



# Max Weber Lecture Series

MWP 2007/04

Rights of Non-humans?

Electronic Agents and Animals as New Actors in  
Politics and Law

Lecture Delivered January 17<sup>th</sup> 2007

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**EUROPEAN UNIVERSITY INSTITUTE  
MAX WEBER PROGRAMME**

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ISSN 1830 7736

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Printed in Italy  
European University Institute  
Badia Fiesolana  
I – 50014 San Domenico di Fiesole (FI)  
Italy

<http://www.eui.eu/>  
<http://cadmus.eui.eu/>

**Abstract:**

Personification of non-humans is best understood as a strategy of dealing with the uncertainty about the identity of the other, which moves the attribution scheme from causation to double contingency and opens the space for presupposing the others' self-referentiality. But there is no compelling reason to restrict the attribution of action exclusively to humans and to social systems, as Luhmann argues. Personifying other non-humans is a social reality today and a political necessity for the future. The admission of actors does not take place, as Latour suggests, into one and only one collective. Rather, the properties of new actors differ extremely according to the multiplicity of different sites of the political ecology.

**Keywords:**

non-humans, animals, person, personification, legal person



## *Rights of Non-humans?*

### *Electronic Agents and Animals as New Actors in Politics and Law\**

**GUNTHER TEUBNER**

JWG-University of Frankfurt

Lecture delivered on 17<sup>th</sup> January 2007  
Max Weber Programme, Villa La Fonte,  
European University Institute

#### **I. The Rats of Autun<sup>1</sup>**

*In 1522 rats were placed on trial before the ecclesiastical court in Autun. They were charged with a felony: specifically, the crime of having eaten and wantonly destroyed barley crops in the jurisdiction. A formal complaint against rats of the diocese was presented to the bishop's vicar, who thereupon cited the culprits to appear on a day certain, and who appointed a local jurist, Barthelemy Chassenee to defend them. Chassenee in his plea cited a remarkable range of obscure and forgotten authors, as well, of course, as various relevant anathemas in the Old and New Testaments -- God's*

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\* For helpful comments I would like to thank Jean Clam, Malte Gruber and Bruno Latour as well as the anonymous reviewers.

<sup>1</sup> The following account is an abridged excerpt of William Ewald (1995) "Comparative Jurisprudence (I): What Was It Like to Try a Rat", 143 *American Journal of Comparative Law*, 1889-2149, 1898 ff. He relies on two sources, Edward P. Evans (1906) *The Criminal Prosecution and Capital Punishment of Animals*, London: Faber and Faber (1987) 18-20; Walter Woodburn Hyde (1916) "The Prosecution and Punishment of Animals and Lifeless Things in the Middle Ages and Modern Times", 64 *University of Pennsylvania Law Review*, 696-730, 706 f. An extensive legal historical account of animal punishment, Karl von Amira (1891) *Thierstrafen und Thierprozesse*, Innsbruck: Wagner. There is some confusion over what is meant by 'legal actor'. Some people argue that no courts have ever given trees legal standing *as actors* and when organizations or individuals take action on behalf of trees, this does not turn the trees into legal actors. Of course this depends on the definition. In this article it will be argued that it is attribution of communicative events to an entity as "its" acts and the attribution of rights to an entity that transforms this entity into an actor. And if an agent acts on behalf of this entity then the "actor" is not the agent but the entity itself.

*cursing of the serpent in the Garden of Eden; the law in Exodus that an ox which gores a man or a woman to death is to be stoned, and its flesh not to be eaten; Jesus's malediction of the barren fig tree of Bethany; the story of the Gadarene swine. He also cites Virgil, Ovid, Cicero, Aristotle, Gregory the Great, the Institutes of Justinian, Moses, various patristic theologians, and Pico della Mirandola. He reports numerous examples of successful anathemas pronounced by medieval saints against sparrows, slugs, leeches, eels, and even an orchard. Upon his compelling procedural arguments, the court, unable to settle on the correct period within which the rats must appear before the court, adjourned on the question sine die, and judgment for the rats was granted by default. The rats had won their case.*

*From the ninth century to the nineteenth, in Western Europe, there are over two hundred well-recorded cases of trials of animals. The animals known to have been placed on trial during this period include: asses, beetles, bloodsuckers, bulls, caterpillars, chickens, cockchafers, cows, dogs, dolphins, eels, field mice, flies, goats, grasshoppers, horses, locusts, mice, moles, pigeons, pigs, rats, serpents, sheep, slugs, snails, termites, weevils, wolves, worms, and miscellaneous vermin.*

*Not always did the animals win their case. Some animals were severely punished, burnt at the stake; others merely singed and then strangled before the carcass was burned. Frequently the animal was buried alive. A dog in Austria was placed in prison for a year; at the end of the seventeenth century a he-goat in Russia was banished to Siberia. Pigs convicted of murder were frequently imprisoned before being executed; they were held in the same prison, and under substantially the same conditions, as human criminals.*

In medieval and Renaissance Europe and also in other cultures, the world of law was populated with non-human beings, with ancestors' spirits, gods, trees, holy shrines, intestines, birds' flight, to all those visible and non-visible phenomena to which communication could be presupposed and which included the potential to deceive, to lie, to trick, and to express something by silence.<sup>2</sup> Today, under the influence of rationalizing science, the number of actors in the legal world has been drastically diminished. After the scientific revolution, after philosophical enlightenment, after methodological individualism dominating the social sciences, after psychological and sociological analysis of purposive action, the only remaining plausible actor is the human individual. The rest is superstition. To be sure, the law still applies the construct of the juridical person to organizations and states.<sup>3</sup> But increasingly, especially under the influence of legal economics, this practice has been devalued as merely an "analogy", a "linguistic abbreviation" of a complex legal relationship between individuals, as a "trap" of corporatist ideologies, at best as a "legal fiction", a superfluous myth, that should be replaced by the nexus model which conceives the organization as a multitude of contracts between individuals.<sup>4</sup>

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<sup>2</sup> Peter Fuchs (1996) "Die archaische Second-Order-Society: Paralipomena zur Konstruktion der Grenze der Gesellschaft", 2 *Soziale Systeme*, 113-130, 120 ff.

<sup>3</sup> For an illuminating comparative law analysis, Katsuhito Iwai (1999) "Persons, Things and Corporations: Corporate Personality Controversy and Comparative Corporate Governance", 47 *The American Journal of Comparative Law*, 583-632.

<sup>4</sup> For the nexus model of the corporation, Arman A. Alchian and Harold Demsetz (1972) "Production, Information Costs, and Economic Organization", 62 *American Economic Review*, 777-795; from a legal point of view Frank H. Easterbrook and Daniel R. Fischel (1993) *The Economic Structure of Corporate*



Only human individuals can be actors. However, recently, this conviction received a massive blow. The ecological movement fighting for the rights of non-humans successfully raised the provoking question: Should Trees Have Standing?<sup>5</sup> And increasingly, constitutional rights have been extended to animals.<sup>6</sup> Does this mean we are travelling back to medieval times: "What Was It Like to Try a Rat"?<sup>7</sup> Can non-human objects bring legal actions? Is law now exploiting nature itself for the sake of its relentless rule production? These questions change indeed the quantity and quality of legal subjectivity and the law's relationships to the environment. The ecological movement has again raised the question as to which "living" units can rightly claim the status of political and legal actor. Who are these new actors in the political ecology? Environment protection groups are still the easiest cases of "new" actors. More difficult is the case for future generations? Even more for animal species? Plants? Landscapes? And what about languages? Cultures?

Another blow to the orthodoxy of methodological individualism came from the information technologies. Are electronic agents actors? Does artificial intelligence create new spiritual entities - the angels of our time<sup>8</sup> - in the world of information processing?<sup>9</sup> The question is whether these new actors - animals and electronic agents - fighting for their interests and even for full-fledged constitutional rights are nothing but social collectives who rightly or wrongly express their sympathies for non-human entities and ask to be formally accepted as legal actors (anthropocentric view)? Or is social communication extending its capacities to include different autonomous processes in its environment and thus respect their eigenvalues (ecocentric view)? Or are law and politics directly linking up with other "living", "pulsating" "autonomous" processes which would steer their rule production into new directions (juridicentric or sociocentric view)?

Ambitious efforts to theorize these political and legal trends are rare. Mother Gaia Autopoiesis dwelling in the deep ecology<sup>10</sup> is not very attractive to serious theorists.

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*Law*, Cambridge/MA and London: Harvard University Press; for a critical view e.g. William W. Bratton and Joseph A. McCahery (2001) "Incomplete Contracts Theories of the Firm and Comparative Corporate Governance", 2 *Theoretical Inquiries in Law*, 1-38.

