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FOREWORD

When a new journal is launched, the editors are expected to provide a good answer to the question, “Who needs another philosophy journal, and why?” The following is by way of explanation for the foundation of the *Balkan Journal of Philosophy*. These reasons stem from the answers to two interrelated questions: “What kind of philosophy journal do we envisage this to be?” and “Why exactly are we prepared to work for this kind of journal?”

What kind of journal?

Published under the auspices of the Bulgarian Academy of Sciences, the *Balkan Journal of Philosophy* is a peer-reviewed international periodical, academic in spirit and wide-ranging in its potential readership. Its readers will primarily include professional philosophers in the Balkan region. In addition, it will appeal to scientists and scholars from different fields who maintain a significant interest in philosophy and in multi-disciplinary research involving philosophy.

The aim of the *Journal* is to publish high-quality papers on the most current problems and discussions in philosophy. No philosophical field or expertise is excluded a priori. Special attention will be devoted, however, to the treatment of these problems in the Balkans and south-eastern Europe, and to their influence on the development of philosophy in this region. It is timely and highly necessary to provide a forum for different philosophical voices and traditions in south-eastern Europe. The *Balkan Journal of Philosophy* aims to be such a forum and to publish papers that will serve as inspiration for further philosophical investigations. It means that the journal policy is primarily directed to the *dialogue*: the dialogue between different traditions in philosophy; between different philosophical disciplines and different national philosophies; between professional philosophers and the public; between philosophers and other professionals.

Why this kind of journal?

The journal is called “*Balkan*”, where we take the name in the widest sense, so as to encompass the big region stretching from Slovenia, through other former Yugoslav countries, then Albania, Bulgaria, Macedonia, and Greece, all the way into Turkey, and encompassing in the north Romania as well. After all, Western philosophy was born in Greece and Asia Minor, so the Balkans is its birthplace. We plan to include contributions by philosophers from other European countries, as well as from other continents. We want to promote high quality philosophy in the Balkan region.

And why another philosophy journal? There are two kinds of reasons for it, one more philosophical, and the other cultural. The philosophical reason is that in the region the contrast between philosophical orientations is less marked than in other parts of the world, so that we can easily turn toward a dialogue between different lines of thought. There is a lack of journals on the contemporary scene that are explicitly dedicated to mutual understanding of various orientations.

The cultural reasons have to do with the Balkans themselves. There is too little cooperation between philosophers in the region; there has been a tradition of cooperation of Bulgarian philosophers with their Serbian colleagues, and a very strong tradition of cooperation within the former Yugoslavia, but nowadays the political geography has changed, so that old ties have to be forged anew and the new ones established. We intend to be pioneers in this domain, and to contribute to mutual understanding, so much needed, between intellectuals in the region. We shall therefore dedicate some space to the history of philosophy in the region, stressing similarities and connections, often invisible to nationally oriented specialists in each of the relevant countries. This is our cultural mission. The composition of the editorial board reflects this conviction. The

second motivation is presenting Balkan philosophical production as the whole to other areas of the world, and vice versa, opening the dialogue of the “philosophical Balkans” with other regions. We thus want to do for our region what *Studies in East European Thought* are doing for countries like Poland, Russia, and the Czech republic. The *Balkan Journal of Philosophy* will publish original papers, short discussion papers, and book reviews in English. There will be two issues per year, each of which will contain no more than ten papers. One of these issues will be devoted to a thematic topic while the other will be without thematic limits. When we receive good enough dis-

cussion papers presenting different views on the same topic, they will be published together in a special section called *Discussion Forum*. The idea behind maintaining such a *Discussion Forum* is to provide a territory for debates, where personal or professional biases will not be allowed to discard any point of view, so long as the latter is presented consistently and supported by arguments. We do believe such a liberal discussion policy will contribute to the development of a healthy, critical, and responsible intellectual environment in the philosophical public sphere.

From the Editorial Board

AGENCY AND THE FUTURE

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Pretty much everyone agrees that we cannot change the past. But most of us are convinced that we can change the future.

When one speaks of changing the future, one does not (should not) mean changing it from what it will actually be. The science-fiction prospect of travelling backwards in time to avert disapproved actualities is simply too far-fetched. Rather one (presumably) means “changing it from what it would otherwise be if one did not act on the matter.”

Actually, in the context of agency, there are four futures or—more cautiously formulated—four different ways to looking at the future. They are:

- the future as it will evolve if the agent does not intervene.
- the future as the agent *thinks* it will evolve if he does not intervene.
- the future as it will evolve if the agent does intervene.
- the future as the agent *thinks* it will evolve if he does intervene.

The object of rational planning is to endeavor to realize the optimal result of having the actual future be identical with that which is envisioned as desirable. However, the imperfection of human knowledge being what it is, there is no way to produce a totally failproof guarantee that this will be so.

The realities being what they are, we have no guarantee that the actual future will ever be just as we envisioned it. Slippage is always possible here. So how are we to manage rational planning for the future?

We do, however, have observational access to past futures. And just this affords us with the resources for planning. For the basis of planning is experience.

One thing that we learn from experience is that different ranges of phenomena are variously stable. In parts of the globe the temperature is

volatile, in parts it is uniform. In some cultures life follows a fixed pattern, in others it is in constant flux. But conditions are not always and everywhere benign in this respect.

Experience teaches that our knowledge of the future is spotty. Predicative foresight of the future is only possible with stable phenomena—in matters where the future is like the past. As David Hume rightly insisted, the predicative presupposition that the future is like the past afflicts all of our claims about the future. And we can never have unconditional guarantees here.

All purposive action is future-oriented. It aims at bringing about a condition of things which, in the agent’s judgment, would otherwise not—or *probably* not—obtain. But things being what they are, the agent inevitably acts on the face of potentially mistaken views about the future. A rational agent cannot but acknowledge the possibility of error in the judgment of future events. For it is simply a fact of life that our knowledge of the future is imperfect—that the prospect of being mistaken here is an unavoidable aspect of the human condition.

It is always today; tomorrow never comes. We inevitably live in the present. The future is never a present reality to us, all we ever actually have in hand is the *envisioned* future. Imagination is our only window that is presently open to the future. As far as we are concerned, the future is a thought construct, every bit as unreal as centaurs and unicorns. No-one has ever observed the future.

Aristotle was the first theorists to address explicitly the problem of the future. In *On Interpretation* he noted that the future can be open in respect of its occurrences so that (for example) it is as yet indeterminate which side will prevail in the sea battle projected for tomorrow. Whether this indeterminacy is ontological in that the actual outcome remains undecided or whether it is merely epistemological in that in being unknown and unknowable is an issue debated by philosophers to the present day. Like the future itself, its determination appears to be an open question.

The prime task of scientific inquiry is to give us a better grasp of the future. This automatically makes the discovery of nature's laws into one of the pivotal aims of the enterprise, seeing that, by definition, these laws are always and everywhere the same. Scientific progress always carries advances in predictability in its wake. But the whole course of its history teaches that this affects the course of human affairs to only a very limited extent. The fog of uncertainty in which we make our life's journey never lifts to all that great an extent.

The most stable feature of the world is the inevitability of change. The Greek poet Simonides spoke wisely of the all-devouring truth of time.

And just herein lies the basis for the inherent recalcitrance and uncertainty of human agency. We must live our lives and conduct our affairs with a view to a future whose realities lie largely outside our ken and control. All human endeavor is subject to riskiness and uncertainty. To live is to give hostages to fortune.

FUTURE PHILOSOPHY

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Philosophers address the future with a mix of bravado and resignation: save the Earth, but not General Motors. Or respond as best you can while knowing that we humans never know or control all the relevant variables: don't be surprised if events turn against you; suffer them with dignity. A third alternative is less exuberant than the first, less stoic than the second: address the future with a partial map of our circumstances while expecting that it will have a structure and details largely similar to those of the past.

Philosophers sometimes do more than analyze concepts, recount old theories, marvel at science, or celebrate consciousness; but philosophy isn't arcane wisdom. Supposing that reality may have a comprehensive design, we infer its details by considering the evidence of practical life and science. Both engage us with other people and things, and both make it plausible and likely that nature has an intrinsic form. Our conclusions are tentative and often disputed but there is a trajectory to our speculations. Acknowledging uncertainty, we anticipate the future with evidence that reality to date is structured by this design.

Living in a house and neighborhood, one learns the layout of the rooms and streets. Each house has many rooms; buildings and blocks are occupied by one or many families or tribes. Each tribe has distinctive ways, but all have similar needs so local idiosyncrasies disguise generic similarities in diet, body type, and social practices. Here and throughout nature, qualitative differences are variant expressions of pervasive generic features that include matter, motion, energy transfer, and, at higher orders of complexity, evolution, communication, and government. A final clarification may show that all complexity reduces to the relations of elementary variables (matter, motion, energy, and the shape of spacetime) but that achievement isn't essential to having a well-founded and comprehensive idea of nature's architecture, one that includes us humans.

Our ideas about that design come in three steps: first as practical life requires that we know

our way in the near world, later as science extends our theoretical grasp, finally as metaphysics integrates the findings of practical life and science while giving content to ideas they invoke with insufficient care. Natural laws are an example: we think of them as binding, but are they more than the regularities observed? The hypothesis affirming nature's inherent normativity requires arguments to which practical life and science are mostly indifferent. Why isn't it sufficient, for example, that natural norms reduce to observed regularities and the habit of thinking about them in terms prescribed by a theory? One reason is the possibility of construing regularities in the terms of several or many contrary theories: all might be false but only one can be true if these theories are not disguised versions of one another. A different reason is this proposal's superficiality: it mystifies the occurrence of regularities, though it isn't mysterious that locks open to keys of complementary shape. Philosophy is the dialectical exercise that considers many such issues neglected by practical life and science while devising a theory of categorial form from their piecemeal discoveries. This form—like an architect's sketch—represents nature's most general features, some observed, some inferred (the normativity of laws, for example). The hypotheses of practical life and science are more specific determinations of this abstract map.

The hypothesis ascribing form to the world is a nest of conceptual maps, some general, others specific. The variables are nature's determinables, generic features such as spacetime and location that have a range of values (specific positions, here or there). The variables make nature stable; there is flux because values for the variables often change. Generic features—the variables—organize the maps; practical life and science provide the details. Addressing other people and things, one uses a detailed map to negotiate with or through them. Its more or less explicit categorial framework (properties, spacetime, cause and effect), emergent complexities (the solar system, DNA, and human brains), or cycles

(the seasons, night and day, birth and death) are stable. The rest is adventitious. Mislaying my glasses, I look for them within the space of my home or office; the city street-plan is stable but stores open and close, people come and go. Even these details are anticipated: little rain in January, no snow in July.

The future is uncertain because maps that prefigure our expectations embody two hypotheses of unequal probability. It is likely to a degree converging on certainty that any event in our world will have distinguishing properties, spatiotemporal coordinates, causes, and effects. All the details are less sure: skirts rise and fall in cycles that correlate with market cycles though aberrations are frequent because no inherent norm prescribes order to these cycles and because of causes and effects that are extraneous and unforeseen. Expectations are all the more unreliable if maps are flawed because something critical is unrepresented or misrepresented. Earth wobbles in its orbit because of the Moon; ignore the Moon and calculations predicting Earth's orbit are sure to err. Ignore causality or reduce it to regularity and one won't predict the harm done to the eyes of people who look directly into laser beams.

Why credit philosophy with foresight when it can only identify nature's general—categorical—features, not the particular rhythms and details better known to practical life and science? Because philosophy's generalizing aim is already implicit in every engagement with nature: we register the details while locating them within the context of nature's categorical design. Seeing the particular, we generalize and integrate the generalities; enacting a plan or responding to an impasse, we assume the design that structures our context. We do these two things at once: engage other people or things while locating us and them within a more abstract—categorical—map of our circumstances. For there are always five questions to answer: what am I (or we); what is the ambient world; what is my (or our) relation to it; what would it be good or bad to do; and how can I (or we) know that answers to the foregoing questions are good answers? These are philosophical questions—identified as such because of their generality and because of their self-critical, self-reflective bias—but equally, they are practical questions. They direct us because we want clarity about our circumstances and the cogency of our responses and because we position ourselves for the future, planning now to maximize efficacy then.

Philosophy has two principal responses to circumstances where some changes are predictable but many are not. One is the Aristotelian strategy outlined above: discover nature's categorical form and its principle cycles, then prepare for eventualities whose many details are uncertain. The other tack is Nietzschean: conceive reality in ways appropriate to your aims and values, then construe events as they come in ways prescribed by your interpretation. This strategy works better with the past than the present and future because past events are inert: they are known only as construed. The present and future are not so easily packaged, though Nietzsche implied otherwise: ignore reality's intrusions, be stubborn, affirm your views and values until reality satisfies them. But this posture ignores frustration and error, though we can't ignore either without risking goods or our lives. Heidegger remarked that each of us is "thrown" into circumstances that exceed our control. Uncertainty and surprise are frequent so plans and hypotheses are never more than tentative. Heroic responses sometimes work because circumstances change in our favor; but we are usually obliged to modify plans in ways appropriate to things as they are.

Reflecting on the discoveries of practical life and science, everyone prepares for a future somewhat like our past: much that is general will likely be at it has been; detail will change in ways unforeseen. Philosophy eases the transition because we are good housekeepers: prizing logical rigor and the systematic development of theories or interpretations, we discern nature's design, but have no special insight into the future.

Philosophy also seems prescient in this other way: people who mistake philosophers for seers misconstrue our propensity for seeing things in two ways: as they are and as they ought to be. Sometimes emphasizing *ought* rather than *is*, we project ideals into the future, implying that we know what the future will be given what it should be. This emphasis is critical to human wellbeing because it directs our preparations: we build dikes and better houses; avoiding illness, we seek health. But this power to shape human resolution and our circumstances is, like map-making, a philosophic refinement of ordinary practical skills. Clairvoyance comes only to this: each of us is prudent to a degree because of wanting to alter the future in ways congenial to him or herself. Philosophy is prudence made articulate.

PHILOSOPHY AND THE FUTURE

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Abstract:

Both, the individual and social life, discover the future in so far as they organise the structure of their own life out of their conscious subjectivity. With that consciousness they become aware that the only unconditioned future is dead, my personal disappearing as well as the end of mankind. After this discovery, the only possible action rests the care for all these consciousnesses, who know that there will be an end; such an action is also a free accepted care for those, who are so contingent, but at least know that they are so.

Key words: subjectivity, the end of mankind, care for the contingent, self-knowledge.

“All the best for the future,” this wish is everybody’s talk on different occasions like New Year’s, birthdays or even simple partings. Everybody is also aware of a future, times and again hoping it will go better. And a philosopher is (s)he wishing that in the same way? What can be the task of a philosopher and of philosophy concerning the future, a dimension that is not there, about which there is no reliable knowledge and even the manner how to go on with it is not fully or perhaps only negatively intelligible? “Philosophy and the future” is at the same time not an identical question with a near one, what may be the task and concern of philosophy in the future.

Is philosophy able to say something about the future in a strict, understandable way? And what could be said? Not too much could be the answer of most philosophers; philosophy is thinking and knowing, what is, how reality is in its reasonable form, maybe just that form as it is. Philosophy is a task to elucidate or even to reduce the present and its complexity; why should there be valuable thoughts on something that is not available, like the future?

For this position, there may be the confirmation of some traditional philosophers, who think that the owl of Minerva is only flying in the dawn; the present and its past can be conceived, but these philosophers warn that the limits of our thoughts are restricted to our rationally presentable actuality and the reconstructed genesis of

that actuality. For unknown possibilities there is no rational space in such a philosophy. Maybe there are other and better solutions, like Kant’s, who tries in his critical way to discern a future for further philosophising; that solution, however, is not a mark or destination of the future but only of the present. The same Kant, on the other hand, is also convinced, that a moral eternity for the individuals has begun as their future in the present, but it is restricted to just these people, who have converted themselves to morality. Such a form of hope is a late reminiscence of a more traditional religious hope, that the world is not nonsensical, and that this can be viewed for the individual in a life after death.

This kind of religious hope seems, further, to be secularised in more political beliefs of persons and philosophers,¹ who claim or presuppose that the future will be better; new techniques, a more equal economy or a more democratic or liberal politics will realise a really good life in the future; the instruments of the satisfaction for all strivings are made available by them; thus the fulfilment of all human desires and needs will arrive, and a perfect happiness will be achieved. Such programs are all described in futurology, a science flourishing in the Sixties; and that conception of unlimited progress that can even be seen reflected in the promises of hard knowledge by all types of reductive sciences, with their full and determined expectation of man.

