale and the origins of university education in Europe*. Cambridge: Cambridge University Press.
- Poincaré, J. H. (1890). *Sur le problème des trois corps et les équations de la dynamique*. Divergence des séries de M: Lindstedt. *Acta Mathematica*. doi:10.1007/BF02392506.
- Rüegg, W. (1992). Themes. In: W. Ruegg, (Ed.), *The history of the university in Europe* (Vol. 1). *Universities in the Middle Ages* (Chapter 1, pp. 4–14). Cambridge: Cambridge University Press.
- Santiago, R., Carvalho, T., & Relva, R. (2008). Research and the universities' image. *European Journal of Education*, doi:10.1111/j.1465-3435.2008.00370.x.
- Seidl, D. (2004). *Luhmann's theory of autopoietic social systems*, *Munich business research*. http://www.zfmg.bwl.uni-muenchen.de/files/mitarbeiter/paper2004_2.pdf. Accessed September 15, 2012.

- Seidl, D. (2005). *Organisational identity and self-transformation: An autopoietic perspective*. Hants: Ashgate.
- Seidl, D. (2009). Productive misunderstandings between organization science and organization practice: The science–practice relation from the perspective of Niklas Luhmann’s theory of autopoietic systems. In R. Magalhães & R. Sanchez (Eds.), *Autopoiesis in organization: Theory and practice* (pp. 132–148). Emerald: Bingley.
- Seidl, D., & Becker, K. H. (2006). Organizations as distinction generating and processing systems: Niklas Luhmann’s contribution to organization studies. *Organization*,. doi:[10.1177/1350508406059635](https://doi.org/10.1177/1350508406059635).
- Sowa, K. Z. (2009). *Gdy myślę uniwersytet*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
- Spencer-Brown, G. (1969). *Laws of form*. London: Allen & Unwin.
- Stinchcombe, A. L. (1965). Social structure and organizations. In J. G. March (Ed.), *Handbook of organizations* (pp. 142–193). Chicago: Rand McNally & Co.
- Tierney, B. (Ed.). (1976). *Great issues in Western civilization*. New York: Random House.
- von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. New York: George Braziller.
- Vorley, T., & Nelles, J. (2008). (Re)Conceptualising the academy: Institutional development of and beyond the third mission. *Higher Education Management and Policy*,. doi:[10.1787/17269822](https://doi.org/10.1787/17269822).
- Weber, C. F. (2004). Ces grands privilèges: The symbolic use of written documents in the foundation and institutionalization processes of medieval universities. In M. Feingold (Ed.), *History of Universities* (Vol. XIX/1, pp. 12–62). Oxford: Oxford University Press.
- Znaniecki, F. (1986). *The social role of the man of knowledge*. New Brunswick, NJ: Transaction Publishers.