<sup>5</sup> Christopher D. Stone (1972) "Should Trees Have Standing? Toward Legal Rights for Natural Objects", 45 *Southern California Law Review*, 450-501.

<sup>6</sup> Many authors see this as nothing but "symbolic" legislation with minimal impact upon practice, e.g. Ulrich Stelkens (2003) "Erweitert das neue Staatsziel 'Tierschutz' die behördliche Prüfdichte bei der Genehmigung von Tierversuchen?", 25 *Natur und Recht*, 401-406. Others view these constitutional norms as a legal consequence of important cultural and political changes, Hans-Georg Kluge (2004) "Staatsziel Tierschutz - Am Scheideweg zwischen verfassungspolitischer Deklamation und verfassungsrechtlichem Handlungsauftrag", 5 *Zeitschrift für Rechtspolitik*, 10-14; Malte-Christian Gruber (2006) *Rechtsschutz für nichtmenschliches Leben: Der moralische Status des Lebendigen und seine Implementierung in Tierschutz-, Naturschutz- und Umweltrecht*, Baden-Baden: Nomos, 160 ff.

<sup>7</sup> Ewald/Amira.

<sup>8</sup> Michel Serres (1995) *Angels: A Modern Myth*, Paris: Flammarion.

<sup>9</sup> See, Werner Rammert and Ingo Schulz-Schaeffer (2002) "Technik und Handeln: Wenn soziales Handeln sich auf menschliches Verhalten und technische Abläufe verteilt", in: Werner Rammert and Ingo Schulz-Schaeffer (ed.) *Können Maschinen handeln? Soziologische Beiträge zum Verhältnis von Mensch und Technik*, Frankfurt: Campus, 11-64; sceptical Peter Fuchs (1991) "Kommunikation mit Computern? Zur Korrektur einer Fragestellung", 29 *Sociologia Internationalis*, 1-30. For a legal analysis in the context of constitutional law in the internet, Vagios Karavas (2005) *Digitale Drittwirkung der Grundrechte im Internet*, Frankfurt: Juristische Dissertation.

<sup>10</sup> James E. Lovelock (1979) *Gaia: A New Look at Life on Earth*, Oxford: Oxford University Press.

Among several theoretical interpretations of agency beyond the human individual I want to choose two of the most provocative efforts, Niklas Luhmann and Bruno Latour.

Luhmann offers a totally new reality status to the collective actor. Of course, recognizing collective actors as such has a long-standing tradition.<sup>11</sup> But Luhmann has the bold idea to change their identity altogether. He does not any longer identify the usual suspects as collective actors, Otto von Gierke's (in)famous *reale Verbandspersönlichkeit*, Emile Durkheim's *conscience collective*, James Coleman's pooled resources, or Maurice Hauriou's institutions.<sup>12</sup> Instead - *talk incorporated*. A collective actor is not a group of people but a series of messages. Under the double condition that a chain of communications communicates about itself, i.e. creates a self-description, and that communicative events are attributed to this self-description as actions, the social reality of a collective actor is emerging with decision-making structures of its own and binding effects on the social system. Under these conditions it is definitely excluded to reduce collective action to individual action, as methodological individualism would dictate.<sup>13</sup> Thus, Luhmann reformulates the criteria of agency, whether for humans or non-humans. No longer: What kind of ontological properties (mind, soul, reflexive capacities, empathy) does an entity possess in order to "be" an actor - social, legal or otherwise?<sup>14</sup> Instead, two changes occur: First, under certain conditions, the "environing" social system, i.e. a closed and autonomous ensemble of recursive communications which encounters the entity, constructs this entity via the semantic artefact of an "actor". Second, it is the surrounding social system - and not the entity itself - that constitutes identity, capacity for action and communication, responsibility, rights and duties - in short, attributes the subjectivity of its artefacts.<sup>15</sup> Individual as well as collective actors are created by social attribution. Their social reality lies in the socially binding self-description of an organized social system as a cyclical linkage of identity and action attribution.

A state becomes a collective actor, not because it has certain natural properties or a specific organisational form. Rather it is the international system of war and peace that constructs its actors and thereby forces ethnic/territorial entities to take on the form of an institutionalised state if they are supposed to participate in international politics. Minimal requirement for the international political system is the organised capacity of collective communication.<sup>16</sup> Similarly, it is the market that constructs firms as

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<sup>11</sup> *Locus classicus* Ernst H. Kantorowicz (1957) *The Kings' Two Bodies. A Study in Mediaeval Political Theology*, Princeton: Princeton University Press.

<sup>12</sup> For the concept of „real corporate personality“: Otto von Gierke (1902) *Das Wesen der menschlichen Verbände*, Leipzig: Duncker & Humblot; for collective conscience Emile Durkheim (1933) *The Division of Labor in Society*, New York: Free Press, 79 ff.; for pooled resources, James S. Coleman (1990) *Foundations of Social Theory*, Cambridge: Harvard University Press, 325 ff.; for norm complexes, Maurice E. Hauriou (1933) *Aux sources du droit: le pouvoir, l'ordre et la liberté*, Paris: Bloud & Gay.

<sup>13</sup> Niklas Luhmann (1995) *Social Systems*, Stanford: Stanford University Press, Ch. 5 VI. Connecting the concept of the collective actor to the juridical person, Gunther Teubner (1988) "Enterprise Corporatism: New Industrial Policy and the 'Essence' of the Legal Person", 36 *The American Journal of Comparative Law*, 130-155.

<sup>14</sup> Niklas Luhmann (2000) *Organisation und Entscheidung*, Opladen: Westdeutscher Verlag, Ch. 13 IV.

<sup>15</sup> The importance of attribution for the constitution of "complex actors" is highlighted by Fritz Scharpf (2000) *Interaktionsformen: Akteurzentrierter Institutionalismus in der Politikforschung*, Opladen: Leske & Budrich, 97.

<sup>16</sup> Niklas Luhmann (1998) "Der Staat des politischen Systems: Geschichte und Stellung in der Weltgesellschaft", in: Ulrich Beck (ed.) *Perspektiven der Weltgesellschaft*, Frankfurt: Suhrkamp, 345-380, 352; Niklas Luhmann (2000) *Die Politik der Gesellschaft*, Frankfurt: Suhrkamp, 224 ff.

collectives, otherwise they are nothing but bundles of individual contracts.<sup>17</sup> *Nomen ossibus inhaeret* - once the legal system has abandoned that old prejudice and equipped "spiritual substances" too with *nomina* by giving them rights of action, then the law can link up to entirely different conflictual dynamics which enhance its production of norms. The invention of the legal person was law's great cultural contribution to the organisational revolution in which attribution of action was expanded beyond natural people. The social substratum of the legal person which has been the object of so many controversies is understood once the bold idea is accepted that the law attributes legal personality not only to individual human beings but also, under certain conditions, to mere flows of communications.

However impressive this theoretical move appears, it does not go far enough to cover the far-reaching ambitions of the ecological movement and the cyber revolution. Collectives, i.e. social systems between human individuals, as actors - this is the point where Luhmann stops and where Latour begins. In Latour's account, a multitude of new actants and hybrids that cannot be identified with human individuals or with collective actors are entering the scene and radically transforming today's political ecology. Latour's provocation speaks for itself:

"Political ecology ... bears on complicated forms of associations between beings: regulations, equipment, consumers, institutions, habits, calves, cows, pigs ... a collective experimentation on the possible associations between things and people ... a network of quasi-objects whose relations of subordination remain uncertain and which thus require a new form of political activity adapted to following them."<sup>18</sup>

I want to develop three arguments about the controversy between these two sociologists:<sup>19</sup>

1. Regarding both Luhmann and Latour: Personification of non-humans is best understood as a strategy of dealing with the uncertainty about the identity of the other, which moves the attribution scheme from causation to double contingency and opens the space for presupposing the others' self-referentiality.
2. Beyond Luhmann: There is no compelling reason to restrict the attribution of action exclusively to humans and to social systems. Personifying other non-humans is a social reality today and a political necessity for the future.
3. Beyond Latour: The admission of actors does not take place, as he suggests, into one and only one collective. Rather, the properties of new actors differ extremely according to the multiplicity of different sites in the political ecology.

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<sup>17</sup> Gunther Teubner (1993) "The Many-Headed Hydra: Networks as Higher-Order Collective Actors", in: Joseph McCahery, Sol Picciotto and Colin Scott (ed.) *Corporate Control and Accountability*, Oxford: Clarendon Press, 41-60, 44 ff.

<sup>18</sup> Bruno Latour (1998) "To Modernise or to Ecologise? That is the Question", in: Bruce Braun and Noel Castree (ed.) *Remaking Reality: Nature at the Millenium*, London: Routledge & Paul, 221-242, 229, see also 234 f. For the theoretical background, Bruno Latour (2005) *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford: Oxford University Press.