The enumeration of a catalogue of meanings about the future, however, cannot be our concern, and so the philosophical problem of the future cannot be convincingly resolved, in as far as there are no arguments given, before the elaboration of

¹ The exceptional “Philosophy of Hope” by E. Bloch, followed by a series of “Theologies of Hope” is illuminating on this point. After that secularised form, theologians have taken the occasion to reformulate their claims in the non-suspect contemporary language of that philosophy, so that their hope may be supported by the secularised version. But the Exodus, the basic figure in both, was and is a phenomenon of real religious interpretation.

the needed argumentation. Let us therefore ask, what could the future mean and does philosophy as a specific form of interpretation respond to questions about that future.²

In this paper, I accept a view everybody may accept. The future is something experienced by everybody as coming to and even expected by everybody, who is a temporal knowing or interpreting being, or a *being aware of itself as temporal*; that view or acceptance may be considered as a possible thought, in the elaboration of a philosophy, considering the awareness of self-interpreting beings.

Within such a philosophy the questions of man are formulated in a specific terminology or jargon, but these questions are concerning everybody in his own life. Nevertheless, that kind of philosophical formulation of interpretative knowledge is based on the own self-interpretation of man itself, being aware of its own existence and of its existence as temporal, for man has a starting point and is going to an end. Within that little time, which is given, man can be aware and make hypotheses about what he is as asking being; in such a way he may ask questions about his future and the future of his genus, humanity. These questions will be formulated as questions about the elucidation of life and as having perhaps knowable answers in philosophy. If the future is a possible and valid philosophical thought for a man being aware of itself as temporal, then the questions about the future are to treat in different moments, so that the answer can be a valid insight for every man. Just this specific treatment, in which knowledge (not restricted to natural and quantifiable sciences) is formulated, is philosophical knowledge that takes up positive results of sciences and that is at least disputable by and defended against critical remarks, in which personal views are not accepted as such.

The structure of this paper will therefore give an elucidation of basic forms of man as stated before in a philosophical treatment, concerning the awareness of man and the link of this awareness with the future. The questions are therefore: What is and what brings awareness for a conception of man (A)? Is that awareness restricted to individuals (B)? Why is there a temporal dimension to that awareness (C)? How is a philosophical thinking about possible temporality and future possible and valid (D)? What insight gives us this analysis for the future and the views on the future (E)? The philosophical contribution out of this analysing description will perhaps be surprising: the dimension of the future elucidates or expresses in a way, that may be accepted by all man, how living persons are free or may be responsible for their own institutionalised action(s) in the present (F).

A. The most fundamental question is: What is the awareness of persons?

The question of the future or of the expectation thereof is a question of time, appearing to a person or a living being, that is aware of him or herself. Basically is herewith, that the living being is being aware of itself and this awareness is in the form of asking something about him or herself. This basic form may be called a living self-understanding, and then it is not reflected, but is the manner of living as being aware.

Although it may not appear immediately in its awareness, such a living aware being has as living being a very specific mark;³ every living being is a kind of organisation, or self-organisation with a direction: it strives minimally for self-conservation. And, as a kind of supplement, the living being has also a living future, not for itself as own person, but even for its life in its procreation; if my procreations are not me, than they are at least of my life for my genus. In his own awareness, on the other hand, the person is not only striving for and producing his procreation for that living conservation, but he is caring or working for conservation, even if he is aware that there will be an end at his own life.

The self-understanding or self-awareness of the person is in this way conscious of the direction of his own time, in which there is minimally that kind of future for the living consciousness, so long as the conservation of its own body and awareness is possible. But with this awareness there arrives a strange, but important thing: the self with this awareness can be reflected; if it is reflected as the self of self-conservation, there is a possibility of a rational self-understanding, that is conserving and promoting only life; so the conservation of life is the structure, given by modern techniques (in physical inspiration) and economical powers; it is the enduring further going, endless progress, started with the individual and going further and further (perhaps) to the end of times.

But the real self-awareness may be of an other kind; if it is conceivable, it is rational acting under rational laws, or autonomy, a self-awareness, that is, it concerns itself not only as living being, but also just as a form of awareness. Whether that form of self-awareness is restricted

² The difference between man and philosophy is an expression of my philosophical attitude; that philosophy is a constitutive negation of all "natural" or more immediate interpretations of man, going from sense certainty to religion, then philosophy is defined in German Idealism.

³ Individualistic philosophical theories forget this basic assumption.

to the individual or if there are forms of self-awareness, which may be attributed to the community, should not be decided now. The minimal level of that awareness or that self-interpretation, however, is that the person itself must do it, and if a person would refuse it, there would be no self-awareness in act. Autonomy doesn't mean, therefore, that the individual has the power to promote itself—that would be the economic version—or that (s)he is really born out of itself, namely creating its own body or life out of itself (that would be a future of robots). Autonomy means that a person understands and thinks itself not (only) out of its physical and biological origins, not out of simple given cultural, mostly political origins, but it means that a person develops itself in its own awareness out of that double origin in an own, rational way, so that (s)he can act out of and under the interpretation or awareness, (s)he is giving about him or herself!⁴

Not the genesis of the biological evolution, nor the cultural genesis of the person is what he is aware of, but such an awareness or self-interpretation starts its own development from a level, that is related but not reducible to that biological life (animals have also consciousness) and cultural one, in as far as human awareness defines itself as an empty possibility; in that awareness, the person strives to self-knowledge, which is not the same as knowledge of something, but the rational (also and most practical) use of its own descriptive definition about oneself.

Life in its future is therefore for the individual minimally such a life that can be taken up in its own interpretation, so that it is not only linked to a representation or notion of a given living future; but such a life in the future must be possibly taken up in the interpretation the persons involved give about themselves; and it must enable acting in view of the awareness itself, irreducible to given starting points. Only the case that there is such an interpretation can be expressed by philosophers; these are then justifying a kind of talk with seemingly empty notions like the own self awareness or self-description, which are claimed to be meaningful, as far as they are given in a lived self-interpretation of man.

B. Is that awareness a mark of the individual or also of the genus?

The individual has a meaning for itself in its rational self-understanding. But is that awareness restricted to its individuality? The fact that the individual has also a further form of life in its reproduction, may affirm that every individual is related to its genus. But the self-interpretation is not linked to that pure living form. Why should

awareness or interpretation then be linked to something non-individual?

The possibility of interpretation and awareness is given in and with language, which is not an individual structure. That language shows the assumption of a life of society by every individual. The self-awareness or interpretation as individual must be taken up by or in a sphere of community, even if it is not only the awareness of my role—, so the individual is in its self-awareness (also) the formulation and so the reflected form of a possible communal one. But there is more: an individual receives specific validity only in a particular institutional form by that society, as far as it does not know and act as a bare individual (*pace* liberal market arguments) and does not interpret itself as an isolated individual.⁵ The individual is a part within an encompassing whole, that exists only in individuals which are then aware of their living within it. And actions always occur in a common world, so that an individual has only a real structured action in an institutional form: even doing something for himself alone, he remains a member of a family and of a state or of the market with its invisible, but existing hand; there are no possible individuals without the functions and institutions of a community (e.g. there could be no human birth at all). In fact also, the validity of every individual (even in its fundamental non-social self awareness) is related to the validity of its community, so that the future of individuals seems to be guaranteed by societal forms, families or states.

Such an institutional society, on the other hand, does not develop out of the individuals by extrapolation from their striving and acting; it is not the sum of the individuals. Individuals are not able to build up fully new institutions (in as far as institutions are the actual common situation of relations they create between individuals). Societal forms are bound inextricably with the individuals, as far as society can be said to be a form or different forms of the human genus as such. Therefore the point is: the encompassing whole is an *institutionalised* whole, so that particular

⁴ To speak about knowledge is only a problem, if in a positive (dogmatic) way knowledge is restricted to "scientific and even physical" knowledge. To avoid provocations, simple knowledge could be said to be an interpretation of awareness and highly reflected, philosophical doctrines are then philosophical knowledge. Interpretation is the basic term of some analyses of D. Henrich; the speech of knowledge is a traditional one of continental philosophy, even in its highest reflected forms, in which philosophy is restricted just to knowledge (in J. G. Fichte).

⁵ Even seeing is seeing within, as well as seeing of a common world (without that communal aspect even scientific experiments could not be decided by seeing again).

wholes may act themselves, as family or as market and state. The institutions know and act themselves: no war without a state institution. The whole is also an institutionalised togetherness, as far as there are needed individuals to perform the present and future of them even as wholes, for without them there are no structured wholes.

With institutions the insight may be present, that the interpretation of an institution is also an own insight of the institution, which is not one of an individual within it, as far as there is a possibility to speak about functioning institutions not only in philosophy, but also even in normal life. This analysis seems strange, as in modernity the interpretation of conscious life or of a life that has self-consciousness seems to be restricted to individuals as such, as far as the Enlightenment seems to have destroyed a common awareness for the societies (as far at least as it was given by "religious" traditions).

At the same time, if there is a specific interpretation of the institution from the side of the institution, it seems a very special one. Nobody can claim to have with its life and interpretation the specific and immediate awareness of the institution; more, even juridical, economic or political sciences may give their interpretation of the institution, but it is only the institutional anonymity that is given to itself its own institutional lived interpretation. As far as the institution is not an individual person, but a "moral" or "social person," this so-called anonymity (or personality that can not be attributed to an indicated, but only to an institutional individual) is nevertheless self-aware; that awareness is at least a functional one, that is present (and can be observed) in the acting of an institution. In fact, even communal institutional forms have a self-interpretation, given by laws, comments and proclamations. But for this social self-awareness there is never one specific person responsible; nobody can be the sole leader, nor the guide of that whole, then everybody is as a self taken up in that institution and every statement of an institution is for those participating, a statement in the first person, by which the person is not located in a visible individual; this statement is most evident by the modern state: in every state people are (integrated in) the state, even if it is not their individual power, and although the influence of every body should or could be better organised, the state is only bound after the proclamation of the king or president, who is not the state, but only representing (or broken reflecting) the state. There is also not immediate self-awareness, but a reflected, culturally lived self-awareness, for social institutions.

C. Why is that interpretation temporal?

Is that self-interpretation then linked with time for individuals as much as for institutions? And is the future also a possible view of institutions by themselves? How can there be a reflection about the future?

In the play of generations, the question of time and of the future seems self-evident for every life: for the individual, that fact is reflected in its self-awareness as a living being. The born or genetic individual that is self-aware is in that awareness aware at least of its birth; it knows its genetic dependence as a living being. Everybody has, from the moment that he is aware, for himself a before or a past (at least that of his birth as living person before his awareness as a person as such). As living being, the person has therefore also a lived direction of time, started from its birth, accepted in a cultural way by society. If it has a past, it seems to have also a kind of future; that afterwards or my possible death gives the sense of its own oriented being, so far as this end of life is the supposed end of my awareness. With this aware direction every living body is already engaged in the conservation of life.

If there is for the living being a striving to conservation, and also a resistance against destruction, the awareness of the fragility of our aware life (for, our own future is death) makes urgent questions about the direction of the lived time. The end is also either a future that is only an end or an orientation and participation in institutions, in which he is giving up its individuality as an individualistic one. Under its own description, the individual can project a future that is really under its own interpretation and so it is its own, even if it rests dependent of its living form. If the individual is participating, it is acting within or in view of such institutions, which are the temporal limited fulfilment of its own description. Minimally, an institution, at least of its family, functions as the aware reflected or interpreted substitution for its own only living genus. The own awareness of a direction can so be transformed with consciousness in a horizon for living social persons.

Such an individual may remain central in its own aware life, it is decentralised as far as the institutions play (with him, but also by him) their play, so that he is sense full living its own future (even its end) as a goal and means of institutions. It is living its aware life within them and in a temporal oriented way by them (you can neither marry before your birth nor after your death). In doing something for the institutions, in offering

myself for the state or for really good ideas, my future as a reliable person (or even as a hero) is guaranteed. The valid future of individuals is the future of the cultural institutional genus, in which the individual may find some sense. These individuals are important; in as far as they know about themselves within institutions.

Just because of this knowing acting, the individual is the striving force within the institutions, as it is an element thereof. Institutions have their own living orientation by the structure of time, which the appearing and vanishing individuals give to them. The institution is living just in the way that there is a change of the elements within them, a change and an orientation in the changes of the individuals.

In fact the individual and society are in different ways oriented as living structures, the individuals (even aware of themselves) reproduce their genus; the institutions are not reproducing themselves in such a way, but are living by the way individuals act as functions, taken up by self-aware individuals.

What kind of temporal being is given in this way to institutions in and with this interpretation? The structure of the time for institutions is the duration of their own life, seen partly from the individuals, and of their historical constitution or historical form. The structure of institutions is also that cultural or aware, but reflected, retake of the structure of life itself, in which every institution is a genus for the individual and has its differentiating genus of communities (like families, groups and states). Reproduction is the form of the institution families, where the life of all is exemplified. The past is the constituted body; the present may be the functioning of societies and their rebirth out of new elements or individuals (new marriages, new groundings of firms, new persons and parties as participants of state life). Within the institution, which are a supplement of the genus, in as far as there are lived communal self-interpretations, there is a (minimal) continuity and an own identity-building history and out of that there may be even the question of the future, to conserve the institution as it is (e.g. the striving that a family-name or a state will not disappear). Every genus has its future in itself, in as far as it is continuing in more individuals of the same. That is conservation of the genus in institutions and in the history of institutions like states. The genus has its future; the societies are in so far not immediately threatened.

But such conservation is not able to reproduce the awareness of its own structure. Only in as far as the living organism is not directed to its bare conservation, it reflects and asks questions

about its own horizon, and also about the future. If there is such a real self-interpretation in history, it must be also an interpretation of the genus or about the institution as such. There—if anywhere—arises the question if there may be a valid thought about the future, even if the kind of future of institutionalised society will be a further concern.

D. How is awareness of a future a thought?

Until this moment our propositions are a simple (philosophy-oriented) description of what could be or perhaps really is a formal and structural interpretation by individuals themselves. Until this moment there has not been a philosophical interpretation as such; there is a philosophical description of what is going on by individuals and societies, being aware themselves in time and in a possible future or in a convenient interpretation. Until this moment, philosophy has done nothing more than formulating in a complex way what is going on with individuals and societies, in a way that should be understandable by every body and may be accepted by them; and this description is in its claim not contrary to specialised research, but is even in principle guaranteeing the possibility and validity of that research.

Until now, nothing has been said about the future itself for institutions; it has only been indicated that there is a future for every genus that is the reproduction and thereby the conservation of it; and that perhaps, at least for individuals, there may be a future consisting of more than conservation, but this is not the future for the individual as such but one in an institutional sense. With this philosophical formulation of experience, individuals as well as communities can formulate thoughts, and individual thought and communal forms are conserved in their formulation in language. Even it is an individual which has thoughts; the thought is the formulation within an institutionalised group. If it seems an individual thought, then it is also valid in principle for everybody, who accept that kind of lived interpretation.

If philosophy, however, tries to clarify and not only to describe, there remains the question, if there are really valid thoughts in that in principle interpretation. This question is a necessary new moment of conceiving in this paper. For, if man may give such an interpretative description of awareness, and even if that description may be consistent and is acceptable for every body to elucidate the future, the problem about the truth of that self-description still remains.

Then there seem to be at least two empty notions, the notion of living under an own interpretation and that of a future of institutions themselves. The notion of living under own interpretative description may be accepted, in as far as that gains validity from the side of institutions. Such an interpretation or awareness may be lived, so that the notion itself of living under own descriptions of that awareness is not empty; even if that kind of self-determination is under such a critique and thereby perhaps not fully determined, the performed instauration is enough. That there seems to be a future of institutions is also dependent on formulation and interpretation of how awareness and temporality are brought together for these institutions; the notion of a future seems here to be empty; thus, there seems to be no further guarantee for that notion to receive validity, as there was some for human individuals.

Is there indeed a valid thought about a possible future? And how is that future then?

If a philosophy has a critical job, it has to discern within the expectations (and fulfilments) of institutional groups or communities, what may be a valid assumption about the future.

If it has to do so, it may discern forms of a future for society, which are not forms out of philosophy, but forms of self-interpretation of all these institutions, now critically articulated as possible philosophical thoughts. Such a philosophy is not strictly needed to discern the different forms of the future, as they are lived in man's history, but at least the formulation of some form is not without historical influence of philosophical "systems."

The question is now, how are the forms of the future presenting them?

E. What kinds of a future?

The future is a form of life for individuals, restricted to their particular life, and at the same time the form of more anonymous expectation in daily life, that is lived within institutions, which are forms of society. These institutions may be aware of their change and end (like families and little societies or merchant-companies) where other institutions (like states) seem to live in a progressing history. The sense of that future or the view about the future seems to be produced immediately in that life, as well by the individual as by one or some communities. This anonymous producing is of the same kind as the seemingly anonymous form of society itself, that nobody *as such* has outlined, what should be the awareness or interpretation of the future. But what may be the content of the future, common to all? In such

a future there may be different forms of future discerned.

