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SEWERYN RUDNICKI
AGH University of Science and Technology

Complexity, Institutions, and an 'Agile' Disability Policy

Abstract: The aims of this article are: 1) to offer a deeper and more theoretically grounded understanding of the dysfunctions of the institutional support system for people with disabilities in Poland; and 2) to propose inspirations for a new, 'agile' disability policy. To this end the author applies concepts from Niklas Luhmann's theory of social systems and its more recent interpretations, as well as ideas from so-called complexity theory. It is shown that the dysfunctions of the institutional system can be interpreted as resulting from the system's autopoiesis and insensitivity to the complexity of the environment. Yet, as the system/environment relationship is precarious, the system could be motivated to redefine itself and to implement solutions that would make it more responsive to the environment. It is argued that an agile disability policy, based on the assumption that complexity is a crucial environmental feature, could be a solution to this problem.

Keywords: disability, complexity, systems theory, Luhmann, agile policy.

Introduction

The main inspiration for this article derived from observations made during a set of in-depth interviews and group discussions with disability experts.[1] Among many other topics, the question emerged of complexity as one of the central characteristics and dysfunctions of institutional support systems. Apart from many other problems, such as bureaucratization, lack of integration, lack of continuity, and improper adjustment of public support, one of the main sources of distress for persons with disabilities is difficulty orienting themselves in a complex net of institutions, organizations, programs, and regulations. Indeed, this seems to be one of the most important features in the situation of persons with disabilities today (Gąciarz, Ostrowska, Pańków 2008: 109–114; Gąciarz, Kubicki, Rudnicki 2014: 118).

Elsewhere (Rudnicki 2014) I have attempted to analyse how an institutional support system may actually increase its informational complexity and encumber its clients with the task of reducing that complexity (which can be regarded as a secondary form of discrimination). The present paper is focused on the institutional perspective. It aims to show that the reduction of complexity of the environment is a crucial cause of the dysfunction and inefficiency of institutional support systems for persons with disabilities, The second aim is to outline possible solutions to this problem by discussing how institutional systems can

[1] In the research 'From a Comprehensive Diagnosis of the Situation of People with Disabilities to a New Model of Disability Policy,' 60 in-depth interviews and 2 focus groups with disability experts from Polish public institutions and non-governmental organisations were conducted. The sample included experts with different specializations and from different geographical locations.

be reformed to make them more sensitive to the environment without losing their identity. The theoretical basis for this article is Niklas Luhmann's theory of social systems (1995) and its more recent interpretations (Valentinov 2013, 2014a, 2014b) highlighting the precarious nature of the system-environment relationship. In spite of this choice of theory, the present paper is not intended to be theoretical but rather an example of how insights from quite abstract sociological theory can be applied as inspirations for practical purposes.

Complexity and Its Reduction

From the broad sociological perspective, complexity is one of the central features of contemporary social life and is attracting the attention of a growing number of scholars—a move within the discipline that is sometimes called a 'complexity turn' (Urry 2005). It should be noted, however, that complexity has emerged as a theme of scientific inquiry within the natural sciences (most notably physics, biology, chemistry, and meteorology), and has additionally been stimulated by the radical increase of computational powers enabling the behaviour of complex systems to be simulated and analyzed. The very term 'complexity' has no unified definition; there is rather a range of terms and assumptions that are common within so-called 'complexity theory' (Byrne 1998; Gell-Mann 1997; Livneh, Parker 2005; Room 2011; Szydłowski, Tambor 2010; Urry 2005; Warren, Franklin, Streeter 1998; White 2001). The fundamental assumption is that there is an analogy between the behaviour of ontologically different systems: chemical particles, organic cells, ecosystems, cities, markets, organisms, humans, etc., resulting in the possibility of explaining them with a universal theoretical framework. Complexity theory emphasizes that systems have non-linear dynamics of behaviour, which means that at some stages (bifurcation or crisis points) a change in one parameter results in a disproportionate change in another (moreover, a minor quantitative change may result in large qualitative consequences). Systems can also be highly dependent on initial conditions (the butterfly effect, path dependence). Another important assumption is that of emergence: complexity theory is non-reductionist in emphasizing that the behaviour of systems cannot be reduced to the behaviour of only one kind of element. On the contrary, ontologically different elements (e.g., material, biological, psychological, or social ones) may interact and elicit unpredictable changes. In addition, systems tend toward spontaneous self-organization and autopoiesis. All these characteristics are responsible for the fact that the behaviour of systems is a mixture of chaos and determinacy, rendering every prediction uncertain and undermining the hopes of modern science for perfect knowledge and accurate predictions.