<sup>19</sup> Another attempt to correlate Luhmann and Latour can be found at Lorentzen (2002) "Luhmann Goes Latour: Zur Soziologie hybrider Beziehungen", in: Werner Rammert and Ingo Schulz-Schaeffer (ed.) *Können Maschinen handeln? Soziologische Beiträge zum Verhältnis von Mensch und Technik*, Frankfurt: Campus, 101-118.

## II. Personification: Coping with Uncertainty

Why do societies personify non-humans? There are many motives that have been suggested to explain personification in contemporary society.<sup>20</sup> Economists refer to saving transaction costs in multi-party contracts, sociologists point to coordination advantages of resource pooling, while lawyers tend to stress the “legal immortality” of incorporated objects - the church, the state, the corporation.<sup>21</sup> Luhmann hypothesizes that once social systems are personified, they gain considerable positional advantages in contacts with their environment.<sup>22</sup> Latour envisions chances to widen the number of potential candidates for participating in the political ecology.<sup>23</sup> These are important insights; nevertheless, I would like to stress a different aspect. In encounters with non-human entities, their personification turns out to be one of the most successful strategies of coping with uncertainty. Personification which transforms a subject-object relation into an Ego-Alter-relation does not produce Ego’s certainty about Alter but makes Ego’s own action possible in situations where Alter is intransparent. Treating an object “as if” it were an actor transforms the uncertainty about causal relations into the uncertainty about how the partner of the interaction will react to Ego’s actions. This puts Ego in a position to choose the course of action, to observe Alter’s reactions and to draw consequences.<sup>24</sup> Of course, personification is only one among many strategies to reduce uncertainty which works only under certain conditions.

Usually, personification implies three presumptions, three fictions as it were - black box, double contingency and addressability. These are helpful when we do not know the internal properties of the non-human object. Since its internal dynamics are intransparent and incalculable, the first presumption treats the object as a black box.<sup>25</sup> The object will be seen as indeterminate but as determinable by the external relation which makes observation of the black box possible, especially in its reactions to external influences. Learn from experimenting with the black box! The second presumption is more dramatic. It attempts to project a peculiar internal dynamics into the black box via replacing the attribution scheme of causation by double contingency.<sup>26</sup> When people treat non-humans as persons they create a relation of double contingency with them. The choices of the partners are seen in a relation of mutual dependency. Usually, in a third presumption, addressability, people make a whole range of anthropomorphic assumptions about non-humans and they act accordingly, as if they

<sup>20</sup> For an overview of motives for personification in “traditional” societies, Ewald (fn.).

<sup>21</sup> For transaction costs, Oliver Williamson (1985) *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, New York: Free Press; for resource pooling, James Coleman (fn. 12), 325 ff.; for continuity, William Blackstone (1771) *Commentaries on the laws of England: In four books*, Philadelphia: Robert Bell, 467 ff.

<sup>22</sup> Luhmann (fn. 13) Ch. 5 VI.

<sup>23</sup> Bruno Latour (2004) *Politics of Nature: How to Bring the Sciences into Democracy*, Cambridge, Mass.: Harvard University Press, 53 ff.

<sup>24</sup> From a different theory perspective, Daniel Dennett comes to a similar result with the idea of the “intentional stance”, Daniel Dennett (1987) *The Intentional Stance*, Cambridge, Mass.: MIT Press, 15 ff. However, while Dennett speaks of “prediction” of “rational action”, in the framework of systems theory, personification refers to the orientation of any human action, irrespective of their rationality.

<sup>25</sup> Ranulph Glanville (1979) “The Form of Cybernetics: Whitening the Black Box”, in: James C. Miller (ed.) *General Systems Research*, Louisville, 35-42.

<sup>26</sup> Talcott Parsons and Edward A. Shils (ed) (1951) *Toward a General Theory of Action: Theoretical Foundations for the Social Sciences*, New York: Harper & Row, 16; for an elaboration Luhmann (fn. 13) Ch. 3.

were humans.<sup>27</sup> The non-humans are supposed to process meaning self-referentially as the humans do, to be equipped with freedom of choice, with self-preserving strategies, reflective capacities, phenomenal world views of their own, empathy and understanding, even with the ability to communicate.<sup>28</sup> These projections do not dispose of the former uncertainty about causal connections. They transform them, however, into a different uncertainty, namely, concerning the inquiries about what questions one should ask the other. And indeed, this is exactly the uncertainty about how to deal with other actors.<sup>29</sup>

In this view, there is no difference between human and non-human actors, strange as this may sound. "Personality means nothing but the symbolic signification of the capacity to participate in communication, and it does not matter and it is historically variable whether the relevant entities are gods, animals, spirits, robots or humans."<sup>30</sup> In both cases, through personification, the social system "parasitises" the intrinsic dynamics of autonomous processes in its environment. It is an old motive: "I called you with your name, you are mine!" (Jesajah 43.1). Personification utilizes the self-continuation of external processes for the self-continuation of social institutions. It cannot of course incorporate those processes as such into society. As an operationally closed system, it is not capable of integrating the operations of other systems in its environment. But communication can make itself dependent on the environment through the nature of its own structural links. For this, the semantic artifact of the "person" is used.<sup>31</sup> This is true for people as well as for organizations and states. In this way, society can, as it were, take others' grist to its own mill.<sup>32</sup>

The open question is to what classes of non-humans can this strategy of uncertainty reduction be extended. The extension works perfectly with social systems when they are transformed into collective actors. Thus, extending the construct of the juridical person to chains of communication entails much more than a simple abbreviation of complex inter-individual relations, as methodological individualism tends to argue. Legal personification empowers non-human entities, formal organizations, associations, corporations and states to enter into full-fledged political negotiations and intricate economic transactions. They gain considerable control over their environment and at the same time bind the internal decision-making process. Collective actors, especially once they are formally recognized by law, form their own strategies, preferences and interests.<sup>33</sup> They are not reducible to those of their members, managers, or owners.<sup>34</sup> The law stabilizes social expectations about collective actors by

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<sup>27</sup> Hans Geser (1989) "Der PC als Interaktionspartner", 18 *Zeitschrift für Soziologie*, 230-242, 233.

<sup>28</sup> For a good overview, Rammert and Schulze-Schaeffer (fn. 9).

<sup>29</sup> Gordon Pask (1962) "A Proposed Evolutionary Model", in: Heinz von Foerster and George W. Zopf (ed.) *Principles of Self-Organization*, Oxford: Oxford University Press, 229-248, 230.

<sup>30</sup> Lorentzen (fn.19) 105, my translation.

<sup>31</sup> Niklas Luhmann (1991) "Die Form 'Person'", 42 *Soziale Welt*, 166-175.

<sup>32</sup> Michael Hutter and Gunther Teubner (2000) "Homo Oeconomicus and Homo Juridicus: Communicative Fictions?", in: Theodor Baums, Klaus J. Hopt and Norbert Horn (ed.) *Corporations, Capital Markets and Business in the Law: Liber Amicorum Richard M. Buxbaum*, Den Haag: Kluwer, 569-584, 574 ff.

<sup>33</sup> This is of course controversial: Hans Geser (1992) "Towards an Interaction Theory of Organizational Actors", 13 *Organization Studies*, 429-451; Dorothea Jansen (1997) "Das Problem der Akteurqualität korporativer Akteure", in: Arthur Benz and Wolfgang Seibel (ed.) *Theorieentwicklung in der Politikwissenschaft: Eine Zwischenbilanz*, Baden-Baden: Nomos, 193-235, 201 ff.; Scharpf (fn. 15).

<sup>34</sup> Arnold Windeler (2001) *Unternehmensnetzwerke: Konstitution und Strukturierung*, Wiesbaden: Westdeutscher Verlag, 225 ff.; Gunther Teubner (1985) "Company Interest – The Public Interest of the

constructing them as juridical persons, granting them rights and imposing upon them duties and responsibilities. In addition, law has made higher-order-collective-actors possible like groups of companies and federal states that could not exist without the technique of legal personification.

### III. Beyond Luhmann: Actants and Hybrids

But why should the personification strategy be limited to social systems? What about reducing uncertainty in relation to other non-humans? This is where Luhmann and Latour differ. Luhmann, of course, has good reasons to restrict action capacity to social systems.<sup>35</sup> It is the historical success of collective action which legitimates personification of social systems and delegitimizes the old personification of rats and the new one of computers. But Latour asks the bold question whether in today's ecological crisis, which increases drastically the uncertainty about political choices, we are not compelled to experiment with the personification of some non-humans.