This kind of distinction between forms is – again- not a philosophical attribution or contribution, but – at the best moment—a philosophical clarification of forms lived by societies. In that form, philosophy gives only the possible argumentative or interpretative structure. I argue that there may be three forms: The first form is the re-take of conserved life (1), reflected by real or religious interpretation. The second is the future in which the awareness itself is seen as a kind of life or the concern is only the further conservation of lived awareness, not concerned about itself as awareness (2). The third is a form, in which the expectation of the future is lived out of the awareness, that the future is only a meaningful future out of own interpretation: the future seems to be a care of institutions (3). In this analysis the appearing different forms could be viewed as historical, but are in fact typologically or perhaps conceptually distinct.

1: The future of conservation

The minimal future is a form of conservation of the present: institutional groups are, like single individuals, directed to conserve themselves. Such a future is only the enduring of a present (out of the past); it is a preservation, which is physical for individuals and social, cultural or institutional for 'moral' persons, and it is determined by the necessities of the past. The institutions (and the individuals within them) know in their 'living' organisation, that there will be a future, but what it may be, is the same as what is going on in the present. The simple form seems also to be the future of a past, or a possibility dominated by the necessity of the present, constituted by the past, and not by the interpretation of acting itself.

Such an enduring preservation of the same can be attributed to 'primitive' cultures without a sense of history, as if these societies are not in evolution, but for themselves they are not in a directed history. Awareness as such is only there in a form that is not important in itself. The interpretation of the future was given in a common interpretation of life, as a form that is taken up as if it were only life. Such a future can also called the future of a social nature and the interpretation of human life is done as the form of a bare nature

In fact such interpretation give birth to an invented or immediate myth of the eternal return. Traditional common responses about finiteness of humanity and about the question of the future was given until recent times in religions These myths are the interpretation of man for man, in which

the relation to nature as a whole or in which the living whole is predominant. The fact that even nature has—as it is learned to everybody— an evolution and has changes, not to a discerned, but to an evolutionary future, is not taken into account.

2: *The planned future*

An other vision of the future is not such a conservation, but it is modified by interpretation: the future is there as an act of divine preservation of the good or as an act of divine salvation, to which individuals, more than societies are stimulated. This religious and historically common interpretation of a paradise of 'rice pap' or of other delicious things is proclaiming a future without or beyond time. That talk is not a classical myth, but a standpoint, which formulates from nowhere, that there is coming a splendid future, which is not the simple result of the conservation, but of preservation of the good therein.

The secularisation of this religious form or of such a future (out of time), now located within time, is just the *progress* in infinite, where man is giving himself a nice future. This happy future has in fact two versions.

First, this nice form is without further difficulties, the best of our present. The future is in that way a certain possibility that may be calculated. The future of mankind or of institutions is now declared to be rational and it is an object that will be there by our planning means, an extrapolation from now: it may mean more money, more cars, more people, and more happiness. This future seems (for a critical view) conservation or a reduction of the expectations to that what is given; the future seems to be a temporal or cultural reformed interpretation of life.

The second version is the alternative future; it is a critical version of the present: more contamination and more heath on the one hand or the discovery of forms of economic and politics slavery do lead to a better warning, so that institutions can act to attain a real good future. The calculus of possibilities (extrapolated out of the present) is a stimulus to improvement and advance. In this vein, there may also arise the expectation to have all knowledge or to heal and resolve all problems. This critic version will realise all expectations in an economic sense, or it produces the actualisation of an ideal society (it may be liberal or communistic). The means to arrive at that calculated or in a reducing knowledge arriving future are technical ones, in fact it seems to a kind of (ideological) domination of nature as well as man as a natural genus, in as far as it presupposes a scientific theory of the evolution of the material and it views in planning only factors of a material account, say the (even political) market

or needs. In so far this future is a progression of a reductionist identical, outlined out of the present, even if some will show it in an alternative counter version.

Both forms of future are taking into account the self (of our self interpretation) as a goal that is only a kind of striving; in that way they are in fact reducing again the future to some thing known (or at least usual). Such a future has a one-dimensional form; it is dependent of a specific form of modernity, which makes superfluous the own and free interpretative contribution of the subjects or individuals and of the institutions, involved in the progress. Like the religious expectation is dependent on an independent, certain or known 'view-point', both versions have the expectation of a non-problematic future. Just this is not certain.

3: *The future as mans limited concern to care?*

The future can only be affirmed in a provisional interpretative way; in as far as not only everybody, but also society is expecting a further moment in the life of their organisation by the orientation of their time and history. But, it is known by scientific extrapolation that human beings are limited on earth, that even the earth has a limited scope; the most illusionary extrapolation hopes to escape from the earth to other planets, but even there, there will be an end. There is no endless future, just as we know that there is no timeless future. And, more important, we know that man is able to destroy mankind as such. Man is able (in a state organisation) to destroy that future in a technical way by the use of atomic or other apocalyptic weapons. It is no longer the approach of an individual to destroy himself, but even the whole world can be annihilated as form of cultural life. From the moment of common enlightenment and conviction, this kind of thought is now part of the communal institutional future.

Just the limitations given enable a very different interpretation of the future. Even arguing the limits of man by extrapolation, these limits determine interpretative thoughts and are not knowledge out of which the future as a positive result of calculation may happen.

With this interpreting thought, that is lived in all awareness of institutions, the institutional self-awareness has taken a specific form. It is an institutional actualisation of the interpretation, where the form of awareness is pointed out as such; such a life under own descriptions is not without calculation or strategy as it is not independent of life. The organisation of the future by communities with strategies are dependent of luck and to realise own realities such deliberation is necessary, but the goal for the institution is the own

projected as well as attained awareness. That future is therefore not an ideal, neither ethical, nor esthetical nor religious, but the activity of institutional life under own considerations, which are not definitive rules of simple identity. Such awareness is able to guarantee a future that is not definitive in the power of even institutional structures.

The singular individual is performing the future as its goal and plan, without producing it, but in a form that is at the same time for it universal, in as far as the interpretation of the future is taken up in the norm under which the realisation in its institutional contribution is done. For the individual this action (and its interpretation is concluding the experience in an action,) is including its death in its realisation in institutional way. But that's not the same case for the institutions itself. The evasion from the individual to the genus as validation of aware life is forbidden from the level of institutional knowledge.

For institutions the future is not a doom, in as far as it can be in a common preparation and in common concern; institutions are doing in a preparation a common structured present and are engaging them only in their concern to a common future. That even institutions like states will vanish (what we know on good grounds, but even in an extrapolation of our present knowledge) is not a sufficient reason to declare that the community or genus, which is self-aware or self-interpreting in its institutional form, is only an ephemeron. These institutions are giving interpretative worth to themselves, if they are not only reproducing, and if they create by themselves forms of worthiness for what is going on within them.

No institution is also the powerful creator of the future, as it is neither the creator nor the guarantee of the structured community, no institution can live the progress of time, but it can integrate the end of time in its awareness, in as far as it is realising its awareness by proving it in act and further interpretation. That means, that the institution is under some interpretation a good and sufficient structure of what is good and worth to live, and that is also so perceived or interpreted by individuals, what is the case in normal societies, even if there is a need to regulated change. So the future of institutions is to do in a lived interpretation of their own goal. That essential goal does not belong to the preservation of a past identity of the institution, but it is the performance of the aware form of them, so that that kind of own awareness is cultivated. Therefore, the good community of the future is attained now, or it will never exist. The striving for such a good future in knowing and willing is giving shape in the

present; and this institutional action may be said to be *care*.

Care has different forms: it has not only a negative concern that institutions or states will not annihilate individuals and commonly accepted other institutions, or that they will end (institutional) life as such. But real care is a care to give individuals and groups their own integrity and interpretative worth, the minimal form is that of right, the better forms are their integration in social, but even ending institutional working forms. But in the work for such forms that even give individuals (under individual's own description) a content in which that individual is not centred in itself, but is concerned in its differentiated functioning, and in which communities are not further centred in their past, they act with their as social freedom. — Just the anonym of institutions prevents them (most of the time) to act in a fully centred way. — To be able to care, it may not be a relation to its own only specific appearing barely enduring form, which would be the care for an identical or identical past, in which there is only a return to that past. Institutions are embodied care for individuals, or at least have the function to be in care for individuals, as they are functioning to the affirmation of themselves, and as individuals can express the (possible) interpretation of institutions.

The care for the future is a free draft or plan of and within this institutional framework, which has economic, cultural, political goals, which represent a possible future, and in which is aware that a goal an institutional one, namely to live under self-descriptive awareness. The future is disclosed in the present and in this present by action and by positive care. So the future may be a horizon, to which we are working, but is in fact only engaging the present, that minimal moment of (in quantitative terms) some seconds or for others of their lives.

The goal as well as means are there and are there to articulate a represented and indicated future as the represented choice, which is to decide now and acting for institutions which are giving structure to their power for the individuals in their interpretation and for the interpretation, lived in common. With this thought the basis of common concern may be clarified more.

Thus care points to a careful dimension of future. Now there is the decision (in freedom) about the future (narrow or wide), by taking respect for the individuals in interpretative contexts and for groups and individuals in politics. In both cases, individuals and groups are acting only in a careful free way, if they are centring their action not around themselves alone, but in such a way,

that their careful free action in its interpretation (that demands or obliges to act) is only existent if that kind of action is the criterion for every action. Such an action is not given and proscribed by something other, as it comes only out of themselves, who want to live in their interpretation as free or self-conscious. And this self-consciousness can be lived out of the common interpretation embodied in liberating and free institutions. Care (ethical or social and institutional) is there for a life that knows itself as an exception (in relation to physical and even life); in as far as only living awareness has to deliver awareness and interpretation. For, this self-interpretation and self-knowledge is even a nullity that wonders, in as far as even the normal 'technical' rationality and the normal understanding is a form, which is arising within that self-knowledge.

F. The goal of the future is the philosophical concern of temporal awareness of our freedom

But is that care, that institutions are really acting in a good way, real? Or is this a to optimistic philosophical version of what is going on?

The form of care for a future that is essential and interpreted present, can –with an old term— be called free, *free* out of itself as awareness within the evolution; free as individual in its interpretation as own act; free as community in an order independent of reproduction needs of nature and in all cases interpreting itself under own aware descriptions. Freedom is therefore not what is restricted to something other, but what recognises that other as belonging also to itself. And that is essential, as it is not constituted by other forms (past history also), but as far as the social world is only therewith interpreting and acting under own rules.

The future is the posited relation of what is concerning now as perfection out of freedom and by freedom, what is going on now; that's not the new beginning of only something new, but the re-elaboration of what is done under the self-interpretation that makes possible acting out of self-description. Freedom cares now about its present and future freedom. The future is only the critical care for that, what is to do now and for that what in here and now is to conserve and therefore has worth.

Where the future of man can be thought in a real sense in its institutional form, so that man has a valid future in its work and action within institutions, the institutions must be there to illustrate the own interpretation of man for man, and this in such a way that even they may vanish! The institutions are therefore to be there for the care itself.

But is that care, that institutions are really acting in a good way, real? Or is this a to optimistic philosophical version of what is going on?

Lets start again. What kind of status has an emerging and lived interpretation of the future, spelled out for individuals and more important for institutional structures? Can it be said, that philosophy has only to accept the vision of them, even in its own conceptually structured manner.

But a real thought of a future as if it were present or as if it will be eternal and giving a real religious or metaphysical *hope*, is not further possible. Ontological spoken, the view of a future as a realistic approach is very problematic, as far as it suggests that there is something out of the living and lived individuals and institutions and out of the knowledge in them, so that the future is there and will be there.

But the solution of care for the contingent individuals and their needed institutions is not dependent of a realistic ground. Perhaps, the thought of a better future is only a critical thought against the present. But, what does prevent that thought to be an illusion. Even than kind of the future as some fulfilment is not needed in the lived interpretation of care.

With such an end, the question is radicalised: What is there rational and true in our common institutional care? If *rationality* itself is under question, such rationality is not the technique of planning the future, but a practical life within a social institutional world.

For a more technical philosopher, the future could be interpreted as a thought about possible worlds. The thought of possibility can in this technical way be restricted in a calculus of formal modalities, but in fact such a formal play (of formalisation) is as content only the negation of the present: the other world is a negative world in which what is strong in the one is weak in the other. In the version of this, it is not a problem that that reasoning is only concerning the present, that every thought about possibilities is (that's the true point) only related to the present, what is revealed by the modal theories.

Neither the thought of possibility nor that about the future is going further than the present. The future of institutions seems to be the temporal version of a thought on possibility.

That there is a claimed or expected future shows that man (as simple living being) has the ability (in normal circumstances) to use a difference between thoughts about actuality and possibility. This needed possibility is an indication that the present is not dominating only that what is there as life and result of life. +.

Just the same is seen in the philosophical analysis of care (as attributed in the action of institutions), and then man is living under own

rules, that have only sense in its own awareness, for that awareness. The notion of future indicates that a thought on possibility or contingency is not only a philosophical one, but in fact a full available and used thought is in every body's own self-interpretation. The main notion at the background is out of that an essential (and a philosophical) one, freedom, not to be limited to simple life, but to life under own rules of self-interpretation, a freedom that is an activity, that is neither restricted to individuals, nor to institutions, but must be attributed to both, so that both can promote themselves as such in a careful or free way. So humanity may have its own future in the act of decision of what is at stake now. Care is than a common word for that activity, that is only done by humans under their own ethical and common prescription and awareness, in which the being self is exposed as not fully determined by its past and present. Care could be said in normal understanding for normal understanding what is said to be freedom in philosophical speech.

If such a freedom is what may be in truth actual in the actuality, is there a need to have an other future? Or is the even limited completion in

an act that is going on now, with individual and institutional actions not enough?

With it, the individuals may have (no) future, society (and history) may have (no) future, but both do have the insight, that the used temporal structures are forms only within a more valid, better guaranteed idea. The power of such persuasion lies in the life, social structured life, for; the meaning of the cake is in eating it. The future is not a never ending striving, life, nor the negation of striving, what is also an abstraction, possible ideals, but only this kind of enlightenment may be the future, which is the care for what humans, we also, are now, and for what humans are only now, and this is given in an insight that care for the future is for humans in knowing and acting. But that's not an idea about the future, but in philosophical speech, the idea of the future is to conceive freedom now as idea, which is the concern of everybody, reflected as a topic of or for a possible treatment in philosophy. The notion of future is only lived and exposed to guarantee, that there is and can be thought: now, there is our freedom to live, to enjoy and for philosophers to conceive, what is now *our structured concern*, to be and become acting *free now*.

THE COMPLEXITY OF ANTICIPATION

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Abstract:

An anticipatory system is a system with the capacity to anticipate its own evolution. This paper generalizes the idea of anticipatory systems from its original biological setting to the fields of cognitive and social sciences, and it shows that anticipatory systems are a generalization of autopoietic systems. Anticipatory systems, almost by definition, escape the possibilities of rote iteration. This argument shows that the complexity of an anticipatory system extends well beyond mainstream complexity theory. For this reason, the idea of systems of higher-order complexity has been introduced. These types of systems come in at least two forms: impredicative or self-referential systems, and living systems. It follows that anticipation does not necessarily require life.

Key words: ontology, latents, anticipation, system, autopoiesis, complexity, higher-order complexity, life, biological systems, social systems, Rosen, Luhmann

1. It is Time

During the past two centuries, ontology has been far from being the most important subfield of philosophy. The beginning of the declining interest in ontology can possibly be ascribed to Kant's decision to omit from the second edition of his *Critique of Pure Reason* (1787) some sections that had been present in the first edition of 1781 (for a reconstruction, see Albertazzi, 1996).

It is well known that the first edition of the *Critique* presents three different deductions (subjective, metaphysical, transcendental) of the categories, whilst the second edition of the *Critique* considers only the problem of the *validity* (*Geltung*) of our knowledge.

In short, the second edition views the categories only as logical functions operating independently of sensibility. Between the first and the second edition, the nature of categories is radically modified: according to the latter version, categories no longer depend on the subjective deduction based on the pure intuitions of space and time (especially time).

The move from the first to the second edition can thus be read as a declaration of failure. As

Albertazzi puts it: “Kant found himself trapped in a theoretical impasse — the nature of consciousness and of its acts — which forced him to abandon part of his theory and to concentrate solely on the question of the categorical validity of empirical knowledge” (Albertazzi, 1996, p. 431). In turn, it is obvious that the problems of consciousness and its acts cannot be faced without addressing the problem of temporality.

Given these premises, it comes as no surprise to find that the two main ontological readings of the first edition of the *Critique*, namely the *idealistic* reading by Fichte, Schelling and Hegel, and the *phenomenological* one by Husserl, are both closely concerned with the problem of time.