It seems clear that complexity has become a crucial term and is definitely an appealing metaphor of the contemporary unstable, fluid, contingent, unpredictable, and uncertain world. Nevertheless, in spite of its non-reductionist assumptions, complexity theory is largely dominated by the natural sciences and mathematical formalization, which puts the social sciences in a difficult position. One possible solution is to use formalized models from complexity theory to analyse social problems (see Nowak, Borkowski, Winkowska-Nowak 2009), another is to treat complexity theory as a source of inspiration and metaphors for sociological explanations and theories (Drozdowski, Szlendak 2013; Sojak 2013). My

aim is to follow the second path by focusing on the problem of complexity and its reduction in the light of Luhmann's theory of social systems. It must be noted that Luhmann's view is an original one and not entirely congruent with complexity theory, even though the latter has much in common with systemic theory (see Warren, Franklin, Streeter 1998). It seems, however, to be a good example of how the social sciences can approach the problem of complexity without losing their theoretical coherence and identity.

Complexity is one of the central notions in Luhmann's theory. He defines it as relating to the number of elements, or the number of relations between them (Luhmann 1995: 26), or—more importantly—as 'a measure for indeterminacy or lack of information' (ibid.: 27). In the latter view, complexity refers to the information the system lacks in order to fully grasp its environment or itself. The central status of the concept of complexity stems from Luhmann's thesis that the relationship between a system and its environment is based upon the disproportion of complexity: 'for each system the environment is more complex than the system itself' (ibid.: 25). Hence, the difference in the degree of complexity is crucial for establishing and maintaining the system/environment difference and for a system to exist. Having to 'assert itself against the overwhelming complexity of the environment' (Luhmann 1991: 250, cited in: Valentinov 2014b: 16) and being unable to maintain point-for-point correspondence to the environment, systems are able to survive only by reducing environmental complexity. To meet this challenge every system has to develop strategies of selection: increasing sensitivity to specific fragments of the environment while decreasing sensitivity to the rest (Valentinov 2014b: 16). In other words, systems have to ignore part of their environmental complexity to survive.

Complexity reduction is linked with the concept of autopoiesis. According to Luhmann, a system's reproduction is self-referential, occurring by means of continuous regeneration of the system's own components (Valentinov 2014b: 16). In this regard, systems are 'operationally closed', which means they have no input-output contact with the environment, do not import their elements from the environment, and do not operate in the environment: 'the system reacts to environmental events only through itself, through its internal operations' (Valentinov 2014a: 29). As autopoietic, systems also allow no direct determination or control by the environment. In other words, the environment exists within a system only as its representation within this system. As such, systems are 'operationally closed'. However, this does not mean that systems are completely free in their self-reference and can ignore environmental conditions. As Luhmann explains in his later work (1997; cited in: Valentinov 2014b: 17–18), systems have to maintain a minimal level of adaptation to their environment in order to survive. Therefore, systems are neither open to the environment nor completely free in conducting their autopoiesis. The relationship between a system and its environment is maintained through 'structural couplings' (a concept originally proposed by Maturana and Varela), which establish certain 'degrees of freedom' for a system, constraining but not determining its autopoiesis (Valentinov 2014b: 16). Structural couplings constrain the freedom of a system in the sense that they set certain minimally required conditions for its survival, yet they do not strictly determine the behaviour of a system. This means that, although the autopoiesis of a system and its insensitivity toward its environment should have their limits within structural couplings, systems are able to evolve in a way that cannot be tolerated by their environment and that thus restricts their own sus-

tainability. Indeed, according to Luhmann (1997 cited in: Valentinov 2014b: 16), systems tend to utilize their freedom in a way that amplifies deviations; they become less adapted to their environments and endanger their survival in the long run.

In light of the above argument, the system/environment relationship can be analytically described as determined by two interrelated principles: the complexity reduction principle and the critical dependence principle (Valentinov 2014b: 18–19). The former states that systems increase their internal complexity in order to reduce the complexity of the environment and thus become insensitive to it. As Luhmann put it: 'only complexity can reduce complexity' (1995: 26), meaning that the internal complexity of a system is a response to the complexity of the environment. The latter principle 'posits that the increasing complexity of systems is associated with their growing dependence on environmental complexity in ways that make the continuation of their autopoiesis increasingly unlikely' (Valentinov 2014b: 18). This means that by developing their internal complexity systems become less responsive to their environment, may ignore crucial environmental conditions and, when their insensitivity exceeds the level of tolerance, may be unsustainable.

The sustainability of a system is then inversely related to its internal complexity resulting from reducing the complexity of the environment. Yet, as complexity reduction is an existential condition for every system, the system/environment relationship is always precarious and the self-destruction of a system through maladaptation to the environment is always a real possibility.