Some years ago, the same problem was raised in the law of contract. When people were asked to enter contracts with non-humans - with a street car and its automatic ticket machine, with a money-withdrawal machine, with a complex contracting computer programme implying many conditional choices, with a computerized network on the internet - the legal validity of these contracts was in doubt. Where, after all, is the meeting of minds? After long scholarly debates and controversial court decisions, legal answers were found in the bold construct of "de-facto-contracting" and in its less conspicuous doctrinal alternatives. What de-facto-contracting does is to reduce the elaborate requirements for contracting partners - all kinds of psycho-juridical capacities like the intention to act, the intention to enter a business relation, the intention to make a contractual declaration, the intention to bind oneself legally - to a minimum, namely, to the factual entry into a standardized business relation.<sup>36</sup> Since this decapitation of the sophisticated *homo contrahens* would amount to a revolution in contract law,<sup>37</sup> a more conservative, less visible, but actually similar solution - reducing legal action capacities for the partners to the transaction - was found (better: was hidden) in the law of unjust enrichment.<sup>38</sup> Even if your contract with the street-car or other non-humans is invalid, you have gained from this "transaction" and the law requires you to compensate for the unjust enrichment. That means you have to pay the contractual price. A third "solution" is to apply the old good-faith principle of *protestatio factum contrarium* which is supposed to keep contract law intact by excluding the explicit denial of the party to strike a contract and reach the result of a binding contract with machines nevertheless.<sup>39</sup> Of course, this is a spurious solution.

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Enterprise 'in Itself?', in: Ralf Rogowski and Ton Wildhagen (ed.) *Reflexive Labour Law: Comparative Studies in the Regulation of Employment and Industrial Relations*, Deventer: Kluwer, 21-52.

<sup>35</sup> For Luhmann, artificial intelligence has to do with the manipulation of symbols, but not with the formation of meaning, Niklas Luhmann (1997) *Die Gesellschaft der Gesellschaft*, Frankfurt: Suhrkamp, 522.

<sup>36</sup> *Loci classici*: Günter Haupt (1941) *Über faktische Vertragsverhältnisse*, Leipzig: Weicher; Spiros Simitis (1957) *Die faktischen Vertragsverhältnisse als Ausdruck der gewandelten sozialen Funktion der Rechtsinstitute des Privatrechts*, Frankfurt am Main: Klostermann.

<sup>37</sup> "Nuclear bomb of legal thought", Heinrich Lehmann (1958) "Faktische Vertragsverhältnisse", 11 *Neue Juristische Wochenschrift*, 1-5, 5.

<sup>38</sup> This is today the dominant opinion on how to deal with de-facto contracts. For an overview see, Ernst Kramer, in: Kurt Rebmann et al. (ed.) (2004) *Münchener Kommentar zum Bürgerlichen Gesetzbuch: Schuldrecht Allgemeiner Teil. § 241-432*, München: Beck, vor § 241, 63 ff., 66.

<sup>39</sup> Dieter Medicus (2004) *Bürgerliches Recht*, München: Carl Heymanns, note 191.

Equally with the other solutions, it reduces the psycho-juridical requirements of contracting to the de-facto-transaction. The reduction does not happen within the cause of action, but is hidden within a technical legal exception of good faith. A fourth, this time almost invisible, answer of the law is property, to combine the quasi-actions of the non-human contract partner with the actions of an individual person or an organization, usually the owner of the non-human, and to attribute contractual acts - meeting of minds, breach of contract, performance - to this socio-technical ensemble, safely hidden behind the screen of the well-acquainted juridical person.

With the advent of electronic contracting, the situation in contract law has become more dramatic, especially in situations when computers are acting on both sides of the contractual relation.<sup>40</sup> Recently, contract law in the US and in Canada did come up with bold reactions. Sec. 14 Uniform Electronic Transactions Act states:

“A contract may be formed by the interaction of electronic agents of the parties, even if no individual was aware of or reviewed the electronic agents’ actions or the resulting terms and agreements.”<sup>41</sup>

What is possible now is a contract by interaction between electronic agents without the knowledge or action of an individual human being.<sup>42</sup> The purpose of this rule is specifically to prevent a party from claiming lack of contractual intent when electronic agents have interacted to form a contract without human intervention, thereby reducing transaction costs by use of electronic contracts.<sup>43</sup> This leaves legal doctrine with a dilemma: Either the law constructs “electronic agents”<sup>44</sup> no less capable of possessing “intentionality” than other non-human entities accorded legal person status, especially

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<sup>40</sup> Tom Allen and Robin Widdison (1996) "Can Computers Make Contracts?", 9 *Harvard Journal of Law & Technology*, 25-52. For this situation, some might argue that people are not asked to enter contracts with non-humans – they are asked to enter contracts with humans (either individual or collective) through the medium of a computer or an automatic ticket machine. Of course, computers are not parties to the contracts, but the question is whether they act as agent or quasi-agent for a human principal, particularly in situations where the computer enters the contract only under certain conditions.

<sup>41</sup> Section 14 of the Uniform Electronic Transactions Act at

<http://www.law.upenn.edu/bll/ulc/fnact99/1990s/uea99.pdf>.

<sup>42</sup> In the US, such a rule has been proposed by the American Law Institute, National Conference of Commissioners on Uniform State Laws, Proposed Amendments to Uniform Commercial Code Article 2 - Sales, as approved at the Annual Meeting of the American Law Institute on May 13, 2003, at <http://www.ali.org/ali/2601-03-actions.htm>. For the reasons to introduce this rule, see [http://www.nccusl.org/Update/uniformact\\_summaries/uniformacts-s-ucc22003.asp](http://www.nccusl.org/Update/uniformact_summaries/uniformacts-s-ucc22003.asp). See also Sec. 202, 213 of the Uniform Computer Information Transactions Act, at <http://www.law.upenn.edu/bll/ulc/ucita/ucita01.htm>. For Canada, see Sec. 21 of the Canadian Uniform Electronic Commerce Act, at <http://www.law.ualberta.ca/alri/ulc/current/euecafin.htm>. In some Canadian states, e.g. British Columbia, these rules have been transformed into valid law.

<sup>43</sup> Juanda L. Daniel (2004) "Electronic Contracting under the 2003 Revisions to Article 2 of the Uniform Commercial Code: Clarification or Chaos?", 20 *Santa Clara Computer & High Technology Law Journal*, 319-346, 327.

<sup>44</sup> An electronic agent is defined as "a computer program or an electronic or other automated means used independently to initiate an action or respond to electronic records or performances in whole or in part, without review or action by an individual." UCC 2-103(1)(g). See also Emily M. Weitzenböck, "Electronic Agents and Formation of Contracts", 9 *International Journal of Law and Information Technology*, 204-234 and Eleanna Kafeza, Irene Kafeza and Dickson K. W. Chiu (2005) *Legal Issues in Agents for Electronic Contracting*, Proceedings of the 38th Hawaii International Conference on System Sciences 2005, 1-10, 2, at

<http://csdl2.computer.org/comp/proceedings/hicss/2005/2268/05/22680134a.pdf>.

corporations. Or computers lack “intentionality” because they do not have the ability to independently process meaning separate and apart from the instructions of the operating program. This issue becomes especially urgent when computers appear on the scene that can learn and produce autonomous transmissions through artificial intelligence.<sup>45</sup> A computer using artificial intelligence technology is said to be trainable and can learn from experience. It will have the ability to autonomously modify its instructions and produce transmissions not contemplated by the human-party interest. The more autonomous electronic agents become the less lawyers can hope to get along with minor changes of law, or comfort themselves that existing law, perhaps with minor modifications or relaxations, can accommodate the problem.<sup>46</sup> Here the electronic agent clearly would not have the intention of the principal since there are no pre-programmed parameters guiding the computer's actions. However, under the new rules, the act of the electronic agent would still be attributed to the principal.<sup>47</sup> In spite of this generous attribution, the law still has to decide how to deal with the actor status of a computer and with its psycho-juridical capacities. Is the law of agency applicable? In contract law, in their relation to the principal, agents are supposed to dispose of a certain decisional autonomy. What happens in cases of fraud and mistake? Common law concepts of “intent”, “belief”, “deceit” would have to be re-interpreted in electronic contracting especially for those situations where the participation of humans is restricted to complex programming and the computers dispose of secondary elasticities.