2. Time and its Ontology

In order to grasp at least some of the reasons why the ontological understanding of time is such a demanding problem, one may start by acknowledging that time is one of those modes of being for which natural science seems largely unable to provide an explanation. Consider physics: time in the field of physical science is merely a parameter in its equations – it has no inherent dynamical quality of its own. Yet, as Wheeler pointed out, “the universe flies.” What, then, is the missing dimension in our understanding of the cosmos?

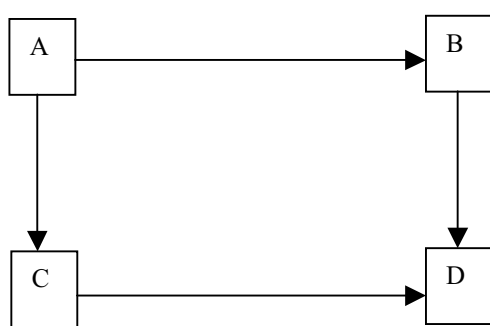
Time as pure order—be it the order of a parameter in an equation or the conventional order of calendars and clocks—cannot be the answer we are looking for. On the other hand, time as timing, pace, or rhythm apparently provides at least the beginning of an answer (Van Gelder & Port, 1995). As soon as timing is taken into account, a first immediate consequence becomes clear, namely that there are different types of timing (Adam, 1998; Poli, 2007). As far as the problem of the multiplicity of timings/times is addressed, the theory of levels of reality seems to be the only categorical framework able to provide the basic ontological grid for distinguishing in a principled way the main families of time (on the theory of levels of reality see, Poli, 2001, 2006b,

2006c and 2009a; on the interplay between levels and temporal (spatial, causal) families see Poli (2007).

However, even if one accepts that the higher levels of reality (the psychological and social strata) have their own families of time, and that the highest layer of the material stratum (the layer of biology) similarly has its own family of times, the problem of physical time still remains undressed. The claim that everything but physical entities have their own authentic temporal modes is obviously unacceptable. However successfully articulated it may have been, physics nevertheless seems to hold further major surprises in store.

The issue of the temporal mode of physical entities can be addressed in at least two different ways, one internal to science and one—for the time being, at least—with a more philosophical thrust.

The scientific way is grounded on the development of the new mathematical frameworks known as “non-Abelian” or “non-commutative.” Put briefly, the main intuition is that most of the mathematics developed to date has been based on too restrictive assumptions, namely commutative (or Abelian) diagrams. Consider the figure below. A diagram is commutative when the route A-B-D is equivalent to the route A-C-D. In other words, the only relevant information for a commutative diagram is provided by the starting and the ending points. The details of the specific routes are irrelevant.



On the other hand, for most non-physical sciences, the ways in which things unfold, the details of the routes followed in order to go from A to D, are relevant. Before going on, it is worth noting that diagrams (as used e.g. in the mathematical theory of categories) can be adapted to most mathematical theories. Algebraic non-commutativity (as for “non-Abelian groups,” etc.) is therefore but a minor case of a much more general phenomenon.

Philosophers address the ontological problem of time by starting from the principle of power or potentiality. To cut a rather complex story short, potentiality makes sense only if the thesis is accepted that *reality is open*. This means

that the ontological nature of entities is not thoroughly established. Something new can always happen; entities are never totally given in advance. All of them exhibit some kind of tendency toward the future. The truth of what an entity really is lies in the future of that entity, in what the entity will become (see Poli 2006a and 2009b).

This idea has found some limited currency in the works of thinkers such as Leibniz (i.e. his concept of tendency), Husserl (who recognized anticipation as a component necessary for the working of the internal consciousness of time), and Peirce (the intrinsic creativity of nature requires gaps in its underlining continua). However, the thinker who has developed the most extensive categorical analyses of the future has undoubtedly been Ernst Bloch. His *Principle of Hope* (1995) resembles an encyclopedia of the categories of the future.

3. Potentiality

The problem that interests us is not the problem of missing information, i.e. the problem that arises when an entity is imperfectly or only partially known. This is an epistemological problem, and it must be sharply distinguished from the ontological problem of the entity’s categorical openness. “Categorical openness” means that the entity is only partially determined, in the sense that at least some of its determinations are hidden or latent.

In this regard, at least two main types of latents can be distinguished. The simpler type consists of those determinations of the entity that are hidden: they are there, only waiting for the triggers able to activate them. Sugar is soluble when added to water; solubility is there, waiting for a proper context of activation. Occasionally, a latent determination emerges “automatically,” which means that the context of activation may eventually be provided by the simple passage of time. Things oxidize and become naturally old. The twofold aspect of hidden latents is exhibited by open determinations that “disappear” when the context changes or because of the mere passage of time: for example, after a while, a drug may lose its power (Harré & Madden 1975, p. 95).

On the other hand, truly latent components do not exist at all in the entity’s actual state, which may imply that their internal structural determinations have not been formed. The latter may become formed later on if their sources are somehow stored in the entity (newborn babies cannot do most of the things that adults can, but in due time they will have the capacities to do them). The openness of the entity may then be ascribed either to its still maturing conditions or to new conditions that may subsequently arise.

The entity's *matured* latents interact with each other and form the entity's space of possibilities. The whole of the entity therefore comprises both actual tendencies and latencies, possibilities (matured latents) and potentialities (still immature latents).

On submitting the category of potentiality to closer scrutiny, a number of new categories emerge, the most important of them being those of horizon and front. From the point of view of the space of possibilities, the development is towards the entity's stable points, if any. On the other hand, from the point of view of the space of potentialities, the existence of something like pre-established stable points does not make much sense, because the state space of the entity is going to become different.

What is needed is the idea of something that is neither reachable nor crossable. The concept of *horizon*—as opposed to the concept of boundary, used to distinguish the system of the entity from its environment—suits our purpose precisely. The entity's horizon outlines that fragment of the space of potentialities whose conditions are maturing. As its conditions mature, the entity's horizon moves ahead. The category of horizon is a teleological category. It encompasses the whole of the entity, its *entelechy*. Without horizons, entities are dead. They may still continue along their trajectories, but no real novelty can ever appear: everything is forever fixed.

Horizons have fronts, "areas" where novelties appear. The front is the growing, maturing, changing section of the horizon. All this is patently only the beginning of a possible theory. Before moving to the next section, I would stress that one of the main reasons explaining the usually poor understanding of latents is possibly inappropriate choices of boundaries. More often than not, in fact, items are elements within systems: trying to understand some entity independently from the systems to which it pertains may dramatically curtail many active structuring relationships. Systems must therefore be included in the categorical framework of analysis because they constrain the behaviour of their elements, without being their parts. In the following sections of this paper, I shall therefore use ideas from system theory to advance the theory further.

4. Systems

During the past few decades systems theory has apparently reproduced in its own way the same divide and the same attitude that have characterized the philosophy of the past two centuries, namely the overwhelming prevalence assigned to the epistemological interpretation of their object

as opposed to the ontologically-oriented analysis of it. According to the epistemological reading, a system's boundaries are in the eye of the observer; it is the observer that literally creates the system by establishing his/her window of attention. On the other hand, the ontological reading claims that the systems under observation are essentially independent of the observer, which eventually discovers, or observes, them. Most confusions can be dealt with by distinguishing two aspects of the *interactions between observing and observed systems*. The thesis that knowing a system—as required e.g. by any scientific development—implies appropriate interactions between an observing and an observed system, does not mean that the existence or the nature of the observed system depends on the observing system. A measuring device can be taken as one of the simplest types of observing systems (Rosen, 1978). The resulting *model* depends essentially on the device (e.g. on its sensitivity and discriminatory capacity); on the other hand, the nature of the observed system does not depend on the nature of the measuring device (which obviously should not exclude the possibility that the very process of measuring may eventually modify the observed system). Furthermore, the ontological interpretation affords better understanding that some systems essentially depend on other systems. Thus, higher-order systems require at least first-order systems as their constitutive elements, the basic idea being that higher-order systems result from the couplings among other, lower-order systems. In this sense, melodies require notes, groups require agents and traffic jams involve cars (Baianu & Poli, 2009).

5. The Evolution of System Theory

The evolution of system theory exhibits three main phases of development. The first phase in the evolution of the theory of systems depends heavily upon ideas developed within physiology. "Homeostasis" in particular is the guiding idea: a system is a dynamical whole able to maintain its working conditions. In order to define a system, one needs (1) components; (2) mutual interactions; (3) the environment in which the system is situated; and (4) a boundary distinguishing the system from its environment.

The main intuition behind this first understanding of dynamic systems is well expressed by the following passage: "The most general and fundamental property of a system is the interdependence of parts or variables. Interdependence consists in the existence of determinate relationships among the parts or variables as contrasted with randomness of variability. In other words,

interdependence is *order* in the relationship among the components which enter into a system. This order must have a tendency to self-maintenance, which is very generally expressed in the concept of equilibrium. It need not, however, be a static self-maintenance or a stable equilibrium. It may be an ordered process of change – a process following a determinate pattern rather than random variability relative to the starting point. This is called a moving equilibrium and is well exemplified by growth” (Parsons 1951, p. 107).

The main result achieved by the first phase of development of system theory has been the proof that the system as a whole is defined by properties *not pertaining to any of its parts*—a patently *non-reductionist* view. Global equilibrium, say, is a property of the whole system, not of its parts.

However, the definition of a system as the whole resulting from the interactions among its components contains a number of hidden assumptions. Subsequent developments of system theory have sought to address and understand these hidden assumptions. There follow the main assumptions hidden within the initial definition of a system:

- The first assumption is that all the system’s components are given in advance, before its constitution. The underlining idea is that the system collects and organizes elements that are already there. We shall discuss this problem under the heading of the system’s *constitution*.

- The second assumption places all changes on the side of the environment. What about systems able to learn and to develop new strategies with which to cope better with survival or other problems they may encounter? Systems endowed with this property will be called *adaptive*.

- The third assumption becomes explicit as soon as the problem of the historical continuity of the system through time is addressed. What happens when a new component enters the system or is generated internally? What happens when a component is no longer part of the system, or dies out? These groups of questions can be summarized as the problem of the *reproduction* of the system (Baianu & Poli, 2009).

The overall outcome of constitution, adaptation and reproduction is complexity, albeit this of a type rather different from any of the mainstream conceptualizations of complexity (Baianu & Poli, 2009).

The first two assumptions have been able to produce an extensive body of literature, whose main results can be summarized by distinguishing two different types of both constitution and adaptation. The two forms of constitution are the *bottom-up* type of constitution from components of the system (that are already available), and the

top-down type of constitution from a previous stage of the system into its components. This latter form of constitution again assumes two guises: as constraints on initial conditions and the phase space of the system components, and as the development of a new organizational layer(s) of the system.

In their turn, organizational layers are a structural condition needed by developing adaptive systems. In fact, an adaptive system needs both (1) rules governing the system’s interactions with its environment and with other systems; and (2) a higher-order layer that can change such rules of interaction. These changes may be purely random, or may follow pre-established, or acquired patterns. In this regard, a hypothesis can be advanced which claims that the main difference between non-living natural systems on the one hand, and living natural systems, psychological systems and social systems on the other, is that the former have only one single organizational layer of interactions; the latter, more complex, systems have at least two layers of organization: the one governing interactions and the one capable of modifying the rules of interaction.

Furthermore, the persistence over time of living systems is made possible by *multi-stability*—a form of dynamic stability in the face of perturbations that prevents the destabilization and rapid disappearance of such systems.

The third of the three above-mentioned assumptions is the most important one. Indeed, the unfolding of the third hidden assumption—the problem of the system’s reproduction over time—has dramatically modified the entire landscape of system theory. The theory of autopoietic systems is possibly the best-known result connected with the problem of systems’ reproduction. In this regard, it is worth considering that the theory of autopoietic systems is itself in need of further generalizations. The simplest generalization of these is well represented by Niklas Luhmann’s theory of social systems. The second possibility is well represented by Robert Rosen, who some twenty years before the birth of the theory of autopoietic systems proposed what he called (M,R)-systems, later developed into the theory of anticipatory systems. As a result, Rosen’s theory is both more general and more precise than the theory of autopoietic systems. In what follows, after a short description of autopoietic systems, I shall first sketch some aspects of Luhmann’s theory of social systems and then present Rosen’s proposal.

5.1 Autopoietic Systems

Autopoiesis is the capacity of a system to reproduce the components of which it is composed.

A multicellular organism thus generates and regenerates the very cells of which it is composed; a unicellular organism generates and regenerates the components of the cell (Maturana & Varela, 1980; Maturana, 1981).

Autopoiesis dramatically modifies system theory. An autopoietic system does not start from pre-given elements, neither does it assemble them. Furthermore, autopoiesis does not come in degrees: either a system is autopoietic or it is not. For an autopoietic system, the classical distinctions between system and environment and between closed and open systems acquire a new valence. Autopoietic systems are self-referential systems, meaning that the system's relational self-production governs the system's capacity to have contacts with its environment. Put otherwise, the system's connection with its environment is no longer a kind of immediate and direct relation between the system and its environment but becomes a reflexive relation, mediated by the self-referential loops that constitute the system itself.

As far as autopoietic or self-referential systems are concerned, the guiding relation is no longer the "system $\leftrightarrow$ environment" duality, but the "system $\leftrightarrow$ system" intra-relations, or automorphisms. For autopoietic systems, the classical difference between open and closed systems—where open means that the system's boundary is porous and lets both the system and its environment exchange matter and energy—acquires a new and different meaning: *openness* maintains the previous meaning of exchange with the environment, whereas *closure* now means the generation of structure, understood as the set of constraints governing the system's internal processes. Closure (or structure), then, organizes the system as a *holon*, or integral whole. The guiding connection changes from the system-environment connection to that between the system and its own complexity, understood as the system's capacity to adjust its own functional organization and internal structure.

5.2 Luhmann's Theory of Social Systems

Luhmann generalizes the theory of autopoietic systems to psychological and social systems. According to Luhmann, both psychological and social systems are autopoietic systems, i.e. both are dynamical, autonomous, self-referential systems able to produce their own elements. As a matter of fact, Luhmann as a sociologist says very little about psychological systems and focuses almost all his efforts on the understanding of social systems. Luhmann's major works on social systems are *Social Systems* (1995) and *Die Gesellschaft der Gesellschaft* (1997).

Luhmann is more understandable as soon as his theory is seen as a further step within one of the main strands in the evolution of sociological thought. Social systems are higher-order systems able to outlive their members: new individuals are born, others die off, yet others move from one social system to another. All these modifications notwithstanding, social systems show some kind of stability which for the most part is independent of the continuous transformation of the underlying set of their members. As previously said, this is the problem of the reproduction of social systems.

The most obvious answer to the problem of the reproduction of social systems has been provided by Pareto: the reproduction of a social system (its temporal continuity) is brought about by the reproduction of the individuals that happen to make up the system. Parsons, however, realized that the reproduction of individuals is mainly a biological problem—as socially conditioned as one wishes, but nevertheless an essentially biological affair. In order to avoid reducing social problems to biological problems, and in order to answer the question of the reproduction of a *social* system satisfactorily, one must find an authentically *social* type of reproduction. Parsons' answer was that the reproduction of a social system is provided by the reproduction of its (social) roles, i.e. by the reproduction of the patterns of action that are typical of that system. The reproduction of a social system is therefore the higher-order outcome emerging from the reproduction of roles (patterns of action). This answer gives a much firmer basis to social theory. However, this is not the end of the story. Later on, Luhmann realized that roles or patterns of action are themselves in need of a firmer basis, because roles are in fact implementations of perspective points, interests, values, and—more generally—of meanings or senses. In its turn, the reproduction of roles implies the reproduction of their meanings. In short, the reproduction of a social system is grounded on the reproduction of meaning, e.g. through education and other socializing agencies.

The following remarks may clarify where we have arrived thus far:

- The Pareto-Parsons-Luhmann series clearly shows an increasing transition towards higher levels of abstraction. In order to find better answers to earlier proposals, sociologists have had to delve into ever deeper waters.

- The process of reproduction does not imply lack of variation. On the contrary, reproduction is precisely the process that allows the generation of bounded (and therefore, possibly viable) variations.

- Parsons and Luhmann have detached the reproduction of social systems from their *material* bases. Both roles and meanings, indeed, are far from being material entities.

The last remark is the most important of the three: what these authors have shown is that the reproduction of higher-order system may not be governed by the reproduction of their underlying material bases. Needless to say, “not being governed” does not imply “being existentially independent.” Put otherwise, social systems (and psychological systems as well) do need a supporting material basis. However, the important result is that, once such a basis is somehow given, the reproduction of the higher system does follow its own relational laws. As a matter of fact, neither Parsons nor Luhmann were able to deal with this major ontological problem, which can be properly articulated only within the framework provided by the theory of levels of reality ((Poli 2001 and 2007).