The next section will show how the concept of an inverse relationship between complexity and a system's sustainability can be utilized as an analytical tool for explaining the functions and dysfunctions of institutional support systems for people with disabilities.

Institutions and their Discontents

The institutional support system for people with disabilities in Poland is understood here as being the actions of a range of public institutions officially established for the benefit of people with disabilities and either specializing in supporting them or offering this support among other services. It encompasses the national and local institutions of public health, the assessment and certification of disability, the labour market and professional activation, and the removal of barriers in public spaces and education. It includes the relevant departments and units of the Ministry of Health, Ministry of National Education, and Ministry of Labour and Social Policy, together with their subordinate units (e.g., the National Fund for the Rehabilitation of Disabled Persons, the Social Insurance Institution) and relevant local institutions (regional social policy centres, poviat (county) family support centres, municipal and communal social assistance centres, etc.). Although disability policy on the national level is officially realized by the Office of the Government Plenipotentiary for Disabled People, in fact the area of responsibility of this office is limited. As a consequence, social policy on disability is fragmented; its lack of a real coordination centre is regarded as being a source of its serious dysfunction (ibid.: 107). It seems, however, that the institutional support system for people with disabilities meets Luhmann's general definition of a system, as it can be legally and analytically differentiated from the environment (or, more

precisely, it is a sub-system of the public administration, the latter being a sub-system of the political system) (see Luhmann 1994: 52–53).

It could be argued that, for an institutional support system, disability as a phenomenon is an element of a complex environment that demands considerable interpretational effort for its complexity to be reduced. Indeed, disability as a phenomenon is described as 'complex, dynamic, multidimensional, and contested' (WHO 2011: 3), involving health conditions that can be 'visible or invisible; temporary or long term; static, episodic, or degenerating; painful or inconsequential'. It must also be noted that a considerable proportion of people with physical disabilities do not consider themselves disabled (ibid.: 8). In accordance with the social model that is the dominant sociological framework for understanding disability, it is not the dysfunctions of organisms or individuals but the conditions set by the social and material environment that in fact produce disability (Barnes 2012; Gąciarz 2014a). The social environment may create social structures, formal and informal networks, technologies, material facilities, services, regulations, attitudes, ideologies, and overarching approaches that hinder or increase an individual's performance. Moreover, disability intersects with many other social and individual characteristics that to a large extent determine the quality of life of people with disabilities:

> …gender, race, age, other health conditions, fitness, lifestyle, habits, upbringing, coping styles, social background, education, profession, past and current experiences (…), overall behaviour pattern and character style, individual psychological assets, and other characteristics, all (…) may play a role in disability at any level (WHO 2001: 17).

It was also shown that psychological reactions to dysfunction meet many of the criteria of complexity in the sense proposed by complexity theory: they are dynamic, non-linear, mostly unpredictable, intensify through bifurcation points, and include chaotic psychic experiences (Livneh, Parker 2005: 26). In light of the above, disability must be recognized as a complex and heterogeneous phenomenon (Wojtowicz-Pomierna 2010: 273–274), the outcome of intertwined relationships and interactions between biological, material, technological, psychological and social factors, having its own uncontrollable, non-linear dynamics.

Logically, the complexity of disability should also be acknowledged by the institutional support system if the system is to fulfil its mission of providing adequate support for people with disabilities. However, according to Luhmann's theory, a system also has to reduce the complexity of its environment, with the result that it becomes insensitive to some aspects of that environment. Drawing on this argument, the actual simplification of disability occurring within the institutional support system can be shown. The processes of assessing and certifying disability are of crucial importance, as only people with a certified disability are able to enter the system to receive benefits or other institutional support. Certification is thus the point at which the real complexity of a disabled person's medical, psychological, and social situation is recognized by the system as eligible or not.

At present there are two systems in Poland certifying disability: one certification, which is issued by social insurance institutions (the Social Insurance Institution and the Agricultural Social Insurance Fund) entitles a person to receive a pension; the other, which is issued by poviat (county) centres for family support and counselling centres for psychological and pedagogic problems, entitles a person to services such as special education, and

financing for employment or rehabilitation (Bartkowski 2014: 47–48). In both cases the assessment is focused on biological dysfunctions (their kind and depth) and therefore ignores other aspects—all the intertwined psychological and social determinants that are crucial for the actual quality of life of a given person with a dysfunction. Moreover, certification is negative as it concentrates on deficiencies rather than capabilities (Golinowska, Sowa, Wilmowska-Pietruszyńska 2012). There are also numerous problems with the practice of assessment in Poland: people may be differently certified within the two certification systems (the system entitling a person to a pension is usually stricter) (Bartkowski 2014: 47); some people with severe, irreversible dysfunctions receive only temporary certificates; assessment councils work in a hurry and under the influence of external expectations (e.g., limits on the number of people entitled to benefits); and improvement in a health condition may be 'punished' by the withdrawal of benefits. Finally, the fact that it is a certificate and not a dysfunction that entitles a person to receive institutional support can be regarded as a form of discrimination (Waszkielewicz 2008: 27–29); the available data proves that a considerable portion of people with health conditions describe themselves as disabled but are not certified as such (the exact number is highly dependent on methodology) (Bartkowski 2014: 46–49).