In German law, similar controversies have created academic debate.<sup>48</sup> When electronic agents conclude contracts and these acts appear as declarations of the machine itself, the contractual act is attributed to the human person behind the computer, even if the distance is far and the computer programme “decides” between different options.<sup>49</sup> Legal doctrine is divided upon the question whether this attribution works via the general principles of property and contract law, or via an analogy of the rules of the “servant” (*Botenschaft*) or the rules of agency (*Stellvertretung*). According to the chosen doctrinal construct, the risks of the electronic agent’s malfunctioning will be apportioned differently. If the computer is seen as nothing but the human operator’s property, a malfunctioning would be seen as a “mistake in calculation” (*Kalkulationsirrtum*), which is treated as irrelevant as a mistake in inducement, with the consequence that the owner will be strictly bound to the contract without any possibility to rescind the contract. Intricate doctrinal questions are raised in this context. Can the law take account of the relatively autonomous position of the computer and modify the rules of the law of agency so that the psychological qualities of a human agent can be

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<sup>45</sup> Lawrence B. Solum (1992) "Legal Personhood for Artificial Intelligences", 70 *North Carolina Law Review*, 1231-1283, 1267.

<sup>46</sup> Samir Chopra, Amir and Laurence Laurence White (2004) "Artificial Agents - Personhood in Law and Philosophy." in *Proceedings of the 16th European Conference on Artificial Intelligence*, Amsterdam: IOS Press, 635-639.

<sup>47</sup> Daniel (fn. 43) 329 ff.

<sup>48</sup> Wettig, Steffen and Eberhard Zehendner (2003). "The Electronic Agent: A Legal Personality under German law?" *Proceedings of the Law and Electronic Agents Workshop*, 97-112; Kai Cornelius (2002) "Vertragsabschluss durch autonome elektronische Agenten", 5 *Multimedia und Recht*, 353-358; Norman Thot (1999) *Elektronischer Vertragsschluss: Ablauf und Konsequenzen*, Frankfurt: Lang; Heiko Denk, Sandra Paul, Alexander Rossnagel and Martina Schnellenbach-Held (2004) "Der Einsatz intelligenter Softwareagenten im elektronischen Vergabeverfahren", 5 *Neue Zeitschrift für Baurecht und Vergaberecht*, 131-135; Peter Sester (2004) "Vertragsschluss und Verbraucherschutz beim Einsatz von Software-Agenten", 4 *Informatikspektrum*, 311-322.

<sup>49</sup> Karl Larenz and Manfred Wolf (1997) *Allgemeiner Teil des Bürgerlichen Rechts*, München: Beck.



substituted by the cognitive qualities of the computer programme? In particular, can the category of a mistake (divergence between consciousness and facts) be transferred to computer programmes? This should be possible at least when different programmes about contractual conditions and factual contingencies are combined. The courts have produced contradictory decisions.<sup>50</sup>

Different legal issues are raised in relation to contractual and tortious liability.<sup>51</sup> On the issue of *respondeat superior* (*Erfüllungsgehilfe, Verrichtungsgehilfe*) three positions are debated: apart from the responsibility for human errors, computer mistakes are seen by some authors as *force majeure* without any liability of the owner. Others suggest strict liability for computer mistakes or a contractual guarantee as an implied condition of contract. They treat artificial agents as mere tools of their operators, or as mere means of communication. All actions of artificial agents are attributed to the agent's operator. They come up with a stricter liability principle than that which applies to human agents and their principals. Most interesting for our context is a third position which makes an analogy to *respondeat superior* and defines normalised expectations for the technical capacities of computer action. This indeed would be the equivalent of duty of care applicable to human actors and corporate actors.

Latour tells us, probably without knowing about these juridical inventions, within an elaborate theoretical interpretation, what the law is doing here, which in turn does not reflect Latour's theory. In Latour's perspective one would interpret the new developments in contract law such that the law extends the concept of the actor far beyond individuals and collectivities by giving legal recognition to what he calls "actants" and "hybrids". This double move reacts to the problem that the model of collective action does not work if directly applied to the personification of other non-humans. This would require us to presume, counter-factually, that those non-humans dispose of highly communicative capacities which makes sense, of course, for organizations and states. But talking to trees is the privilege of Prince Charles. Contracts with computers cannot be valid if the law rigorously required the proof of certain socio-psycho-juridical properties. Indeed, social systems, before they convey personality to other social systems request a whole range of credible indicators for communicative capacities, i.e. criteria of addressability. They treat them as persons only on the condition that they have good reasons to presuppose self-referential processes of meaning behind their social addresses and at the same time they request close structural coupling with their communication. Social systems attribute subjectivity only if (1) they presuppose the operation called *Verstehen* behind their communicative artefacts called persons, (2) they presuppose that these artefacts presuppose the same in their partners, and (3) the attributing social system itself has developed an internal irritability toward the contributions of those 'subjects'. These are highly developed communicative capacities that work only for humans and also for social systems. However they do not work for other non-humans.

Latour's first successful move is to introduce "actants".<sup>52</sup> The trick is to drastically reduce the usual requirements for action capacity. Latour throws out any anthropomorphic

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<sup>50</sup> Rescission of a contract is not possible in case of a *calculation* error of the software, BGHZ 139, 177ff., 180f. However, rescission is possible in case of a *transmission* error of the software, BGH NJW 2005, 976. . The rationale for such a distinction in apportioning the risk of software defects is not evident, Gerald Spindler (2005) "Irrtümer bei elektronischen Willenserklärungen: Anmerkung zu BGH VIII ZR 79/04", 55 *Juristenzeitung*, 793-795, 795.

<sup>51</sup> In detail, see Manfred Wolf (1989) "Schuldnerhaftung bei Automatenversagen", 29 *Juristische Schulung*, 899-902.

<sup>52</sup> Latour (fn. 23) 62 ff.

assumptions that accompany full-fledged “actors” - basically real people and organizations. The presupposition of highly developed communicative capacities which makes sense in the transfer from humans to social systems needs to be given up in the case of other non-humans if one intends to use personification there as a technique of uncertainty reduction. Forget reflective capacities, phenomenal world views, empathy, the operation called *Verstehen*, and the ability to communicate. What is left is the minimal presupposition of double contingency. Latour describes actants as non-humans to which the apparatus of science has given a voice.<sup>53</sup> Their minimal requirement is a resistance, a “recalcitrance” which they exert and which cannot be overcome by existing scientific knowledge.<sup>54</sup> On the basis of present knowledge the questions cannot be answered with a Yes or No, rather they produce an uncertainty, a controversy, an embarrassment.<sup>55</sup> This is comparable to the “points of friction” in the sense of Steve Fuller which resist being subsumed under given laws and structures.<sup>56</sup> On the background of given regularities of the natural and social world they are seen as irregularities, as “anomalies”. In such a situation, when the new Kuhnian paradigm to deal with these anomalies is not in sight, a different way out of the dilemma is to transform these objects into “actants”, i.e. to presuppose a relation of double contingency with them. This makes an experimental “interaction” possible by presupposing alternative courses of action, independent of the vexing indeterminacy/determinacy question. Playing chess with Deep Blue is a case in point. Similarly, contracting with machines becomes possible. It is sufficient to know what questions to ask them and to answer their questions in order to conclude a contract (respectively to enter into a relation of unjust enrichment), independent of any psycho-juridical capacities. And contracting between electronic agents with artificial intelligence without any human interference can be interpreted as communication between actants.<sup>57</sup> Probably it makes sense to introduce a distinction here. While Latour seems to argue that treatment as “actants” makes practical-political sense for all kind of natural objects, a successful interaction seems to be possible with a narrower range of actants, to whom the capacity for dealing with proto-meaning can be ascribed, i.e. actually to adaptable software agents and domesticated animals.<sup>58</sup>

Latour makes a second, potentially more successful approach. He introduces „hybrids“.<sup>59</sup> Mere double contingency will not suffice in many situations where the social system requires higher-level action capacities. Regularly, this would leave the black boxes in a situation of paralysis, even if the ability to choose among alternatives is attributed to them. Although science has given them a voice, they are lacking the communicative skills that are needed in a variety of contexts. Latour expresses this with the metaphor: actants need not only a language and a resistant body but also the capacity to form associations.<sup>60</sup> In order to give non-humans nevertheless the capacity for political action in those circumstances, one needs to procreate hybrids, i.e. associations of human actors and non-human actants. Now, as in any association, a pooling of resources takes place. The troubling recalcitrance of the actants, their relation

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<sup>53</sup> Latour (fn. 23) 68 ff.

<sup>54</sup> Latour (fn. 23) 77.

<sup>55</sup> Latour (fn. 23) 62 ff.

<sup>56</sup> Steve Fuller (1994) "Making Agency Count: A Brief Foray into the Foundation of Social Theory", 37 *American Behavioral Scientist*, 741-753, 748.

<sup>57</sup> Daniel (fn. 43) 329 ff.

<sup>58</sup> Lorentzen (fn.19) 106. For a similar distinction, see, Gruber (fn. 6).

<sup>59</sup> Latour (fn. 23) 70 ff.