The units of meaning used by a social system for its reproduction are communications (Luhmann 1986, p. 174). Building on (Bühler, 1934), Luhmann sees communication as essentially based on information, utterance and understanding. Information is the selection of what has to be communicated, utterance is the “how” of the communication. In more traditional terms, one can read these first two components of communication as its content and form. The real novelty comes with the third component: the understanding refers to what the *receiver* grasps from the previous two aspects of a communication. That is to say, “not the speaker but the listener decides on the meaning of a message” (Bäcker 2001, p. 66). For Luhmann, none of the three components *on its own* is a communication. Only the three components together form a communication, which implies that a communication can never be attributed to any one individual (Seidl 2005, p. 29). Communications as Luhmann defines them are from the very beginning social acts. Communications can further be accepted or rejected. This other aspect, however, is already part of the next communication (Seidl 2005, p. 30). Communications generate further communications, which generate still further communications. For Luhmann, a social system is the autopoietic system of communication, where communication is the unit of reproduction of a social system.

Two major steps follow:

- the distinction of modern social systems into *functional* subsystems (economy, policy, law, science, art, etc). Each functional subsystem is governed by a specific code based on a double distinction: the basic distinction, valid for all sub-

systems, between relevant and irrelevant communication, and a specific distinction for each subsystem: legal/illegal communication for the legal subsystem, power/non-power for the political subsystem, true/untrue for the scientific subsystem, etc.

- the distinction of social system into specific subtypes (interaction, organization), each based on specific types of communication (face-to-face communications for interactions, decisions for organizations)

Autopoietic social systems regulate the exchange with their environment. From the point of view of the theory of autopoietic system, the environment is not itself a system. The environment does not send “signals” or “inputs” to the system; system and environment do not share a common code. What the environment can do is perturb the system. The environment may eventually “trigger” internal processes, but cannot determine those processes” (Seidl 2005, p. 23). The processes triggered by the environment follow their own *internal* dynamical laws and communicate only with other processes internal to the system. All the communications take place within the system; there is no communicative exchange between the system and its environment.

The relation linking a system to its environment is called structural coupling. Different systems may be related to each other in the form of structural coupling, where one of the systems becomes the environment of the other system. Eventually both systems can become each other’s environment.

Whenever different systems are structurally coupled, the exchanges that occur between them take the form of perturbations. In this sense, the brain perturbs the mind (nerve impulses are not thoughts), social systems perturb psychological systems (and vice versa) (communications are not thoughts), functionally different social subsystems perturb one another (each functional subsystem reads events according to its own internal code: legal vs. illegal for legal systems, power vs. non-power for political systems, etc).

As we have said, autopoietic system do not communicate with their environment, in the sense that all the information is generated internally to the system. What systems can do is exploit the system/environment relation and reproduce the same distinction within the system. This re-entry of the system/environment distinction within the system is the source of the system’s structure. According to Luhmann, the possibility itself for a system to apply to itself the distinction between the system and its environment requires that the system be capable of observing itself.

The observational re-entry that generates the structure of the system constitutes the second level (or cycle) of autopoietic reproduction. The capacity of self observation can alternatively be described as the capacity to produce a description of oneself, or as the ability to follow a norm. An operational implementation of the last version could take the form of a regulatory mechanism able to restore the functioning of the system whenever it goes wrong. We will return to this point later.

5.3 Rosen's (M,R)-systems

The starting point of Rosen's theory was relational biology, as developed by (Rashevsky 1954). The main idea of relational biology is that organisms are something more than their material basis. As Rashevsky was wont to say, in order to understand organisms one should "throw away the matter and keep the underlying organization." Matter, the physical basis of organisms, is simply immaterial to their nature of organisms. Given that autopoiesis is a relational property, the theory of autopoietic systems can be seen as possibly the best known way to articulate relational biology. Robert Rosen's (M,R)-systems (Rosen 1958) are then the simplest mathematical models mimicking autopoietic systems.

Some of the subtleties of (M,R)-systems are spelled out by (Rosen 1972). For an introduction see (Louie, Functional Entailment and Immanent Causation in Relational Biology, 2008). Deeper analyses are presented in Louie & Kerckel's accessible *Topology and Life Redux: Robert Rosen's Relational Diagrams of Living Systems* (2007) and in Louie's more difficult *(M,R)-Systems and their Realizations* (2006). General discussion of Rosen's ideas is provided by the collections by Baianu (*Complex Systems Biology and Life's Logic in memory of Robert Rosen*, 2006) and Mikulecky (*System Theory and Biocomplexity*, 2007).

Omitting all the mathematical details (which, however, are far from being irrelevant), the main outcome arising from Rosen's systems is that they provide a natural way to distinguish at least two main types of higher-order complexity. The guiding idea is that the main difference between mechanisms and organisms is that organisms, but not mechanisms, are closed to efficient causation. The claim of closure to efficient causation means that the processes are mutually entailed within a system more complex than a mechanism; they form hierarchical loops (also known as "impredicatives" – on the logical coherence of impredicatives see Devlin 1991, p. 155-159). The obvious next step is to distinguish between sys-

tems such that at least some of their internal processes are mutually entailed, on the one hand, and those systems in which *all* their internal processes are mutually entailed, on the other.

To spell out these and related differences, I first distinguish between (1) systems based on some internal algorithmic machinery (simple and complex systems, including chaotic systems); and (2) systems based on internal dynamics comprising hierarchical loops. For obvious reasons, the latter systems cannot be based on algorithmic functions. They have been baptized "higher-order complex systems" (Baianu & Poli 2009). In their turn, higher-order complex systems come in two forms, according to whether only some or all their internal functions are mutually entailed.

Higher-order systems are not systems that are slightly more complex than ordinary complex systems. These two types of complexity are entirely different. "Just as 'infinite' is not just 'big' finite,' impredicatives are not just big (complicated) predicates." In both cases there is no threshold to cross, in terms of how many repetitions of a rote operation such as 'add one' are required to carry one from one realm to the other, nor yet back again" (Rosen, 2000).

Living systems are such that all their internal functions are mutually entailed. This also means that a hierarchical loop does not have a leading centre: any member of it is implied by other members. An interesting and still unsolved question is what constitutes the proper complexity of mind and society: their complexity is certainly not the complexity of mechanisms. Yet it remains unclear whether mind and society are living systems or higher-order but not living systems.

5.4 Rosen and Luhmann

So far, only the most general aspects of Luhmann and Rosen's theories have been considered. Even at such an ethereal level of abstraction, however, it is apparent that their theories are closer to each other than one might expect.

I shall restrict my remarks only to the following two aspects. Luhmann states that "autopoiesis, as a concept, has no empirical explanatory value. Its potential lies rather in the fact that forces other concepts into adaptation" (Luhmann 2000, quoted by Seidl & Becker 2005, p. 11). As a matter of fact, Luhmann's claim is overstated: almost all innovative frameworks require what may be a long period of maturation before they are ready for applications. Be that as it may, both Luhmann and Rosen's theories have been used to model real, empirical situations. From the point of view of Rosen, Luhmann's lack of "empirical, explanatory value" assumes the

form of the *realization* of (M,R)-systems. As Louie writes, “functional organization cuts across physical structures, and a physical structure is simultaneously involved in a variety of functional activities” (Louie 2006, p. 36). Therefore, there is no obvious translation (“realization”) of an (M,R)-system into a biological individual. (M,R)-systems provide a conceptually very abstract framework in which to understand life. The realization of life into actual organisms requires many more details that go beyond (M,R)-system. The same applies to Luhmann’s social system theory: the theory addresses only the most basic, the deepest, aspect of social systems. Many more details are needed in order to understand this or that concrete system. I for one fail to see why all this should be a problem.

The second problem that I shall discuss concerns the question of the structure of an autopoietic system. I mentioned above that structure is related to the second autopoietic cycle of an autopoietic social system. From the point of view of Luhmann’s theory, the first autopoietic cycle realizes the constitution of the system, while the second cycle generates the system’s identity. Interestingly, Rosen also stresses that the minimal (M,R)-system is based on two relations, namely *metabolism* and *repair* (one thus understands what the “M” and “R” of (M,R)-systems stand for). Metabolism is the basic activity that constitutes the system, repair is modification of the system’s dynamics according to some norm. Whenever the system’s dynamics (its metabolism) go awry, the repair component intervenes in order to reestablish order.

Even if the details of the theories developed by Luhmann and Rosen are very different, the two theories patently head in the same direction.

Rosen, however, seems here to have something more to offer than Luhmann. While considering the problem of the regulatory structure that a system may have, Rosen was able to distinguish five different types of controller. In order of complexity, the five cases are the following:

1. System with feedback controllers.
2. System with feed-forward controllers.
3. System with feedback controllers with memory.
4. System with feed-forward controllers with memory.
5. System with general purpose controllers.

Some comments are in order. Feedback controllers “perceive” the system’s environment. The most important characteristic of feedback controllers is that they are special purpose systems: for them only highly selected aspects of the environment are relevant. Given some selected value,

feedback controllers steer the system in order to force it to maintain that value. This is achieved by error signals indicating the difference between some fixed value and the actual value of the selected environmental variable. Within limits, the controllers of this family neutralize environmental variations and are able to keep the system stable. Their main limit depends on the delay between environmental change and system adjustment: if the changes in the environment happen too rapidly (the exact meaning of “too rapidly” depends on the type and sensitivity of the controller) the controller ends up by tracking fluctuations and rapidly loses its capacity to steer the system.

Unlike feedback controllers, feedforward ones “perceive” the controlled system, not the environment. The simplest way to imagine a feedforward controller is to think of a model of the system. In other words, a material system with a feedforward controller is a system containing a material model of itself. In order to behave as a feedforward controller, the model should run at a velocity faster than the velocity of the system. In this way the model anticipates the possible future state of the system. A system of this type is called an anticipatory system. Providing that, according to some criterion, the system has the capacity to distinguish positive states from negative states, when the anticipatory controller sees that the system is running towards a negative state it may try to modify the system’s trajectory. Similarly, when the controller sees that the system is running toward a positive state, it will maintain the system in its actual trajectory.

The third class of controllers comprises feedback controllers with memory. If a feedback controller is able to leave a trace of the system’s experience, this memory trace can be used to tune the system’s behavior better. A system with this capacity is obviously able to learn from its past experience.

The next class of controllers consists of feedforward controllers with memory. As in the previous case, systems of this type can learn from their past experience. Rosen notes that systems of this type—“ironically,” he says—must use feedback controllers of type 1 for their operations. In fact, they must be able to work on deviations from predicted states (i.e., they need error signals, exactly like type 1 controllers).

The last type consists of systems with general purpose controllers. All the controllers discussed so far can be described as working on single types of “perceptions” or variables. The obvious next step is to let systems behave in as articulated a way as possible (i.e., exploit as many variables as possible). The only constraints are given by the

unavoidable need to use feedback controllers to modify the internal models of systems with type 5 controllers.

To return to the problem set at the beginning of this section, the difficulty with Luhmann's theories is that he uses only type 1 (and occasionally type 3) controllers in his reflections. Luhmann apparently has no idea of controllers of type 2 and 4 (we may leave type 5 controllers aside). Even if Luhmann describes social structures as expectations (Luhmann 1995), he apparently has no articulated theory of anticipation. Rosen's theory may then help to articulate Luhmann's proposal by explicitly including feedforward structures in his framework.

6. Systems of Higher-order Complexity

Although still incomplete, the theory of higher-order complexity paves the way for a new, deeply innovative, vision. Even if most details of this new vision are still utterly unknown, or at best are only starting to become dimly visible, some of its categorical requirements are nevertheless surfacing. In this section, I shall offer for discussion the idea that higher-order complexity requires at least four different categorical frameworks, namely those provided by the theories of levels of reality, chronotopoids, (generalized) interactions, and anticipation.

Put briefly:

- The theory of levels of reality provides the basic ontological framework for articulating the relations of dependence and autonomy between entities. See Poli 2001 for an introduction to the theory.

- In its turn, the theory of levels paves the way for the claim that there may be *different* families of times and spaces, each with its own structure. The claim is that there are numerous types of real times and spaces endowed with structures that may differ greatly from each other. The qualifier "real" is mandatory, since the problem is not the trivial one that different abstract theories of space and time can eventually be and have been constructed. I shall treat the general problem of space and time as a problem of *chronotopoids* (understood jointly, or separated into *chronoids* and *topoids*). The guiding intuition is that each stratum of reality comes equipped with its own family of chronotopoids (see (Poli 2007 for further details).

- The theory of levels of reality also provides the natural framework in which to develop a full-fledged theory of causal dependences (interactions). As in the case of chronotopoids, the theory of levels of reality support the hypothesis that any level has its own form of causality/ interaction (or

family of forms of causality/interaction). Material, psychological and social forms of causality/interaction may therefore be distinguished (and compared) in a principled way. Besides the usual kinds of basic causality between phenomena of the same nature, the theory of levels enables us to distinguish upward and downward forms of causality/interaction (from the lower level to the upper one and *vice versa*).

- An anticipatory system is a system such that the choice of the action to perform depends on the system's anticipations of the evolution of itself and/or the environment in which it is situated (Rosen 1985). Reactive systems, on the contrary, are such that subsequent states depend entirely on preceding states (Poli 2009b).

Two remarks are relevant. Firstly Ehresmann & Vanbremeersch (2007) arrive at similar conclusions. Their *Memory Evolutive Systems*, in fact, provide a rich mathematical framework able to address levels, interactions, timescales and complexity. Secondly, the last of the above mentioned aspects is possibly the most intriguing one, and warrants further brief comment. First of all, it is important to note that anticipation comes in different guises: the simplest distinction is between anticipation as coupling between the system and its environment and anticipation as a cognitive projection. As a straightforward consequence, evolutionary survival implies that all living systems are characterized by some form or another of the former type of anticipation (known as "strong anticipation"), while some among the most evolved species may enjoy other, weak, types of anticipation as well (Dubois, 2000).

Anticipation can therefore lie low and work below the threshold of consciousness or it may emerge into conscious awareness. In the latter form it constitutes the distinctive quality of causation within the psychological and the social realms. On the other hand, biological and even physical systems are better characterized by non-representative types of anticipation. A very different problem concerns the classification of the various types of anticipations according to their level of complexity. Given that anticipation requires only that the system contain at least one hierarchical loop, also non-living systems can be anticipatory. The question whether all anticipatory systems exhibit the simplest of higher-order complexity is still unresolved. Moreover, living systems in particular require the capacity to coordinate the rhythm of the system with those of its parts. In this respect, the anticipatory capacities of the system as a whole may diverge from those of its parts. Furthermore, living systems are multi-strata systems composed of different types of components interacting at different levels of orga-

nization and reality. Most details of these highly complex forms of interaction between material and functional components are still unknown.

7. Conclusion

Philosophically speaking, one of the main problems with Luhmann—but not with Rosen—is represented by his rather idiosyncratic understanding of ontology. Apparently, Luhmann believes that ontology starts from a pre-given set of elements, and it studies the combination of those elements. As he repeatedly says, the unity of the system's elements is not something that is ontologically given (e.g. (Luhmann 1995 and elsewhere)). I for one have no problem in accepting his claim. I think it is also important to note that, whilst *some* ontologists have indeed defended atomistic ontologies, almost all the great figures in ontology have defended much more sophisticated ontological frameworks. Indeed, the idea itself of focusing the analysis of the ontological import of the theory on the status of the system's units alone is patently too restrictive. The real issue, in fact, is not the ontological status of units but the ontological status of the systems themselves, and in particular the ontological status of autopoietic systems. Provided that the theories partially discussed in this paper are correct, the conclusion is straightforward: biological, psychological and social realities have the nature of autopoietic systems (eventually of generalized autopoietic systems). This is a major ontological claim, which gives us important insights into at least one of the major differences between physical and chemical systems, on the one hand, and biological, psychological and social systems on the other. Luhmann occasionally shows that he has some understanding of the problems that lie behind all these questions, for instance when he asserts that “autopoietic systems ... do not create a material world of their own. They presuppose others levels of reality” (Luhmann 1986). Even if this quotation is not entirely correct, however, because biological entities *are* material entities, it nevertheless moves in the correct direction, namely the thesis that autopoietic systems are *relational* systems which can be eventually realized by material systems. To repeat again, in a slightly modified version, Rashevsky's vivid dictum: in order to understand autopoietic systems, “throw away the matter and keep the underlying organization.” Clarifying the ontological nature of autopoiesis is one of the problems on the agenda of contemporary ontologists.