With all these questions in mind, it seems clear that what happens within the assessment and certification system is the 'translation' of disability—as a complex phenomenon in the institutional system's environment—into the system's code (the crucial distinction being whether a person is 'disabled' or not). As it is impossible for the system to create a perfect representation of the environment, every such translation necessarily involves a significant reduction of complexity, which results in a discrepancy between the reality of disability and the system's representation and, finally, in the system's inadequacy.

Although crucial, the certification system is only one example of complexity reduction. As an efficient disability policy demands reliable data, the shortcomings of public statistics on the situation of people with disabilities may be the reason for policy failures. This is especially problematic at the local level (Gąciarz, Ostrowska, Pańków 2008: 109). Even though a set of indicators for disability equality—additionally adjusted for monitoring implementation of the UN Convention on the Rights of Persons with Disabilities—has been developed (Grammenos 2010, 2011; Lawson, Priestley 2009) and accords with EU disability statistics, it has not been implemented in public institutions in Poland. The reluctance to implement the use of statistics that would allow a better understanding of disability is related to the lack of coherent disability policy (Gąciarz, Kubicki, Rudnicki 2014: 121). However, it could also be interpreted as the system's reluctance to acknowledge the real complexity of the environment. It is furthermore in accord with the system's tendency to use and show data reflecting costs (amount of expenditures, number of beneficiaries) rather than effects (real improvements in the lives of beneficiaries) (ibid.), which is clearly an example of the system's self-reference.

According to the complexity-reduction principle, environmental complexity can also be reduced by a system's developing its own internal complexity (Luhmann 1995: 26; Valentinov 2014b: 18–19). Apart from the certification system, the regulations and practice of financial benefits for people and organizations (non-governmental organizations,

employers) can also be regarded as oriented toward the system's autopoiesis. Although a popular argument for shortcomings in this area has been the insufficiency of funding, the problems indicated by experts have been related rather to the regulations of the granting process, as well as to accounting, reporting, and other control procedures (Rudnicki 2013). Lowest price as the most popular criterion and requirements for quantitative indicators and advance planning can be interpreted as common ways by which public institutions adjust the complex reality of support to their internal logic and convenience.

Another example of how internal complexity is developed is the fragmentation of support by dispersing it between institutions and offices of different levels and specializations. As a result, the system's elements become incoherent in action, relating at one moment only to one segment of a client's life (health, employment, education, etc.). As elements of the system have difficulty in communicating as a result of the system's differentiation, interrelations between different aspects of life become unintelligible for the system and, in practice, the task of integrating dispersed options of support rests with its clients (Dudzińska 2010: 136).

The system also delegates the provision of support to other systems—to the families of people with disabilities or to non-governmental organizations—based on the assumption that such a 'delegate' will be closer to a given person with a disability and have better understanding of that person's needs. The role of external experts and academics can also be analysed in terms of delegation. The system may legitimate some of its actions on the basis of expert advice and empirical evidence, yet it is dubious whether this kind of knowledge is truly absorbed as it could contribute to increasing rather than reducing complexity. Moreover, as science is another system with its own logic, communication between scientific and institutional support systems is another problem. The institutional system may also develop slogans and ideologies to represent its official aims and legitimate actions. Although such notions as 'integration', 'inclusion', 'individualization', 'empowerment', 'adjustment', and 'accessibility' are rooted in scientific and expert knowledge, in institutional discourse they seem to serve as cognitive shortcuts and slogans. The institutional system does not seem to acknowledge the real complexity that underlies fulfilment of any of these postulates. For example, the 'adjustment' of a single facility such as a bus stop may differ depending on the kind of disability for which it is to be adjusted and this may cause conflicts of interest. Such simplifications may be interpreted as reducing both the complexity of disability and the complexity of scientific and expert knowledge.

In accordance with the above arguments, a great deal of the dysfunction of the institutional support system for people with disabilities in Poland can be interpreted as being a result of the system's tendency to the reduction of complexity and to autopoiesis. The question of whether the system is approaching a level at which its insensitivity will no longer be tolerated by the environment remains open, but ratification of the UN Convention on the Rights of Persons with Disabilities in 2012, as well as the social protests in 2014, seem to have created the sense that considerable changes in the system are needed and that the continual modifications undertaken in recent years are insufficient (Gąciarz 2014c: 8). In the next section I will outline some inspirations for a new disability policy from systems and complexity theory.