<sup>60</sup> Latour (fn. 23) 71.

of double contingency, is now pooled with the communicative skills of real people. "The psycho-systemic competence deficits of non-humans are adequately compensated by the distributed intelligence of social systems."<sup>61</sup> Combining human and non-human properties within hybrids allows non-humans to participate in political negotiations, economic transactions and legal contracting. With hybrids we need not move to de facto-contracting. The principal-agent relation in electronic contracting could be re-interpreted in the law as a hybrid relation in its own right. In case of need we can always find people and corporate actors in order to attribute to them the psycho-juridical requirements of contract law.

A nagging question remains. Is this move from actants to hybrids, from non-humans to associations between humans and non-humans, not simply a return to human - individual or collective - actors? At first sight yes, since it is the human beings within the hybrid who are acting visibly. The more elaborate action capacities will be identified only in human actors that participate in the hybrid.<sup>62</sup> But there is an important difference between straight human actors and strange hybrids. It is the strong influence that non-humans exert on individual or collective actors within the association that makes the difference.<sup>63</sup> Electronic contracting in complex matters without any participation of human contract parties is a case in point. To reformulate the matter in systems theory terms, the permanent irritations that non-humans exert on humans are responsible for the peculiarities of the hybrid. As a consequence, the hybrid itself develops its own phenomenal world view, its self-perception as a living entity, its own order of preferences, its own social needs and political interests, different from an individual or collective acting on its own. The perturbation cycles between the components of the hybrid which are tightly structurally coupled to each other make hybrids comparable to corporate actors.<sup>64</sup> They, in their turn, cannot be identified exclusively with the actions of their agents, usually their managers. In hybrids, the participating individual or collective actors are not acting for themselves but are acting for the hybrid as an emerging unit, the association between human and non-humans. They do so in the same way as managers are not acting on their own behalf but are "agents" representing their "principal", which is the corporation as a social system.<sup>65</sup> To be sure, there will be conflicts of interest and orientation between the members, as expressed in the well-known agency problem in corporate actors. They exist similarly in the associations between humans and non-humans. And similar institutional arrangements - e.g. the formalization of directors' duties and liabilities, the ultra vires doctrine, the test of representativeness in class action - are there to limit the agency problem that exists, likewise in the associations between humans and non-humans. Indeed, legal doctrine on

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<sup>61</sup> Lorentzen (fn. 19) 110.

<sup>62</sup> The same argument is regularly put forward against the action capacities of collective actors, most prominently by Max Weber (1978) *Economy and Society*, Berkeley: University of California Press, 13 ff.

<sup>63</sup> Raymund Werle (2002) "Technik als Akteurfiktion", in: Werner Rammert and Ingo Schulz-Schaeffer (ed.) *Können Maschinen handeln? Soziologische Beiträge zum Verhältnis von Mensch und Technik*, Frankfurt: Campus, 119-139, 126.

<sup>64</sup> For the concept of perturbation cycles and its application in corporate contexts, see, Gunther Teubner (2002) "Idiosyncratic Production Regimes: Co-evolution of Economic and Legal Institutions in the Varieties of Capitalism", in: John Ziman (ed.) *The Evolution of Cultural Entities: Proceedings of the British Academy*, Oxford: Oxford University Press, 161-181.

<sup>65</sup> And neither the shareholders nor the stakeholders, as some tend to assume.

electronic contracting discusses similar remedies in the “principal-agent”-relation between the contracting computer and the human parties to the contract.<sup>66</sup>

If non-human objects are personified as actants and are becoming part of an association between humans and non-humans, we are on safe ground to describe the relation between humans and non-humans within those hybrids in terms of structural coupling, irritation and perturbation cycles. Closed communicative processes are structurally coupled to closed non-communicative processes - whether psychic, physical, organic or informational - and they co-evolve each according to their own path-dependency, but within a common structural drift. More challenging is the question whether, within hybrids, communicative processes in the strict sense occur between non-humans and humans, and whether a genuine social system is emerging in their interrelations. Everything depends on the nature of the interactional dynamics within the hybrid. If the hybrid treats its non-human components as persons, a strange asymmetric communication will take place. Human beings talk to natural objects “as if” they were persons.<sup>67</sup>

The situation is comparable to the most famous borderline cases of communication, to the religious prayer, i.e. to private or public communication with God. “Communication with God testifies the existence of the other for itself”<sup>68</sup> - whatever His reality status. With its internal fictions, the communication process itself compensates for the deficits of the communicative competences of the non-humans.<sup>69</sup> In this context, communicative acts of humans which are directed to non-humans pose no problem. But what about the “speech acts” of the non-humans? The answer depends on the test whether within the interaction the contributions of the non-humans will be interpreted according to the scheme of utterance, information and understanding.<sup>70</sup> It is based on the fiction that the communicating unit has communicative capacities. But the fictional character does not matter, as long as their contributions maintain the flow of communication.<sup>71</sup> “For communication with persons, a name is necessary, perhaps a recognisable image, but not the analysis of organic or psychic processes ‘within’ the person”.<sup>72</sup> Whenever the communicative process within the hybrid is able to identify events that can be “understood” as “utterances” of the non-human which entail a certain “information”, then a genuine social system is emerging. The “answers” that we receive to our questions from adaptable software agents or domesticated animals are fulfilling what is required by the trinity of information, utterance and understanding. Thus, although non-humans cannot be successfully attributed the psychic competencies of human beings, a genuine social system is emerging in the asymmetric interaction between humans and non-humans.<sup>73</sup>

<sup>66</sup> Daniel (fn. 43) 344 ff.

<sup>67</sup> Geser (fn. 27) 33 analysing communication with computers, speaks of actor fictions which have social consequences.

<sup>68</sup> Niklas Luhmann (1987) “Läßt unsere Gesellschaft Kommunikation mit Gott zu?”, in: Niklas Luhmann (ed.) *Soziologische Aufklärung 4: Beiträge zur funktionalen Differenzierung der Gesellschaft*, Opladen: Westdeutscher Verlag, 227-235, 232.

<sup>69</sup> Werle (fn. 63) 128 ff.

<sup>70</sup> Luhmann (fn. 13) Ch. 4 II.

<sup>71</sup> Fuchs (fn. 2) 114: “To express it in an idiosyncratic formulation, an event will be communicatively ‘autopoieticised’ when it is observed by a different event as the utterance of an information (as this difference) so that further events can link up with the indication of the one or the other side.”

<sup>72</sup> Niklas Luhmann (2000) *Die Politik der Gesellschaft*, Frankfurt: Suhrkamp, 375 (fn.16).

<sup>73</sup> Lorentzen (fn.19) 101, comes close to this when he defines hybridity as “mutual exchange of meaning and proto-meaning”. For him, the asymmetry is accounted for in the term proto-meaning. Fuchs (fn.19)

Once, hybrids are established as communicative interaction between non-human actants and human beings, these special types of social systems will under certain limited conditions be personified as actors in their own right. In this case, hybrids become members of a larger social system, in the same way as traditional individuals and collectives are its members. This is what Latour has in mind when he speaks of the political participation of hybrids in institutionalised politics.<sup>74</sup> One needs to be precise, however, as to what membership means in this context. It is not simply a relation between a whole and its part. In a social system which consists of nothing else but communicative events, real people cannot be its parts, they live in the environment of the social system. The same is true for physical objects and animals. Within the operations of a social system, humans and non-humans are reconstructed as persons - "personae" in the old meaning.<sup>75</sup> To call these artifacts "persons" means taking up the double sense of the etymological sources of *persona* = "mask" and *personare* = "sounding through something", but in a new sense. The person is the name for the logical locus at which a social system creates "character masks" which internally refer to human and non-human processes in its environment, creating the possibility to be perturbed by them from the outside, without ever being able to reach out for them or to incorporate them. These persons are communicative structures, semantic artefacts of communication to which the operations are attributed as their actions.

But there is an important qualification. These "personae" - individuals, collectives and hybrids - are not just fictions, constructs, fairy-tales, superstitions, dreams without external support.<sup>76</sup> As attribution points within the social system, they serve at the same time as boundary posts where permanent contacts to the relevant dynamics in their environment take place.<sup>77</sup> Via structural coupling they establish contact through communication to outside "real", dynamic, pulsating processes; processes that occur in the environment of communication, be they flesh-and-blood-people or non-human processes in nature or technology. Through the mask of its "persons", social systems make an effective, though indirect, contact with humans and non-humans. While they cannot communicate with them, they can massively irritate them and in turn be irritated by them. This is equivalent to what Latour would call a relation of mutual experimenting.<sup>78</sup> In tight perturbation cycles, communication irritates psychic processes as well as organic and physical processes with its selective "enquiries", conditioned by assumptions about their internal properties, and is irritated by the "answers", in turn highly selectively conditioned. It is in this recursiveness that social systems are "exploiting" human and non-human energies. In short, the

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121, identifies the asymmetry of communication with "non-human processors" in higher requirements for the component of "understanding". Geser (fn. 27) 33, underlines the asymmetry within the interaction. Werle (fn. 63) 134, speaks of a "situation of social action with an actor on the one side and an actor fiction on the other."