The second problem to be mentioned is the connection between latents (as discussed in the first part of the paper) and autopoietic systems (discussed in the second part of the paper). The

shortest answer is that from the point of view of elements (again!) most if not all of the systems of which they are parts are latents: systems constrain the behaviour of the elements without being part of them. The fact that elements may have been generated by the system makes the system's latency even more interesting. It has been recently suggested that one of the consequences of the downward causation exerted by the system on its elements is non-locality: “The causation is seemingly everywhere in the process and not localizable at any specific place” (Kercel 2004, p. 15). A further consequence is the “inability to tease the causal links apart” (Kercel 2004), a consequence explicitly discussed by Rosen (e.g. 1985).

Lastly, where does anticipation lie within the general framework discussed here? In other words, which is the complexity of anticipation? Needless to say, anticipatory systems, i.e. systems with the capacity to anticipate their own evolution, cannot be entirely based on rote, algorithmic frameworks. Even if any of their states can obviously be simulated, an anticipatory system, almost by definition, escapes the possibilities of rote iteration. This argument only shows that the complexity of an anticipatory system extends well beyond mainstream complexity theory. For this reason, the idea of systems of higher-order complexity has been introduced. As we have seen, these types of systems come in at least two forms: impredicative or self-referential systems, and living systems. The really surprising outcome is that anticipation does not necessarily require life. Also non-living systems can be anticipatory systems. However surprising it may be, this conclusion is nevertheless most welcome because it shows that reality has still many surprises in store.

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HOW DO WE CONCEIVE THE FUTURE?

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Abstract:

The theoretical philosophical interest in the future comes only after the practical one. Every philosophical reflection on the future builds on a practical approach towards the latter. As, on the one hand, human behavior is not fully determined while, on the other, people have the faculty of imagining future states of the world, everyone has an immediate practical interest in the future. Since human actions are determined by independently made decisions, people orient their actions according to purposes of their own choosing that lie in the future. In this paper I examine three different types of human approaches towards the future: predicting, intending, and promising. In their everyday experience, all individuals have developed some intuitive understandings of what constitutes a prediction, an intention, or a promise, which are resident in natural language as implicit meanings of words. Taking this everyday linguistic experience as a starting point, I try to formulate explicit understandings of predicting, intending, and promising. By predicting, we form an idea of the events we expect to happen. Insofar as predicting involves events that have not yet occurred and cannot be described, all predictions about them are uncertain. When the occurrence of particular events depends on how we ourselves will act, we develop a peculiar readiness to act in a particular way. Intention consists in this readiness to perform a given action. The only way others can learn that someone intends to perform a particular action is if the person declares this intention. Declaration of an intention for action entails no obligation to perform the action. Such an obligation arises only if one makes an utterance of another type, namely if one makes a promise. There is not merely an intention to perform a particular action but that this intention is so serious that the promiser is ready to suffer possible sanctions if he or she fails to perform as promised. There is a close interrelation between predicting, intending, and promising as three different ways in which humans approach the future. Without predictions of the future, intentions for action cannot be formed; without intentions, obligations cannot be undertaken through promises.

Key words: Future, predicting, intending, promising

People are interested in the future not primarily for theoretical reasons. As, on the one hand, human behavior is not fully determined while, on the other, people have the faculty of imagining future states of the world, everyone beyond in-

fancy has an immediate practical interest in the future. Since human actions are determined by independently made decisions rather than by general natural laws, people orient their actions according to purposes of their own choosing that lie in the future. In its turn, definition of purposes presupposes a faculty of imagining states that have not occurred yet. This faculty allows us to distance ourselves from the momentary state of the world to which we too belong,¹ and to imagine what the world would look like at a later point in time. Definition of purposes, however, would be impossible if people were incapable of imagining *different* possible future states of the world. Otherwise there would be nothing to choose from and it would be impossible to make decisions. To sum up: insofar as we as human beings live by acting—we act on the basis of purposes, and we choose purposes with a view to notions of different future states of the world—we have a permanent immediate *practical* interest in the future.

The theoretical philosophical interest in the future comes only after the practical one. Every philosophical reflection on the future builds on a practical approach towards the latter. Here I intend to examine three different types of human approaches towards the future: predicting, intending, and promising. In their everyday experience, all mature individuals have developed some intuitive understandings of what constitutes a prediction, an intention, or a promise. These understandings are resident in natural language as im-

¹ People can distance themselves from the momentary states of the world in which they themselves are involved as well as from their own momentary states thanks to the propositional-predicate structure of human language. As it includes the so-called deictic terms (this, here, there, now etc.), human language allows formulating utterances in which the object of the utterance is conceived as being separate and different from the speaker; utterances in which own properties can be attributed to the object in question. Had we been incapable of distinguishing linguistically between “now” and “after,” it would have been impossible for us to imagine the future.

explicit meanings of words in their everyday usage. Taking this everyday linguistic experience as a starting point, I will try to formulate *explicit understandings* of predicting, intending, and promising. I am aware that my inquiry cannot but be incomplete and schematic—philosophical literature abounds in extensive and careful discussions on predicting, intending, and promising. It is impossible to present those discussions here. I hope, however, that the schematism of this inquiry will help clarify the fundamental issues.

The proposition that with a view to action we have an immediate and permanent interest in the future stands to reason. However, it is not entirely clear. What are we actually interested in when we say that we are interested in the future? Most probably, we are not interested in one thing only. We are interested, for instance, in what events will occur in the future. We are interested in whether and how those events will affect our lives. We are interested in whether we are capable, with our actions, of preventing undesirable and bringing about desirable events. We are interested in what events might change the conditions in which our already planned and undertaken actions are realized. This list can be continued. Yet no matter how long it is, there will always be new examples indicating that our interest in the future is focused on two things: *events* and *actions*. But how are the terms “event” and “action” to be understood?

By “event” we usually understand some kind of change. This change must be registered by someone and it must be distinguishable from other changes. The simplest thing one can say about change is that it is a transition from one state to another. This transition itself, however, must have the character of an entity. Otherwise a particular change would be indistinguishable from other changes. Changes occur in time. To be able to identify a distinguishable change, we must assume that: *firstly*, time itself does not change and constitutes a common frame of reference for all conceivable changes; *secondly*, that time is “void,” neutral with respect to the events occurring in it and that it can “accommodate” an infinite number of events; *thirdly*, that the parts of time are identical and indifferent to one another; and *fourthly*, that time is unidirectional and irreversible, that it always flows from the past to the present to the future, whereby every single moment occurs only once. This “void” and unidirectional character of time makes it possible to “date” events, or in other words, to assign each event an exact “place” in the flow of time. Strictly speaking, events constitute one-off changes—in everyday life we do not normally define as events

regularly recurring changes, such as the change of seasons or the ebb and flow of the tide.

But do we regard every one-off change as an “event”? Hardly. In natural language as in theory, we distinguish between event and action. We intuitively distinguish between events and actions in that events are changes which simply “occur” or “happen,” whereas actions are changes which “are performed”. The intuitive idea of events does not include the notion of a performer. Yet it is precisely this notion that actually constitutes the core of the idea of action. Of course the relationship between event and action is much more complex than this distinction. One can cite a series of cases in which the two terms are used without such a clear distinction in meaning.² For the purposes of this inquiry, however, it seems important to me to underline the difference between event and action. This would allow one to better distinguish between the different types of human approaches towards the future, which is my purpose here. When we predict we think of *events* which we expect to happen. When we form intentions they concern our future *actions*—then we imagine the purposes of the actions and the probability of achieving those purposes. When we make promises, in addition to the intention of performing a given action we also declare that we undertake the obligation to perform the intended action. Then we think of the future action through the peculiar prism of obligation.

Predicting

When we predict, our expectations acquire form and definiteness. By predicting, we form an idea of the events we expect to happen. Insofar as predicting involves events that have not yet occurred and cannot be described, all predictions about them are uncertain. That is why the most important aspect of every prediction is its reliability or plausibility. The events we predict will happen are merely possible events. As there is an in-

² Here are two examples. We often refer to significant occurrences in political or cultural life—such as long-expected visits of politicians to hostile countries or rarely organized exhibitions and concerts—as “events,” although they have exactly defined performers and are performed deliberately. By using the word “event” in these cases, we want to stress that the significance of the occurrence significantly transcends the intentions of the performers. In other cases events, such as some natural disasters (highly destructive tropical storms, floods, droughts etc.), are interpreted as unintentional (but predictable) effects of human actions—for example, “global warming” caused by industry. Here the very possibility of ecological critique rests on the interpretation of events as consequences of actions with a definite performer.

surmountable logical boundaries that actually and the possible, we can never completely exclude the possibility that the events we expect to happen may not happen, or that they may happen in a way we did not expect. The fact that the word “prognosis,” which is often used for predictions claiming to be highly reliable, contains the Greek word for knowledge, *gnosis*, only goes to show how keen we are to have sure knowledge about the future.

Yet considering that sure knowledge about the future is impossible and that we invariably have to make do only with relatively reliable predictions, identifying the conditions upon which the reliability of predictions depends is of paramount importance. Undoubtedly, the most important condition is our *knowledge* about the past and the present.³ When we make predictions, we transfer our hitherto observations, descriptions and explanations of events that have already happened onto events that we expect to happen. That is why someone who has absolutely no knowledge cannot possibly make predictions. The richer our knowledge of the world, the stronger the probability that our predictions will be correct. But the very knowledge on which our predictions are based must also be reliable. It must be objective, it must be free of random and subjective (mostly volitional) influences, and it must have been verified experimentally and logically. Knowledge of the operation of *natural laws* allows one to make reliable and accurate predictions about future events, as the very concept of natural laws presupposes that the events they govern are invariably identical in form. Strictly speaking, these events are not new. The Earth’s rotation around its axis, the liquefaction of vapour or steam in the atmosphere upon contact with colder air, or the freezing of water at temperatures below zero degrees Celsius have occurred countless of times in the past in one and the same form and will continue to occur in the same form in future too, as long as the same conditions are in place. Knowing these conditions, we know the causes by virtue of whose invariable effect events occur.

Now predicting events that are not governed by the laws of nature but occur as the result of individual or collective human action is a very different matter. Undoubtedly, predicting such events is much more difficult and inaccurate, and the predictions about them are less reliable. This is due primarily to the fact that people have free will.⁴ This means that it is not at all certain that placed in the same type of situations, different people will take one and the same decisions and act in one and the same way. Even though all experience to date shows that people’s will for resis-

tance breaks when they are subjected to intense physical torture and that sooner or later they inevitably begin to obey someone else’s will, this does not allow one to conclude that this will always be so in the future as well. There is no reason that makes it logically necessary to completely exclude the possibility that a person with an unbreakable will may appear some day. Predicting in the sphere of human action is also uncertain by virtue of four other reasons of a principled nature. The first one is all too familiar: the occurrence of unforeseen events frustrates the implementation of an already taken decision for action. The second one is that human actions have consequences that are unforeseen and, often, also unforeseeable for the actor. The third reason is that upon performing complex actions or activities,⁵ the performer’s decisions that underlie his or her actions may always be revised and changed. The fourth reason concerns foremost long-term predictions. It consists in that it is impossible to predict the exact knowledge on the basis of which people will take decisions and act in the future.

But considering that there are so many factors that make it difficult to predict human actions with a reasonable degree of certainty, the question arises: Is such prediction possible at all? Could

³ Stressing the key importance of the state of knowledge regarding the reliability of predictions, Nicholas Rescher points out an aspect that is not always apparent: every prediction is made within a particular relatively stable meaningful paradigm that has its own direction and that is capable of raising only particular questions. Rescher writes: “The predictive enterprise of any place and time inevitably reflects the prevailing state of knowledge. Every cognitive state of the art has its own agenda of predictive questions. And at any particular junction some questions do not arise” (*Predicting the Future. An Introduction to the Theory of Forecasting*, New York, 1997, p. 57). Or in other words, the state of knowledge at the time of predicting determines not only the reliability of predictions but also that which can be predicted and is worth predicting at all.

⁴ Without going into the contemporary debates on the freedom of the will, I will only note that like a number of other authors, such as, for example, Harry Frankfurt (*Freedom of the Will and the Concept of a Person*. In: *Journal of Philosophy*, vol. 68 1971, p. 5–20.), Peter Bieri (*Das Handwerk der Freiheit*, Frankfurt am Main, 2003.) and Ernst Tugendhat (*Anthropologie statt Metaphysik*, München, 2007, S. 57–73.), I, too, am of the opinion that the question of freedom of the will does not consist in whether the decisions (and, hence, actions) of people are or are not determined by factors over which they have no control (the alternative: determination or freedom)—I think that they are no doubt determined by such factors—but in whether people are capable of controlling their own desires.

⁵ Here I follow the distinction—to my knowledge, proposed for the first time by Georg Henrik von Wright—between “action” and “activity.” In the sense used by von Wright, for example opening the door is an action, whereas swimming or cycling is an activity.

predicting the future in the social-historical world as a whole be doomed to failure? Or is such prediction so uncertain that it is almost like guesswork or divination? Fortunately, the situation is not so hopeless. There is room for predictions in the social-historical world too. Such predictions are possible because not everything in the world of human action is changeable. But even if we assume that everything is changeable, the different factors determining human decisions and actions do not change to the same extent and, more importantly, at the same pace. In the human world there is constancy and repetition. The historian Reinhart Koselleck notes in this connection that “history is never entirely new” and that “there are evidently longer-term conditions or even enduring conditions within which what is new appears.”⁶

The geographical and climatic conditions of human action are almost invariable. They change so slowly that their influence on human activities remains the same for very long periods of time. The institutional and legal conditions of action change faster than the geographical ones. People’s cultural attitudes and mentality change relatively slowly as well. By contrast, at least nowadays, the economic and technological conditions of action change quite quickly. The political conditions change slowly in some periods of time, and very quickly in others—for example, during revolutions. Considering that the different types of conditions and factors of human action change at a different pace, predicting in the social-historical world must meet two specific requirements. The first one is that in making predictions, one must keep in mind the multi-factor determination of human actions and of events caused by them. This is mainly a matter of knowledge. The second requirement is that in predicting, one must judge the relative significance of the different types of factors and, moreover, do so in a context in which this relative significance may change quite quickly. This is a matter of capacity for judgment or, as Kant puts it, the “faculty of judgment.” And since making an accurate judgment is a very complicated problem that cannot be solved by means of rational calculation, intuition acquires a crucial role in predicting. It is precisely this which gives us reason to speak of “the art of prognosis” (Koselleck).

Finally, another peculiarity of predicting events in the social-historical world is also noteworthy. Here the reliability of predictions depends on the distance of the predicted events from the moment of prediction. In this respect we could formulate an obvious dependence: the shorter-term the predictions, the more reliable they are.

This explains why exact short-term forecasts (for example, about the outcome of elections or changes in currency exchange rates) which come true are regarded as something normal and do not attract particular attention, whereas inexact long-term forecasts which come only partly true surprise and amaze us. To put it simply, common sense tells us that we should not trust long-term forecasts too much.

Intending

I have taken as a starting point the understanding that we are interested in what events will occur in the future by virtue of practical necessity: we want to know what will happen in order to decide how to act. This means, then, that we are not indifferent to the events we predict will occur. They are always related to some kind of desires of ours, and that is why we categorize them as desirable or undesirable. When we know that the occurrence of events that will affect us does not depend on our own actions in any way, all we can do is *hope* that the desirable events will occur and the undesirable ones will not. When we go hiking in the mountains we hope that it will not rain. When we go to a concert we hope that it is not sold out. But when the occurrence of particular events depends on how we ourselves will act, when the events will occur as a result of our own actions, we develop a peculiar readiness to act in a particular way. This readiness finds expression in implicit judgments of the type “it is desirable that I do this or that.” *Intention* consists precisely in this readiness to perform a given action. At that, it does not matter whether the intended action is aimed at causing a desirable or at preventing an undesirable event.

This understanding of intention as readiness to perform a particular action contains three necessary structural moments. Firstly, conviction that what the actor or doer intends to do is possible at all. The second moment is judgment of the momentary state as a starting point of the action. The third moment is the idea of the desirable future state that has to be caused through the intended action or, in other words, prediction of what will happen once the action has been performed.