Towards an Agile Disability Policy

The last decades of public management have been seriously influenced by the evidence-based policy model, which assumes that effective policy should be based upon empirical evidence—a paradigm rooted in scientific methodology. Although this model still seems to be more a desire than a standard for many policies, its shortcomings are beginning to be realized. Its main strength—sound evidence—can also be regarded as a weakness, because the reality of policy-making largely differs from that of the scientific laboratory (Room 2011: 4–7). Non-linearity, path dependence, emergence, turbulences, interactions, heterogeneity, and unpredictability make conventional approaches to policy analysis less and less suitable, and insights from complexity theory are beginning to enter public management (Teisman, Klijn 2008; White 2001). An agile policy-making model, which assumes that environmental complexity should be acknowledged by policy-makers as a central policy feature, is proposed as a possible solution (Room 2011: 236–246).

The present article tries to follow this path by attempting to outline how systems and complexity theory can be applied not only to explain some persistent, 'wicked' problems of disability policy but also to inform possible solutions. This is a hands-on approach, based on the assumption that systems theory is not only an abstract conceptual construction but also a source of valuable insights for policy-making. It also assumes that conventional solutions that could be boiled down to increasing public expenditures or introducing changes inspired by simplistic ideologies (as described in the previous section) will not be effective as long as they ignore the complex and systemic nature of crucial processes. If disability policy is to be 'intelligent' (Gąciarz 2014b), effective, responsive, and flexible, it has to be sensitive to the complexity and systemic nature of the problems it is to tackle.

Luhmann's theory assumes that the system cannot entirely ignore the environment, yet it does not determine the point at which the environment ceases to tolerate the system's insensitivity. In light of the above, social policy should be oriented toward making institutional systems more sensitive to their environment, without developing their own complexity but also without surrendering to the overwhelming complexity of the environment. Luhmann, though, was largely pessimistic about the evolution of systems, regarding social systems as generally ungovernable (Valentinov 2014a: 32) and claiming that 'The primary goal of an autopoietic system is the continuation of autopoiesis without any concern for the environment' (Luhmann 1989: 14, cited in: Valentinov 2014a: 30). It seems, however, that his theory does not rule out any possibility of a more hands-on and problem-solving approach. Hope may lie in stimulating coordination between functional systems: exchanging information and undertaking concerted actions (Luhmann 1997: 788, cited in: Valentinov 2015). It may also be possible to establish new structural couplings that constrain the range of degrees of freedom for a system and limit the scale of complexity it can develop (Valentinov 2014a: 32). In the case of political systems, Luhmann pointed out the role of communication filters: public opinion, personnel, and law (1994: 152).

I believe this proposal also offers another way to make systems more responsive to the environment—on the basis of improvements in their perception of that environment. A system's insensitivity is a function of its tendency to reduce the complexity of the environment, yet the latter is not a constant but a variable, depending on the system's ca-

pacity to cope with complexity and the effects of the above-mentioned communication filters. Complexity can be interpreted not as a characteristic of the environment but as a feature determined by the relationship between the environment and a system. Although complexity reduction is a universal characteristic and existential condition for any system, it should be noted that systems differ in the scale of their complexity reduction and the development of their internal complexity—this may be the reason why some are more—or less—sensitive to their environments than others. Of course, encompassing the whole complexity of the environment would make any system collapse, but this does not mean that any improvements in the system's perception are impossible. Luhmann assumed after all that epigenetic change is possible in systems, without loss of identity: 'on the program level a system can change structure without losing its code-determined identity' (1989: 45 cited in: Valentinov 2014a: 32). It also seems that establishing new structural couplings, as proposed by Luhmann, assumes a parallel increase in sensitivity to certain environmental elements. In spite of the self-reference of political systems, it has also been argued that political theory—understood by Luhmann as a way by which a system perceives itself and its relationship to the environment (Skąpska 1994: 14)—may be subject to change.