<sup>74</sup> Latour (fn. 23) 53 ff.

<sup>75</sup> Hans Rheinfelder (1928) *Das Wort 'persona': Geschichte seiner Bedeutungen mit besonderer Berücksichtigung des französischen und italienischen Mittelalters*, Halle: Niemeyer.

<sup>76</sup> In the relation between communication and its environment „persons serve as structural coupling“, Luhmann (fn. 31) 153.

<sup>77</sup> More details in Hutter and Teubner (fn. 32) 574 ff.; Fuchs (fn.19) 116 ff.

<sup>78</sup> Latour (fn. 23) 75.

communicative process concentrates its irritations of humans and non-humans on the person-constructs, the internal points of action attribution.<sup>79</sup>

Apart from this internal and external dimension of personification of non-humans - attribution of action and structural coupling to the outside world - there is a temporal dimension which we might call the biography of persons. This is where the poor points of attribution become rich, where learning takes place and experience is accumulated. In this sense, hybrids are also full-fledged biographies, histories of experiments between humans and non-humans that do influence social and political life.

The result of all this is that indeed non-humans gain access to social communication, albeit in a rather indirect way.<sup>80</sup> The law plays a special role in this game; it stabilizes non-human personality by granting legal status to the hybrids via the construct of the juridical person, by attributing to them the capacity to act, by giving them rights, burdening them with duties and making them liable in several forms of legal responsibility.<sup>81</sup> In particular, granting them access to justice means opening up the legal process to entirely new interests, especially ecological interests. There are many signs today that the law is beginning to re-engineer its procedural and conceptual machines for producing the new inhabitants of the political ecology. The inclusion of ecological rights in political constitutions, the gradual juridification of animal rights, the change in legal language from the semantics of "protection of nature" via "ecological interests" to "rights" of living processes, the slow process of granting standing to ecological associations, the expanding conceptualisation of ecological damages without attribution to an individual are indicators that the law is preparing again to create a new breed of actors.<sup>82</sup> Trees do have standing.

#### **IV. Beyond Latour: Multiplying the multiplicity of actors**

Introducing actants and hybrids into the political ecology has thus shown to be a liberating move. Freed from narrow anthropomorphic assumptions, objects can now be treated as actors once they obey Latour's minimal requirement that "*they modify other actors through a series of trials that can be listed thanks to some experimental protocol*".<sup>83</sup> The new political actors - actants and hybrids - who are competing and cooperating with the old actors - individuals and collectives - have the potential of radically transforming the political ecology provided they have undergone a political admission procedure in which a two-tier process takes place. One is the presentation of new candidates and an open political debate, the other is the formalised decision process in which new actors are admitted while other candidates are rejected since they do not fulfil the requirements of a peaceful co-existence.<sup>84</sup>

<sup>79</sup> Fuchs (fn.19) 122, speaks of "generalisation of personality" as a "technique of attribution which is able to interpret any event ... as behaviour and to endow it with double contingency".

<sup>80</sup> Latour (fn. 23) 102 ff.

<sup>81</sup> Latour (fn. 23) 108 ff.

<sup>82</sup> Regina Ogorek (1999) "Recht und Tier: Eine traurige Begegnung", 18 *Rechtshistorisches Journal*, 247-259; Christine Godt (1997) *Haftung für ökologische Schäden: Verantwortung für Beeinträchtigungen des Allgemeingutes Umwelt durch individualisierende Verletzungshandlungen*, Berlin: Duncker & Humblot; Thomas Benedikt Schmidt (1996) *Das Tier - ein Rechtssubjekt? Eine rechtsphilosophische Kritik der Tierrechtsidee*, Regensburg: Roderer; Dietmar von der Pfordten (1995) "Die moralische und rechtliche Berücksichtigung von Tieren", in: Julian Nida-Rümelin and Dietmar von der Pfordten (ed.) *Ökologische Ethik und Rechtstheorie*, Baden-Baden: Nomos, 231-244; Günter Erbel (1986) "Rechtsschutz für Tiere", 27 *Deutsches Verwaltungsblatt*, 1235-1258.

<sup>83</sup> Latour (fn. 23) 75 (emphasis by Latour).

<sup>84</sup> Latour (fn. 23) 108 ff.

Does this mean that Luhmann's more demanding actor-concept - communicative addressability - needs to be rejected? Do we also have to reject several other definitions of agency, that refer to *potestas in seipsum*, to self-reference, to processing of proto-meaning, to consciousness, to interpretive action, to introspection, to reflection upon one's actions, to anticipation of future events and planning, to reasoned argument or to rational maximization of interests? Concrete historical and contemporary experience create doubts. Remember what happened to the rats of Autun. Historically, the number of non-human actors seems to vary - of course, not with the progress of science but with changes in social organization principles. These historical changes in actor-capacities also affected collectives and, as the examples of slaves and women show, even for individual human beings.<sup>85</sup> In contemporary society, the situation is not different. Social movements, for example, are powerful actors in politics, while in law they have no status as juridical persons. No rights, no duties, no liability, no access to justice. At the beginning of the twentieth century, labour unions were facing the same schizophrenic situation while their counterparts, the corporations, were well-nourished juridical persons. Methodological individualism in economics denies actor status to firms, while the law even endows them with constitutionally guaranteed human rights, and international politics gives the MNEs voice and status in international negotiation rounds. The criteria of action capacity and responsibility in law differ drastically from those in psychology and medicine whatever strange compromises are struck in the court room.<sup>86</sup> The *homo oeconomicus* is endowed with criteria of agency and rationality which are different from the *homo juridicus*, the *homo politicus*, the *homo sociologicus*. Will not a similar differentiation of social sectors take place when it comes to the admission of actants and hybrids? The rational maximizers of socionics may successfully enter certain economic markets, perhaps the courtrooms in law, but probably fail to enter the halls of politics, let alone the sites of morality and religion.

Here we can make use of Rammert's idea of a gradualized concept of agency.<sup>87</sup> A forced decision between a maximalist and a minimalist agency concept does not do justice to the variable properties of the candidates for agency, instead a gradualization of the concept is able to describe different degrees and intensities of agency according to different contexts. Rammert distinguishes three levels: causation, contingency, intentionality. We need, however, to take one step further and ask the question how different codes and programmes decide about life and death of actors in different social systems.

If we follow Latour in his search for new candidates in the political ecology, then it is crucial to answer this question: Where are the institutional sites of the political ecology that make the collective decisions about their admission? Latour seems to oscillate between two different places. One place is what he calls the *septième cité* in Boltanski's and Thévenot's republic of justification.<sup>88</sup> There the political ecology is described as only one of several autonomous discourses in society. Latour's other place is the great unified collective of today's society where all professions come together and make their specific contribution to the fundamental decision as to whether new

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<sup>85</sup> For the difference between archaic and modern societies, Fuchs (fn.19) 115.

<sup>86</sup> For the conflicts between science and law in the courts, Sheila Jasanoff (1995) *Science at the Bar: Law, Science and Technology in America*, Cambridge, Mass.: Harvard University Press.

<sup>87</sup> Rammert and Schulze-Schaeffer (fn. 9).

<sup>88</sup> Latour (fn. 18); Luc Boltanski and Laurent Thévenot (1991) *De la justification: Les économies de la grandeur*, Paris: Gallimard.

actors should be represented as candidates and which ones should be accepted as new members.<sup>89</sup> I would prefer to argue for a third option. There is little empirical evidence for a new autonomous discourse, for a full-fledged social system called political ecology. Even more unrealistic is it to assume that an overarching societal discourse will emerge. Rather, the sites of the political ecology are fragmented, they are dispersed over different social institutions.<sup>90</sup> Mainly, it is the institutionalized political system that is undergoing a transformation from socio-centered politics into a broader political ecology. But also law will transform itself in this direction and will react to the irritations of ecological actants and hybrids. The same is true for the economy and for science. In each of these fields, a profound politicization and ecologization is taking place. “This discursive disorder is a product of a plurality of environmental themes within a difficult to define ‘environmental camp’ and a plurality of ‘ecological appropriations’, generated by the attempt of modern differentiated society to deal with an ever-increasing flow of ecological problems.”<sup>91</sup> The technocratic model of scientism which pretends to calculate ecological effects on society works in none of them. Each of them is developing a double decision mechanism of social reflection which Latour is attributing to the collective as a whole, as an undivided unity.<sup>92</sup> Expressed in evolutionary terms, each subsystem disposes of mechanisms of variation, presenting new candidates of agency and, institutionally separated from it, it disposes of selection mechanism admitting them into the sub-politics of social institutions.