But if intention is readiness for a particular action, isn’t it absurd to speak of failed or frustrated intentions—as we often do? How could one’s actual readiness for action be frustrated? It seems to me that something quite different is at

⁶ Reinhart Koselleck: *The Practice of Conceptual History. Timing History, Spacing Concepts*, Stanford University Press, California 2002, p. 135.

work here. Between one acts, one acts in conditions whose emergence has not been caused by oneself and which one cannot place entirely under one's control. From the point of view of the actor, these conditions are more or less a given. For the actor, they have the form of spontaneously occurring events that simply happen to him or her. It is precisely the changes in these, perceived as events, conditions of an action that may prevent the performance of the action. This may happen if the conditions prove to be such that the action cannot be performed for purely material reasons (for example, if due to some technical problem the engine of the car we intend to drive fails to ignite), or if the conditions change in a way that leads to a change in the intentions of the actor (for example, if a hiker about to go to the mountains learns that there is a snowstorm and therefore decides to stay home). The actor is usually aware that there is always some probability that the performance of the action may be frustrated. His or her suppositions in this respect, however, are not part of the intention itself. Thus, when Donald Davidson justifies the thesis that intentions have an "unconditional form," this means that by virtue of its very formation, our actual readiness to act in a particular way has already left behind all conceivable considerations that could change or cancel it.⁷

Promising

The only way others can learn that someone intends to perform a particular action is if the person in question *declares* this intention. Through one's utterances, one gives expression to one's inner state of readiness for action. For the others, these utterances function as messages. Upon forming their own attitudes and upon their own actions they may take (or may not take) into consideration the declared intentions for action, just as they may reckon (or not reckon) with the actions that follow from those intentions. But what the others may never do is reproach, sanction or generally hold responsible⁸ someone for failing to act upon his or her declared intentions. Declaration of an intention for action in no way entails an obligation to perform this action. Such an obligation arises only if one makes an utterance of another type, namely if one makes a *promise*.

Viewed from a logico-semantic perspective, as a type of utterances promises are performatives. Performatives do not describe things nor do they communicate inner states of the speaker; they directly perform actions. Exactly what action is performed when, for example, A makes a promise to B? A new relationship is established

between A and B, in which A voluntarily makes himself or herself dependent on B, declaring that B may hold him or her responsible for failing to fulfill the promise. *Prima facie*, promises resemble a declaration of intention. Furthermore, every promise contains an implicit declaration of intention. The important thing, however, is that it is not limited to the latter. According to a felicitous formulation, by promising something to B, A actually says⁹ What is crucial here is the assurance that there is not merely an intention to perform a particular action but that this intention is so serious that the promiser is ready to suffer possible moral and/or legal sanctions if he or she fails to perform as promised. A declares that they have voluntarily *obliged themselves* to perform the action and that this self-obligation is the only reason why the obligation to B is valid,¹⁰ and B can believe that A sincerely intends to fulfill their promise.

What is the rationale of sanctions for unfulfilled promises, and what justifies them? Such sanctions—in this case it is entirely irrelevant whether they are moral or legal—have justification in that once the promisee has been assured

⁷ Here is a statement that sums up Davidson's concept of intention, a concept whose basic elements I follow here: "To intend to perform an action is, on my account, to hold that it is desirable to perform an action of a certain sort in the light of what one believes is and will be the case" (Donald Davidson: "Intending," in *Essays on Actions and Events*, Oxford University Press, 2001, p. 100).

⁸ One may be responsible *for* the performance (or non-performance) of an action *to* someone. The conditions that must be met for someone to be responsible *for* something are two: firstly, the performer must have acted of their own free will without coercion, and secondly, the performance of the action must not have been frustrated by actions or events that were unforeseeable for the performer. In its turn, being responsible *to* someone requires that the latter *have the right* to hold the performer responsible and that the performer recognize and accept that right. The right to hold someone responsible arises only if both the performer and the person holding the latter responsible are members of one and the same moral and/or legal community. One may be responsible and may be held responsible only in the conditions of morally and/or legally regulated relations between people. Being responsible itself consists in the suffering and possible compensation by the performer for consequences harmful to other people and resulting from a given action (or omission of action) which the performer was able and obliged to prevent. When the performer begins to seek the causes for the occurrence of the harmful consequences in question in the actions of others, not in his or her own actions, this indicates a reluctance to carry responsibility.

⁹ C. K. Grant, "Promises," *Mind*, Vol. 58, No. 231 (1949), p. 360.

¹⁰ It is hardly necessary to explain why a promise made under coercion is invalid. The primary self-obligation that underlies obligation to the other cannot follow from such a promise.

that they can count on it, that they can assume that the promised action will be performed, they will adjust their expectations and prepare their actions according to conditions that are expected to emerge after the performance of the action, therefore in the event of its non-performance they will suffer material or moral damages.¹¹ Sanctions for unfulfilled promises may vary in severity. The most severe moral and legal sanctions are for insincere promises. Such promises are not fulfilled for the simple reason that even upon making them, the promiser had no intention of fulfilling them. What is reprehensible here is less the fact that the promise has not been fulfilled than the fact that the person who made it deliberately misled others. The sanctions for unfulfilled promises are less severe when the promises were made with the sincere intention of fulfilling them but their fulfillment was obstructed by unforeseen circumstances. Determining whether the unforeseen circumstances that frustrated the fulfillment of a promise were also unforeseeable for the promiser is always a difficult moral and legal problem. Another question (again related to the former question) concerns the fact whether, even if those circumstances were foreseeable, the promiser was actually obliged to foresee them. The difficulty comes from the fact that we intuitively regard the obligation to fulfill a given promise as an obligation only and solely of the promiser. Just how problematic this is can be seen when the fulfillment of a promise does not simply depend on other people too, but is also impossible without the active or passive participation of the promisee. If, for example, B is in hospital and A promises to visit him or her in the hospital on the next day, this promise may be fulfilled only if B is in the meantime not discharged from the hospital.¹² Leaving all details aside, here we can formulate a simple practical maxim: The more the fulfillment of a given promise depends on people or circumstances that are beyond the control of the promiser, the less severe the moral and/or legal sanction for non-fulfillment of the given promise.¹³

As noted above, every promise presupposes a declaration of intention but is not limited to the latter—it also contains an additional assurance that the action will be performed, which entails an obligation to fulfill the promise. The question is, how can we tell that such an assurance was given and, therefore, that an obligation was undertaken. When giving such an assurance, we usually use the expression “I promise you that...” and the promisee can cite those words in order to hold the promiser responsible for the fulfillment of the promise. But couldn’t those words be misleading? We can use the expression “I promise you

that...” not only in the usual sense, to promise something, but sometimes also to threaten someone.¹⁴ For example, we tell our child: “If you don’t do your homework I promise you won’t watch television for a week.” Isn’t there a danger, then, that we may confuse two speech acts that are opposite in meaning: the promise is an act that refers to things that are desirable for the promisee, whereas the threat, conversely, refers to things that are undesirable for the promisee? In my view, there is no such danger and even though we often use the same expression to express promises or threats, we perfectly distinguish the former from the latter. The reason is that the two acts are semantically different: whereas promise entails obligation, threat does not. Whilst the purpose of a promise is to institute an obligation and to assure the addressee, the purpose of a threat is to scare the latter and compel them to act in a way desired by the person making the threat. The idea that someone may hold us responsible for the fact that, having once threatened to harm them, we have not yet harmed them and that they may demand that we do so, is absurd.

¹¹ This general justification of sanctions for unfulfilled promises underlies different explanations about the source of the obligation to fulfill a given promise. For example, according to David Hume the obligation to fulfill a given promise follows from the rules of persons existing in a normative order, whereas according to Adam Smith it follows immediately from the expectations raised in others by the promiser and does not presuppose the existence of established rules.

¹² This as well as other examples of the impossibility of assigning the obligation for fulfillment of a promise only to the promiser are found in: Vera Peetz, “Promises and Threats,” *Mind*, New Series, Vol. 86, No. 344 (Oct. 1977), pp. 578–81.

¹³ However, another case of non-fulfillment of promises is far less clear. I am referring to a sincerely made promise to the fulfillment of which there are no external obstacles but which is not fulfilled owing to the promiser’s inability to make a sufficiently great or sufficiently long effort to perform as promised. This brings us to the problem, known since antiquity, of the “weakness of the will,” which I only want to note here. The question is, how should one understand and especially how should one react to a situation in which the actor has chosen consciously and responsibly the purpose of their action, has no doubts about the rationality of their choice, intends to act and does not encounter external obstacles, yet nevertheless fails to perform the action. As long as it is not entirely clear what defining someone’s will as weak means exactly, as long as we cannot say when we consider someone’s will to be sufficiently strong, we would hardly be able to determine the conditions upon which it is justified to sanction someone for an unfulfilled promise in the circumstances described above, as well as to determine the type and severity of the sanction.

¹⁴ See Páll S. Árdal, “And That’s a Promise,” In: *Philosophical Quarterly*, Vol. 18, No. 72, (Jul. 1968), pp. 225–37.

Predicting, intending, and promising are three different ways in which we humans approach the future. My main purpose was to show above all the difference between them, thereby pointing out that human thinking about the future is differentiated and complex. I hope, however, that the close interrelation between predicting, intending, and promising has become at least partly clear: without predictions of the future, intentions for action cannot be formed; without intentions, obligations cannot be undertaken through promises. But why do we bother distinguishing between those phenomena by explicating the meanings of the terms with which we associate them? Aren't the intuitive understandings of predicting, intending, and promising, which allow us to act and solve our day-to-day life tasks, sufficient? And indeed, as long as we succeed in coping with

those tasks in a satisfactory way, as long as we more or less achieve our purposes and live at peace with others, we do not particularly need to reflect on the meanings of terms we use intuitively. However, this need arises when our predictions fail to come true, when our intentions are frustrated or when it turns out that we are unable to keep our promises. These, incidentally rare, cases in which we encounter problems of action that we need to understand in order to try and resolve them, cause us to reflect specially on ordinary terms that hitherto seemed clear, comprehensible and natural to us. Thus, as human beings, we have a common life motive to reflect on the ways in which we conceive the future. Philosophers, however, also have a more peculiar life motive for that. This motive consists in the time-honored insight bequeathed to us by Socrates that the unexamined life is not worth living.

THE URIZEN OF WHITEHEADIAN PROCESS THOUGHT

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Abstract:

In order to assess the future status and applicability of process modes of thought, three steps are suggested: first, a systematic account of *Process and Reality*'s conception of philosophical speculation; second, its application to the targeted question; third a complementary specification with the help of Whitehead's insistence on duty and reverence.

Keywords : A. N. Whitehead, W. Blake, Philosophy, Process, *Process and Reality*, Coherence, Consistency, Applicability, Philosophical life

*Eternals! I hear your call gladly.
Dictate swift winged words, and fear not
To unfold your dark visions of torment.*

William Blake, The Book of Urizen [1794], Preludium

For a fully-fledged Whiteheadian process thinker, the future status and applicability of process modes of thought is unknown in principle. And we should gladly rejoice at this state of affairs because the very meaning of our lives depends upon this existential elbow-room. We live in an open universe that only partially allows us to foresee events, all the more so if they belong to the highest level of complexity known to us: our common—intersubjective—existence.

Of course, we could take advantage of our knowledge of the past history of Whiteheadian scholarship and of a sharp (and preferably dispassionate) assessment of its current state to anticipate its likely *immediate* outcome. Such speculation will not be proposed here. We would indeed need to carefully peruse the history of Whiteheadian studies and its contemporary context before being able to frame the most applicable imaginative generalization and such a study does not seem appropriate for the present context. For one thing, we would need far more space than it is allowed; for another, by doing so we would wager on the bare efficacy of the actors whereas what we need is to trust their creativity and, most of all, their vision. (While the efficacy of the past pushes experience in the furrow of habit, the creativity of the present, lured by some escha-

tological commitment, re-creates it moment by moment.)¹

Alternatively, we could speculate on the rhythmic development of the world of ideas in the West. There are obviously conceptual rhythms that frame the history of ideas and Whitehead himself would have insisted that there always will be novel conceptual epochs to come. The well-known contrast between pluralistic empiricism and dualistic rationalism (see for instance the opening chapter of James' *Pluralistic Universe*) is a bit too broad to allow the development of an applicable picture in the context of our present discussion. If we consider the last centuries of human thought, the following dialectical movement—displaying a shift of epicentre from Italy to Germany and later to the Anglo-Saxon world (the latter constituting a far more diffuse entity because of its world-wide cultural hegemony)—can nevertheless be identified. Whereas the Renaissance lauded the perfection of static proportions, Baroque art and thought, heir to the Counter-Reformation of 1630–1750, stressed movement, change and growth.

The reaction of the *Aufklärung* was swift: secularization—with its requirements of rationality, optimism and progress—spread its dogmatic wings over the entire social landscape (remember Foucault's *grand renfermement*). With Romanticism, the emphasis returned to feeling, becoming and opacity (or inexhaustibleness), sometimes even irrationality. Then the positivism of A. Comte and later of the *Wiener Kreis* (soon to be exported to the USA) constituted a new *Kehre*, promptly counter-balanced by the first process publications of F. Nietzsche and É. Boutroux, but also of C.S. Peirce, W. James and A.N. Whitehead (not to forget their conceptual relation, H. Bergson).

¹ On the heuristics of the creative advance, see our third section in *Whitehead's Pancreativism. The Basics*. Foreword by Nicholas Rescher, Frankfurt / Paris, Ontos Verlag, 2006.

The conclusion could be: process thinkers can be optimistic because their mode of thought has not yet developed all its potentialities or become generally recognized, even though science is nowadays totally processual. But they should not be dazzled either: “in its turn every philosophy will suffer a deposition.”²

A more suitable, if not promising, analysis follows the path suggested by *Process and Reality*’s (1929/1978; hereafter *PR*) seminal definition of speculative philosophy. It could help to understand the next historical move and its conditions of possibility. Before following the path, we need however to trace it through the sometimes wild conceptual territory Whitehead has left us to explore.

Hence the following three steps: first, a systematic account of *Process and Reality*’s conception of philosophical speculation; second, its application to the question of the future status and applicability of process thought; third, a complementary specification with the help of Whitehead’s insistence on duty and reverence.

1. Process and Reality’s Definition of Speculative Philosophy

The marrow of Whitehead’s understanding of the meaning and significance of (speculative) philosophy is expressed in the first two pages of his *magnum opus*. Unfortunately, *Process and Reality*’s first section is not as straightforward as one could expect from such a prolegomenal statement and the basic criteria used—coherence, consistency, applicability, adequacy and necessity—seem at first reading somewhat fuzzy.

The reader who has taken the time to tame Whitehead’s vision can however avoid the Charybdis of relativism and the Scylla of dogmatism in his or her interpretation. The twofold leading idea is not extravagant at all: on the one hand, each criterion has a proper weight or *raison d’être* in the argument; on the other, only their togetherness makes sense. We will not go all over again the long argument required to establish this thesis since it has been unfolded elsewhere;³ only a short reminder of its conclusions will suffice here. The main concern should be not to explain away the richness of the picture proposed to us.

On the one hand, we need to distinguish the rational requirements of coherence and consistency from the empirical requirements of applicability and adequacy.

The requirement of “logical consistency” amounts to “the exemplification of general logical notions in specific instances, and the principles of inference” (*PR* 3). It obviously refers to Aristotle’s sophistication of the substantialistic

logic of common-sense, stabilized so to speak by Boole’s *Investigation of the Laws of Thought* (1854) in terms of the principle of identity, the principle of contradiction and the excluded middle. In plain language, contradiction amongst categories is to be avoided.

The requirement of “coherence” seeks to establish a categorial democracy in which each category has some genuine weight (independence) and makes sense only in its togetherness with the others (interdependence). In other words, each category has to bring something specific to the discussion without breaking its semantic ties with other categories. Each has to mirror in its own way the presence of the others. The chief culprit that Whitehead constantly denounces is Descartes and his totally incoherent substance dualism or bi-substantialism.

The requirement of “applicability” corresponds to the request for *some* real interpretative power. There is, in other words, no need to build fully coherent and totally consistent systems if they have no concrete explanatory power whatsoever.

The requirement of “adequacy” asks that “everything of which we are conscious, as enjoyed, perceived, willed, or thought, shall have the character of a particular instance of the general scheme” (*PR* 3). It obviously constitutes an ideal, a *focus imaginarius*, but it is by no means an innocuous one: radical empiricism shows through it.

On the other hand, we need to articulate the four criteria—first, respectively at the rational and the empirical level; second, at their *necessary* conjunctive level.

First, Whitehead makes clear that coherence is far more important than consistency: contradictions (unlike paradoxes) are quite easy to fix; lack of coherence, however, definitively cripples a system. “Entia non sunt diminuenda sine necessitate,” as Roberto Poli claims after Hedwig Conrad Martius. For its part, applicability requires some empirical cash value, while the unreachable adequacy is the horizon towards which applicability strives.

Second, one has to recognize that what matters most is the lure towards adequation,⁴ not the

² Alfred North Whitehead, *Process and Reality. An Essay in Cosmology*, Cambridge, Cambridge University Press, and New York, Macmillan, 1929. Reprint: New York, Macmillan Free Press, 1969. *Corrected edition*: Edited by David Ray Griffin and Donald W. Sherburne, New York and London, The Free Press. A division of Macmillan Publishing Co., Inc. and Collier Macmillan Publishers, 1978, p. 7.