The first step could be to acknowledge the very fact of the complexity of disability and the systemic nature of many of the problems within the institutional support system. Understanding how complexity reduction, autopoiesis, and 'operational closure' result in the incapacity of systems to understand the real complexity of the environment is of vital importance. As the systemic logic cannot just be overruled, a solution would be to 'embed' mechanisms within an institution that would prevent it from misunderstanding the environment. An important area for such intervention is the disability assessment and certification system. As has been done in some countries (Kubicki 2013), members of certification commissions could represent different groups—that is, the commissions could be composed not only of physicians, office staff, or special-education workers but also of people with disabilities, their families, and non-governmental organisations. Such changes could signify a widening of the institutional system's cognitive capabilities by engaging representatives of other systems. What is very important, however, is whether such representatives would be able to preserve their independence from the institutional system and, also, whether the results of such cooperation would be legally binding decisions, not simply a form of voluntary consultation. The same holds for other methods that could enhance the cognitive capacities of the system, such as the implementation of disability indicators in institutional practice. Such ways of 'infusing' new information from the environment to the system could entail new structural couplings to prevent the system from ignoring such knowledge. As a result, the system's freedom of autopoiesis would then be limited and its sustainability increased.

The relationship between Luhmann's and complexity theory's understanding of the concept of complexity is unclear, even though the complexity sciences inherited much from systems theory (see Warren, Franklin, Streeter 1998). It is argued that complexity theory uses the 'part-whole' paradigm, which assumes the whole to be more complex than the part, whereas Luhmann's theory is based upon a 'system-environment' paradigm and is concerned with the issue of the sustainability of the whole in its environment (Valentinov

2015). It seems reasonable to assume, however, that systems' environments are becoming even more complex today, in the sense proposed by complexity theory—that is, non-linear, unpredictable, emergent, heterogeneous, unstable, etc. There is thus a range of insights to be drawn from complexity thinking, artificial intelligence, machine learning, and even design studies, which could inspire an agile disability policy. These are not ready-to-go instructions that can be directly transferred to institutional practice but rather metaphors that help to imagine possible solutions. Such an agile, complexity-sensitive policy could be achieved by:

— *Being sensitive to small or local changes*: a great effect does not always result from a great effort. Some desirable innovations may emerge locally, on a small scale (in institutional practice or government/NGO cooperation), and may need positive feedback and leveraging to become widespread. 'Intelligent' policy could involve a mechanism to pick up even tiny ideas, help them develop, and implement them on a larger scale. Similarly, various undesirable changes may spread non-linearly, without control, and should be recognized and counteracted at an early level.
— *Understanding interaction effects*: additional factors may non-linearly enhance or suppress the effect of an intervention. For example, a person may experience a considerable improvement in his/her life conditions after receiving some kind of support (e.g., a hearing aid, a job position), but its positive effects may demand some kind of additional assistance at an early stage to overcome critical difficulties. Providing such help at the appropriate moment could be highly effective with limited costs.
— *Acknowledging both path dependence and individual and group subjectivity*: clients of any institution are not just passive recipients of support. Instead, they pursue creative strategies in response to any policy: they resist it, by-pass it, extract benefits, mobilise, form alliances, or undertake 'agile actions on complex terrains' (Room 2011: 2, 8). At the institutional level the notion of path dependence reflects institutional sensitivity to initial conditions that could reinforce or inhibit a policy's development. Both subjectivity and path dependence are sources of complexity that must be taken into account when designing interventions: these are some of the reasons why potentially 'good' interventions collapse or become distorted.
— *Decentralization*: hierarchical, bureaucratic, linear organizations have difficulties in coping with complexity. There is, however, some evidence (e.g. Rudnicki 2013) that on the local level persistent problems may be overcome due to informal relationships or a history of good cooperation between different organizations. It may be impossible to propose a one-size-fits-all solution on the national level, but sufficient solutions may be found locally.
— *Creating interfaces*: developing a system's complexity probably cannot be entirely avoided, but its destructive consequences can be diminished by providing appropriate interfaces to the system. By definition, an interface is something that allows a complicated device to be operated, which means that interfaces help to reduce the otherwise overwhelming complexity of a system. Various institutional interfaces are possible: it could be a usable, adjusted, properly organised website; an integrated 'single window' service in an office enabling access to different services in one place; or a contact point where a person can be advised and informed about a whole procedure, avoiding un-

necessary effort and dead-ends. Importantly, properly designed interfaces also help to reduce work for office staff and are cost efficient.

All these proposals may sound idealistic given the system's reluctance to change. As has been shown, however, autopoietic systems are also threatened with elimination and their relationship with the environment is always precarious. If the system is to survive in a more and more complex environment, it needs to address the new kinds of complexity and redefine itself without losing its identity. It seems that the right solutions depend on systems' still operating autopoietically and ignoring a part of the complexity of the environment while being 'able to utilize a greater amount of critical knowledge about their relations to (…) environments' and making this relation less precarious (Valentinov 2014a: 33). In working toward this aim, complexity and system thinking may prove to be a valuable source of concepts and inspirations for a better disability policy.