Now the role of the special criteria for agency and rationality of each of these homunculi - *homo oeconomicus*, *juridicus*, *politicus* etc. - becomes clear. They fine-tune the specific selectivity of different social sectors in their ecological relations. They determine when and how law, politics, science and economy will in their specific political ecologies decide to be disturbed by their different environments. They determine when and how they will not let themselves be moved by them. This is not one central decision of the collective that all sectors of society have to follow. No democratic centralism governs the political ecology but rather a pluralism of language games. It is only under sharply defined conditions that law gives life to and takes life from its *homo juridicus* as opposed to how other social systems treat their *homo oeconomicus*, *homo politicus*, *homo sociologicus* etc.<sup>93</sup> Different personifications act as system-specific filters in relation to the ecological impulses, even if they come from the same sources. According to its historically changing combination of codes and programmes, each social system will shape its own presumptions about the person’s degree of freedom. This explains why the rats of Autun under certain historical conditions have only occasional access to justice. Each subsystem attributes in a different way to its person’s actions, responsibilities, rights and duties, and equips its actors with capital, interests, intentions, goals and preferences.<sup>94</sup> Each subsystem, as it were, designs its own psychology, creates actor-models with specific criteria of relevance. These actor-models depend on specific needs of the

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<sup>89</sup> Latour (fn. 23) 136 ff.

<sup>90</sup> This appears most clearly in the work of David Sciulli (1991) *Theory of Societal Constitutionalism: Foundations of a Non-Marxistic Critical Theory*, Cambridge: Cambridge University Press.

<sup>91</sup> Oren Perez (2004) *Ecological Sensitivity and Global Legal Pluralism: Rethinking the Trade and Environment Conflict*, Oxford: Hart.

<sup>92</sup> Latour (fn. 23) 128 ff.

<sup>93</sup> Hutter and Teubner (fn. 32) 576 ff.

<sup>94</sup> Latour tries to minimise this pluralisation of worlds of meaning and the concomitant pluralisation of actor concepts, but is compelled at least to recognise it in the form of different “professions” and their different “contributions” to the admission of actants and hybrids into the collective, idem (fn. 23) 136 ff.



subsystems to produce information about the humans and non-humans involved. This multiplication of social persons has decisively determined the historical development of our society.<sup>95</sup> The shift from the stratified society where there is a clear-cut, one-to-one relationship between the person and social stratum to today's individualized society is a consequence of the emergence of a multiplicity of constructs of persons, through which the subsystems can gain access to different capacities of individuals, as well as collectives and other non-humans.

What is your order of "preferences"? - This is the question the economy asks its actors and does so with adaptable software agents. What are your "norm projections"? What are your "legally protected interests"? - this is what the law wants to know from its actors, and does so for animal species represented by ecological groups. Using their specific models of rationality, each institution produces a different actor, even where concretely it is the same, human or non-human, that is involved. In each case there is a different interplay between closure, which in relation to the actor represents the social system's self-reference and openness, referring to the individuals, collectives and hybrids that are involved.

In an economic utility calculation the economic actor is enclosed within the social system and the net utility in each case can be calculated within the system. By contrast, the actor's preferences are undetermined: "De gustibus non est disputandum".<sup>96</sup> Economic calculation can and will say nothing about these matters. They are not reconstructed from internal stocks of information following economic regularities, but simply "taken" from the surrounding environment; to be more precise, reconstructed from external perturbations. And the presence of the new actants and hybrids makes a drastic difference to what happens in a market. The activities of computer programmes in the financial markets that reacted automatically to certain situations and created the threat of a new Black Friday are a striking example.

It is similar in law. Here the closure relates to the internal legal re-construction of external normative expectations. It is true, the internal legal process, with its cognitive, normative and procedural rules, determines right and wrong. But through undefined norm projections, formulations of individual interests, "common sense of justice", the law allows itself to be affected by expectations produced outside the law. The law which traditionally opened itself to real people and to collective actors now increasingly makes itself responsive to the new associations between humans and non-humans. Whenever the law attributes new rights and duties, especially new procedural rules for access to justice which give associations of humans and non-humans a new legal voice, the content of legal expectations is opening to the ecology.

A consequence is that animals and electronic agents will become social actors but at the same time will lead a highly fragmented existence in society. According to the divergent agency conditions, they will appear in very different guises in politics, in the economy, in the law and in other social contexts. But how realistic is it to assume that different social institutions create their own actors and do so in splendid isolation from each other? Has not the law shaped its juridical persons under the heavy influence of

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<sup>95</sup> Dirk Baecker (1992) "Die Unterscheidung zwischen Kommunikation und Bewußtsein", in: Wolfgang Krohn and Günter Küppers (ed.) *Emergenz: Die Entstehung von Ordnung, Organisation und Bedeutung*, Frankfurt: Suhrkamp, 217-268.

<sup>96</sup> George J. Stigler and Gary S. Becker (1977) "De gustibus non est disputandum", 67 *American Economic Review*, 76-90.

political and economic pressures?<sup>97</sup> Are not the new hybrids admitted to society in a permanent conflictual dialogue between the different institutions? Should we not expect the unity of a political ecology à la Latour emerging as an inter-institutional discourse on the admission of new agents, a debate between different social systems, which finds its place outside of traditional institutionalized politics. Again, I would opt not for a convergence of agency within society, instead for its opposite, for an accelerated multiplication of actors within different worlds of meaning. Indeed, institutions are in permanent conflict about questions of life and death for their actors. But the result is not a compromise on the conditions of agency between them, rather a multitude of new differences - now *within* each institution. Social systems do listen to the needs of other social systems, but they do not give up their own requirements of agency. Instead, in different moves of re-entry they combine external and internal requirements and produce internal differences within their agency constructs.

“Actants” and “hybrids” in the emerging ecological discourse in politics need not be equipped with full-fledged legal subjectivity in order to open new political dynamics. Multiple legal distinctions - distinctions between different graduations of legal subjectivity, between mere interests, partial rights and full fledged rights, between limited and full capacity for action, between agency, representation, and trust, between individual, several, group, corporate and other forms of collective responsibility - have the potential to confer a carefully delimited legal status to political associations of ecological actants.<sup>98</sup> And those real fictions may do their work as actors exclusively in institutionalized politics without necessarily appearing as actors in the economy, in science, medicine, religion or somewhere else in society. Legal capacity of action can be selectively attributed to different social contexts.

The result is that law is opening itself for the entry of new juridical actors - animals and electronic agents. The differences in the outcomes, however, are striking. Although in both cases the law uses the same highly formalized conceptual techniques - juridical personality, capacity for legal action, attribution of rights and duties, participation in administrative and judicial procedures - and although in both cases legal personification is creating the conditions of possibility for the entry of non-humans into political, economic and cultural communication, it is the very legal formalism that allows for great variation among the new legal actors. Animal rights and similar constructs create basically defensive institutions. Paradoxically, they incorporate animals in human society in order to create defences against destructive tendencies of human society against animals. The old formula of social domination of nature is replaced by the new social contract with nature.<sup>99</sup> For electronic agents, the exact opposite is true. Their legal personification, especially in economic and technological contexts, creates aggressive new action centers as basic productive institutions. Here, their inclusion into society does not protect the new actors - just the opposite. It is society that needs to defend itself against the new actors. With the social inclusion of cyborgs and electronic agents, new problems of alienation appear at the horizon of the law. Unlike the old problems of alienation, the reification of social relations - *Entfremdung* and *Verdinglichung*<sup>100</sup> - which troubled Marx and Heidegger, the

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<sup>97</sup> The above mentioned different histories of labour unions and enterprises regarding their legal personification furnish a good illustration.

<sup>98</sup> An argument for partial personhood for artificial intelligence is made by Solum (fn. 45).

<sup>99</sup> Michel Serres (1995) *The Natural Contract*, Ann Arbor: University of Michigan Press.

<sup>100</sup> For a reconstruction of an old debate under new conditions, Rahel Jaeggi (2005) *Entfremdung: Zur Aktualität eines sozialphilosophischen Problems*, Frankfurt: Campus.

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personification of electronic agents amounts to a socialization of things which is troubling for our time. In the dynamics of alienation and re-appropriation the question for the law is: Will new constitutional guarantees be in a position to counteract the infamous “Code”, the electronic architecture of the internet? Will economic, social and technical transactions run by electronic agents be brought back under human control?