Concluding Remarks

The aim of this paper has been to offer an analysis of institutional support systems for people with disabilities in the light of Niklas Luhmann's theory of social systems. It has been shown that a system's complexity reduction is an important, hidden factor in many of its dysfunctions. It has also been argued that in order to create a better disability policy, the system must be given the capacity to acknowledge and handle that complexity. A number of inspirations from systems and complexity theory have been presented as a source for policy innovations.

Of course, this is only the beginning of what could be done in this field—both theoretically and practically. Complexity and systems theory could be more widely applied to the academic analysis of disability policy, which is itself an interesting field for the development of these concepts. Decision-makers could also benefit from these insights, which provide a useful framework for deeper understanding of current changes and a starting point for finding new solutions.

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References

Barnes, C. 2012. Understanding the Social Model of Disability: Past, Present and Future, in: N. Watson, A. Roulstone and C. Thomas (eds.). *Routledge Handbook of Disability Studies*. London and New York: Routledge, pp. 12–29.

Bartkowski, J. 2014. Położenie społeczno-ekonomiczne i jakość życia osób niepełnosprawnych w Polsce, in: B. Gąciarz, S. Rudnicki (eds.), *Polscy (Nie)pełnosprawni: od kompleksowej diagnozy do nowego modelu polityki społecznej*. Kraków: Wydawnictwa AGH, pp. 45–104.

Byrne, D. 1998. *Complexity Theory and the Social Sciences. An Introduction*. London: Routledge.

Drozdowski, R., and Szlendak, T. 2013. Socjologia wobec złożoności współczesnego świata, *Studia Socjologiczne* 4(211): 8–17.

Dudzińska, A. 2010. *Życie z niepełnosprawnością w Warszawie 2010. Raport z badań diagnostycznych*. Warszawa: Stowarzyszenie Rodzin i Opiekunów Dzieci z Zespołem Downa „Bardziej kochani".

Gąciarz, B. 2014a. Model społeczny niepełnosprawności jako podstawa zmian w polityce społecznej, in: B. Gąciarz, S. Rudnicki (ed.), *Polscy (Nie)pełnosprawni: od kompleksowej diagnozy do nowego modelu polityki społecznej*. Kraków: Wydawnictwa AGH, pp. 17–44.

Gąciarz, B. 2014b. W kierunku nowego modelu polityki społecznej, in: B. Gąciarz, S. Rudnicki (ed.), *Polscy (Nie)pełnosprawni: od kompleksowej diagnozy do nowego modelu polityki społecznej*. Kraków: Wydawnictwa AGH, pp. 377–392.

Gąciarz, Barbara. 2014c. Wstęp, in: B. Gąciarz, S. Rudnicki (ed.), *Polscy (Nie)pełnosprawni: od kompleksowej diagnozy do nowego modelu polityki społecznej*. Kraków: Wydawnictwa AGH, pp. 7–16.

Gąciarz, Barbara, Kubicki, Paweł, and Rudnicki, Seweryn. 2014. System instytucjonalnego wsparcia osób niepełnosprawnych w Polsce — diagnoza dysfunkcji, in: B. Gąciarz, S. Rudnicki (eds.), *Polscy (Nie)pełnosprawni: od kompleksowej diagnozy do nowego modelu polityki społecznej*. Kraków: Wydawnictwa AGH, pp. 105–126.

Gąciarz, B., Ostrowska, A., and Pańków, W. 2008. *Integracja społeczna i aktywizacja zawodowa osób niepełnosprawnych zamieszkałych w małych miastach i na terenach wiejskich. Uwarunkowania sukcesów i niepowodzeń*. Warszawa: Wydawnictwo IFiS PAN.

Gell-Mann, M. 1995. *The Quark and the Jaguar: Adventures in the Simple and the Complex*. New York: W. H. Freeman.

Golinowska, S., Sowa, A., and Wilmowska-Pietruszyńska, A. 2012. Funkcjonowanie orzecznictwa lekarskiego oraz działalność lekarzy orzeczników w systemie zabezpieczenia społecznego i wspierania zatrudnienia, *Polityka Społeczna*, *Special Issue* 2: 26–31.

Grammenos, S. 2010. Indicators of Disability Inequality in Europe. Report prepared for the Academic Network of European Disability experts (ANED).

Kubicki, P. 2013. "Najlepsze praktyki instytucjonalnego wsparcia osób niepełnosprawnych na poziomie spółeczności lokalnych i regionalnych, ze szczególnym uwzględnieniem obszarów edukacji powszechnej, doradztwa i kształcenia zawodowego, pośrednictwa na rynku pracy. dostępu do kultury, korzystania z transportu publicznego," Report prepared as part of the project 'From a comprehensive diagnosis of situation of people with disabilities to a new model of disability policy'. Kraków: Akademia Górniczo-Hutnicza.

Lawson, A., and Priestley, M. 2009. Monitoring the Implementation of the UN Convention on the Rights of Persons with Disabilities in Europe: Principles for the Identification and the Use of Indicators. Report prepared for the Academic Network of European Disability experts (ANED).

Livneh, H., and Parker, R.M. 2005. Psychological Adaptation to Disability: Perspectives From Chaos Theory and Complexity Theory, *Rehabilitation Counseling Bulletin* 49(1): 17–28.

Luhmann, N. 1995. *Social Systems*. Translated by J. Bednarz, Jr. with D. Baecker. Stanford: Stanford University Press.

Luhmann, N. [1981] 1994. *Politische Theorie im Wohlfahrtsstaat*, Polish edition *Teoria polityczna państwa bezpieczeństwa socjalnego*, translated by G. Skąpska. Warszawa: Wydawnictwo Naukowe PWN.

Nowak, A., Borkowski, W., and Winkowska-Nowak, K. 2009. *Układy złożone w naukach społecznych. Wybrane zagadnienia*. Warszawa: Wydawnictwo Naukowe SCHOLAR.

Room, G. 2011. *Complexity, Institutions and Public Policy: Agile Decision-making in a Turbulent World*. Cheltenham: Edward Elgar.

Rudnicki, S. 2014. Niepełnosprawność i złożoność, *Studia Socjologiczne* 2(213): 43–61.

Rudnicki, S. 2013. "Szanse na integrację społeczną i dobrobyt osób z niepełnosprawnościami. Uwarunkowania społeczne, ekonomiczne i prawno-instytucjonalne realizacji polityki integracyjnej w Polsce," Report

prepared as part of the project 'From a comprehensive diagnosis of situation of people with disabilities to a new model of disability policy'. Kraków: Akademia Górniczo-Hutnicza.

Skąpska, G. 1994. Wstęp, in: Niklas Luhmann, *Teoria polityczna państwa bezpieczeństwa socjalnego*. Warszawa: Wydawnictwo Naukowe PWN, pp. 7–17.

Sojak, R. 2013. Socjologiczny syndrom Münchhausena. Złożoność w teorii i praktyce, *Studia Socjologiczne* 4(211): 51–66.

Valentinov, V. 2013. Corporate social responsibility and sustainability: insights from Boulding and Luhmann, *International Journal of Sustainable Development and World Ecology* 20(4): 317–324.

Valentinov, V. 2014a. K. William Kapp's theory of social costs: A Luhmannian interpretation, *Ecological Economics* 97: 28–33.

Valentinov, V. 2014b. The Complexity-Sustainability Trade-Off in Niklas Luhmann's Social Systems Theory, *Systems Research and Behavioral Science* 31: 14–22.

Valentinov, V. 2015. Form equilibrium to autopoiesis: a Luhmannian reading of Veblenian evolutionary economics, *Economic Systems* 39(1): 143–155.

Szydłowski, M., and Tambor, P. 2010. Złożoność, in: *Encyklopedia Filozofii Przyrody*. Retrieved 20.01.2014 [http://www.kul.pl/hasla-nadeslane,art_20941.html].

Urry, J. 2005. The Complexities of the Global Theory, *Culture and Society* 22(5): 235–254.

Warren, K., Franklin, C., and Streeter, C.L. 1998. New Directions in Systems Theory: Chaos and Complexity, *Social Work* 43(4): 357–372.

Waszkielewicz, A. 2008. Dostęp do świadczeń w ramach funduszy strukturalnych, in: *Polska droga do Konwencji o prawach osób niepełnosprawnych ONZ*. Kraków: Fundacja Instytut Rozwoju Regionalnego.

White, L. 2001. 'Effective Governance' Through Complexity Thinking and Management Science, *System Research and Behavioral Science* 18: 241–257.

WHO. 2001. *International Classification of Functioning, Disability and Health*. Geneva: World Health Organization.

WHO. 2011. *World Report on Disability*. Geneva: World Health Organization.

Wojtowicz-Pomierna, A. 2010. Polityka państwa wobec osób niepełnosprawnych: dylematy systemowe, in: A.I. Brzezińska, R. Kaczan, K. Smoczyńska (eds.), *Diagnoza potrzeb i modele pomocy dla osób z ograniczeniami sprawności*. Warszawa: Wydawnictwo Naukowe SCHOLAR, pp. 267–281.

Biographical Note: Seweryn Rudnicki (Ph.D.), sociologist and psychologist, lecturer at AGH University of Science and Technology (Department of Humanities). In recent years he has been engaged in studying social aspects of innovation and the use of knowledge from the social sciences to resolve business and social problems.

E-mail: sew.rudnicki@gmail.com