³ M. Weber, *Whitehead’s Pancreativism*, *op. cit.*

⁴ Whitehead does not speak of greater adequacy, only of adaequation—hence the *focus imaginarius* effect involved in his use of the criterion.

one towards a consistent coherence. As Jean Wahl (1888–1974), among others, saw clearly: the point of British neo-realism is to understand each thing, not *all* things; lack of consistency is preferable to lack of applicability.⁵

But this still does not bring together the four criteria. In Whiteheadian parlance, the unity (or the fouring) of the four is *necessity*. In a sort of Kantian move (equally reminiscent of the *Timaeus*), we have to understand necessity as the seal or categorial keystone that brings together the two rational and the two empirical criteria. It does so through a peculiar wager on the rationality of the concrete *and* on human beings' capacity to reach it. There is most definitely fitness—no perfect match—of our cognitive tools to reality, from the biological and the cultural standpoints alike. This animal faith of sorts furthermore binds everyone together as a human community dwelling in a welcoming cosmos.

There are two levels in our claim: factual and existential. First, the fitness of our categories is the result of a threefold process of attunement: phylo-genetic (Spencer: the categories that are *a priori* for the individual are *a posteriori* for the species), onto-genetic (Piaget: cognitive categories are developed through sensorimotor and pre-operational stages) and koino-genetic (Bateson: the convergence of individual consciousness is achieved through learning).

Second, each and every one of us is invited to consciously subscribe to this *genetic* necessity. This constitutes the philosophical commitment *par excellence*, but it is by no means restricted to the philosopher, professional or otherwise. To summarize: the simple single-foldness of the four is to be found at the level of the existential commitment of the individual who ratifies through her actions the togetherness of the many and thereby goes beyond it. In ancient parlance, purged of any dualistic trend, we have to fully acknowledge both our terrestrial roots and our celestial destiny.

Now there is a very simple concept to name this community in the act: common sense or *sensus communis*, in which theory and practice, the rational and the empirical, *necessarily* converge. Granted, we need a refined version of common sense in order to avoid the negative connotations of the term. Arendt has provided interesting insights here around the notions of intersubjectivity and interobjectivity,⁶ as did Husserl with his concept of “Urdoxa”⁷ and Merleau-Ponty with the “perceptive faith”⁸ that characterizes our belonging to the world: not only are we sure that what we perceive is real, but a momentary suspension of perception does not nullify that certainty. A

similar, more recent attempt actually took place in Whiteheadian studies with Griffin's *hard-core common-sense notions*,⁹ that qualify the universal and primordial beliefs that human beings do not question *in practice*: their fundamental freedom, the causal efficacy of their actions, the existence of a real world, of values and of a temporal drift. What is *fundamentally* (necessarily) reasonable is what does not endanger the Urdoxastic vital—so to speak carnal—link we maintain with the perceived world.

In sum, the concept of necessity that Whitehead activates in the first Part of *Process and Reality* embodies the fundamental conjunction of the theoretical and the practical sides of life.

2. Developmental Typology

What can we learn from this typology to provide an answer to the debated question—the future status and applicability of process modes of thought? To operationalize the interpretational grid we have just skimmed through, it seems advisable to introduce two further distinctions: between insiders and outsiders of a discipline—in our case, between Whiteheadians and non-Whiteheadians—and between conviction and persuasion. The former names the straightforward difference existing between Whiteheadian scholars and “specialists” who are neither familiar with the “philosophy of organism” nor likely to get acquainted with it unless some good reason is provided; the latter is the by-product of centuries of rhetorical meditations.

⁵ “L'Anglais veut comprendre chaque chose et non toutes choses; il préfère la contradiction dans l'ensemble de la théorie à la méconnaissance d'un caractère de fait particulier” (Jean Wahl, *Les Philosophies pluralistes d'Angleterre et d'Amérique* [Thèse principale], Paris, Librairie Félix Alcan, Bibliothèque de Philosophie Contemporaine, 1920, p. 87). See for instance what Whitehead says of religion and dogma in *Religion in the Making* (1926), chapter II.

⁶ “A three-fold commonness” (Hannah Arendt, *The Life of the Mind*. One-volume edition, San Diego / New York / London, Harcourt Brace Jovanovich, 1978, p. 50).

⁷ The Urdoxastic theme is present throughout Husserl's thinking, from the published work to the *Nachlass*: in §104 of the first volume of the *Ideen* (1913), in his “pre-Copernician” essay (“Die Urarche Erde bewegt sich nicht” [1934], in *Philosophical Essays in Memory of E. Husserl*, New York, Greenwood Press, 1988, pp. 307–325), and in the *Introduction of Erfahrung und Urteil* (1939/1954).

⁸ Maurice Merleau-Ponty, *Le Visible et l'Invisible. Suivi de Notes de travail*. Texte établi par Claude Lefort, accompagné d'un avertissement et d'une postface, Paris, Éditions Gallimard, Bibliothèque des Idées, 1964, pp. 17ff.

⁹ David Ray Griffin and Huston Smith, *Primordial Truth and Postmodern Theology*, Albany, New York, State University of New York Press, 1989, esp. pp. 90–91.

To convince someone of something, the speaker needs to talk to the intelligence of his/her audience; to persuade, she needs to mobilize their will. To be convinced is not to be persuaded: I can know for sure that smoking tobacco is lethal in the (more or less) long term but as long as I don't act accordingly, this knowledge is useless. To be persuaded is not to be convinced either: I can refrain from smoking for reasons totally foreign to the scientific ones usually broadcasted (say to keep my soul clean and prevent unfortunate metempsychosis) or even for no reason whatsoever—simply because such decision has been spontaneously taken and that it worked so to speak *ex opere operato* (remember the *will to believe*). What does it say about the stakes of rationality? First, the bi-directionality of this argument (the fact that it works both ways) is appropriate only if the idea of a universal reason is obliterated by a healthy relativism. There are no “right” reasons to stop smoking; everyone can have a different one, which can be convincing and perhaps even persuading to others. Of course, science is not a fairy tale and its claim to objectivity is well established by internal perfection and external confirmation (as Einstein would say), but science does not address the core of our experience. This brings us to the second point: the fundamental rational—not experiential—opacity of the common world.

Now that we are equipped with these complementary concepts, we can rephrase the question of this special issue: under what categorial conditions will scholars not only be convinced but also persuaded of the virtues (rather than the vices) of Whiteheadian process thought? In order to keep our discussion focussed, we will add an additional filter inspired by the current way in which debates are conducted (or prevented) in academia. That filter is not dogmatic but heuristic; it constitutes less a bold claim than an obvious simplification that allows to obtain promptly a provisional synthesis.

Let us start with our hypothetical universal fact (or filter): specialists (almost) never seriously talk to scholars who do not happen to share the very same expertise—unless these fall under the category of “students” and in that case they are equally likely to talk *at* them. Exceptions put aside (and they are all the more remarkable), debates are usually taking place among the happy few who share the same concern about one field of expertise and do not really need to expose endlessly their presuppositions and the meaning and significance of their concepts. In short: expert knowledge is never put at risk by a truly open discussion.

Besides the equally obvious power games that take place within a given domain, what strikes the internal observer is the emphasis on *rational* conviction. *Rational* points here at the nature of the arguments that tend to focus on issues of coherence and consistency. *Empirical* conviction would animate another theatre, as we will shortly see.

Specialists have that faculty of enjoying only the philosophical writings of their elected single philosopher. Philosophy is clearly a very personal matter and one can see the affection that can bind, through the ages, the reader and the author. But hagiography should be avoided at all costs, for the simple reason that it is the sure sign of the imminence of inert ideas. Within the Whiteheadian field itself, the accent tends to fall more on bare conceptual matters than on empirical ones. Hence a first conclusion: what the specialist can achieve among his/her peers is to see his/her interpretation recognized as consistent and/or coherent. But such consensual discussions have absolutely no impact whatsoever on the outsiders: in the very same way that Whiteheadians are not likely to entertain the reconstruction of the late Heidegger's puzzle with his own categories (e.g. *Raum*, *Eingeräumtes*, *Freigegebenes*, *Grenze*, *Wesen*, *Begriff*), Heideggerians have no interest, say, in the togetherness of “Many,” “One” and “Creativity.” Nobody denies that the concept “horismos,” that is of horizon or boundary, can be activated in both cases, but such cross-elucidatory path seems a waste of time and, if not, it would be foolhardy to proceed without first devoting some serious thoughts to the conditions of possibility of such a dialogue (something, by the way, that is precisely allowed by the intricate levels of meaning that are systematized in Whitehead's definition of speculative philosophy). To further exemplify: this rationally convincing type of work has been done by the journal *Process Studies* that has no doubt firmly established excellent standards in Whiteheadian scholarship and thereby created a “process community” but, like all other specialised journals, it has done so by *securing* the field.

If we now turn our glance on the empirical side of Whitehead's definition, the converse situation is expected. On the one hand, internal debates are often too entangled in conceptual issues to really worry about their pragmatic cash-value, that are taken for granted. On the other hand, external debates are the place where an advantage in applicability can make all the difference. In the case of Whiteheadian scholarship, quantum physicists constitute perhaps the best example of such an interest expressed from the standpoint of the applicability of Whitehead's categories (most

cently: Shimony, Stapp, Malin, Hättich, Epperson and others). In other words, whereas insiders are expected to be convinced mainly by rational fiddlings, outsiders are likely to be convinced only by the manifestation of a significant differential in applicability. To repeat: we do not deny that this heuristic sketch is in part an imaginative simplification—what matters are the pragmatic consequences that could be drawn from it.

So far we have two general cases: insiders and outsiders are convinced by different reasons—but when are they persuaded? Quenching one's intelligence is one thing, acting accordingly is another. What makes the difference between conviction and persuasion? When does philosophical reflection become compelling? When does it necessarily impact behaviour? Could it be simply when there is a total correlation between the life of the philosopher and his/her rational and empirical concerns? Here is for instance what Flanagan claims:

Simply put, the attraction of James the philosopher is that he is to me the best example I know of a person doing philosophy; there is no hiding the person behind the work, no way of discussing the work without the person, no way to make believe that there is a way to do philosophy that is not personal.¹⁰

The heuristic hypothesis inspired by the reading of Whitehead's definition of speculative philosophy is thus the following: persuasion strikes when rational and empirical conviction merge, an event that takes place under the spell so to speak of an individual who is precisely embodying that synthesis.

To conclude our exercise of applied typology: we argue that insiders and outsiders are likely to be convinced of the relevance of some form of Whiteheadian process thought for different reasons. But this still does not say much about their persuasion. Living philosophy needs to be a *lived* philosophy. Whiteheadians will not only convince their fellows philosophers and scientists but persuade them of the value of their categories when they will be themselves living philosophical—spiritual if you like—examples. Socrates would have talked about the call of authenticity, Whitehead provides two concepts to specify this in a perhaps more pedestrian manner: duty and reverence.

3. Duty and Reverence in the Light of the Creative Advance

According to Whitehead,

Duty arises from our potential control over the course of events. Where attainable knowledge could have

changed the issue, ignorance has the guilt of vice. And the foundation of reverence is this perception, that the present holds within itself the complete sum of existence, backwards and forwards, that whole amplitude of time, which is eternity.¹¹

This claim, which occurs in the specific context of a philosophy of education lecture, has a direct relevance to our discussion. First because it points at the “religious” dimension of education that mirrors the spiritual dimension of existence. Second, because it is easy to see at work in these lines the conditions of possibility of the “creative advance” itself. To argue that the core concept of the late Whitehead is the “creative advance of nature” is an inspiring move that discloses three fundamental characteristics of all processes—creativity, efficacy and vision.

All actualities (according to their grade) are *creative* in so far as they embody new contrasts and intensities in a new extensive region (in the technical sense of *Process and Reality*'s Part IV). By definition, the extensive region occupied by the new actuality was never occupied by any actuality and will never be occupied again by some other actuality; furthermore, the exact same contrasts were not possible before and will not be possible after the given concrescence; the intensity of its experience, in so far as it is eminently private, is sepulchral, incomparable.

Actualities are *efficacious* through their structural (objective and superjective) world-loyalty. Every actuality springs from the efficacy of its past (or prehended “actual world”) and, in its turn, occasions a certain type of future. The comparison of embodied intensities is only possible in this structural context, i.e., *ex post*.

Actualities are *visionary* through the instantiation of a trend towards higher intensities of experience. The sole interplay of creativity and efficacy does not guarantee any creative advance at all, only the ruthlessness of existence. Creativity is indeed totally wild while efficacy imposes a blind necessity upon the creative outbursts. It has been often remarked that Whitehead was a Victorian gentleman whose supreme optimism had been directly inspired by the techno-scientific utopia of his peers (cf. Francis Bacon and Thomas Henry Huxley, perhaps tamed by Samuel Butler), which is itself inseparable from the *Zeit-*

¹⁰ Owen Flanagan, “Consciousness as a Pragmatist Views It”, in Ruth Anna Putnam, ed., *The Cambridge Companion to William James*, Cambridge, Cambridge University Press, 1997, p. 47.

¹¹ Alfred North Whitehead, *The Aims of Education and Other Essays*, New York and London, The MacMillan Company and Williams and Norgate, 1929. Reprint: New York, The Free Press, 1967, p. 17.

geist of nineteenth-century Romanticism, of Darwinian evolutionism, and of a blind faith in the accelerating industrial revolution and in the civilizing importance of British colonialism.

In sum, from the perspective of human beings, creativity is indeed the crux of the creative advance, but it is by no means the entire story: efficacy involves duty and vision involves reverence. Ignoring duty and reverence would be equivalent to act as if we were stuck at Piaget's preoperational stage (roughly ages 2-7, when motor skills are coordinated but without any significant mental actions on objects)—or even perhaps at the sensorimotor stage (roughly ages 0-2). The thirst for creativity would be unquenchable and its likely outcome probably full of sound and fury.

4. Conclusion—Creativity and Philosophical Commitment

The strong processual context advocated by Whitehead asks us to become worthy of the creative advance, which involves preciously cultivating duty and reverence. The individual who achieves this worthiness will be persuasive. The future of Whiteheadian scholarship depends indeed upon creative individuals who are able to take upon themselves the living ideal of philosophy and to be thus a vibrant example for their community and beyond. But isolated individuals, whatever their creativity, cannot achieve much without institutional support (and when they do, this gives only a meagre idea of what they could have done with proper support). Last but not least, without vision, the creative individual can benefit from whatever structural support, his/her output will only be the result of chance backed by necessity. In this year 2008, a Whiteheadian scholarly tri-une archetype comes to mind: John Cobb, Claremont's *Center for Process Studies* and a certain Christian vision for the common good. In Whitehead's words:

Morality of outlook is inseparably conjoined with generality of outlook. The antithesis between the general good and the individual interest can be abolished only when the individual is such that its interest is the general good, thus exemplifying the loss of the minor intensities in order to find them again with finer composition in a wider sweep of interest.¹²

Right-wing philosophy, that roots itself in a standpoint that seeks to promote only the interests

of one half of the population, is a tragic oxymoron—full stop.

Now, neither creativity nor vision can be taught. Vision can be shared or suggested by interplay of scholarship and commitment—not learned. Creativity is a universal gift that has to be activated by the individual who decidedly takes the risk of adventure. When Whitehead speaks of adventure he obviously thinks more of a successful Victorian exploration than to the tragedy of the elusive authenticity of existence and it is thus advisable to temper his fundamental optimism with the help of William James, who has indeed shown unambiguously that the philosophical quest is intrinsically risky (remember Plato's "beautiful risk"). Efficacy is the easiest bit in so far as it involves only (!) material and intellectual resources that can be pragmatically made use of.

Who else than a prophetic process poet could provide the right banner for our speculations? In Blake's *œuvre*, *Urizen* refers both to the *horizon* of our civilization and to *your reason* as it shapes our common destiny.¹³

When reason is bifurcative, reductive, when it most desires "joy without pain" and a "solid without fluctuation" (*The Book of Urizen*, 1794, Chapter 2), it is a closed horizon that is in the making and a doomed future that torments if not threatens all forms of life. Persuasion is in vain. When reason is holistic, the open horizon of the creative advance can again animate our very existence and, through duty and reverence, announce liberation. This must be the reason why education—the art of the utilisation of knowledge—has to be, in Whitehead's lexicon, religious.

According to process philosophers, "[t]he problem with the man is less what act he shall now choose to do, than what being he shall now resolve to become."¹⁴ The same holds for schools of thought.

¹² *Process and Reality* 15.

¹³ Cf. Peter Ackroyd, *Blake : A Biography*, New York, Alfred A. Knopf, 1996.

¹⁴ William James, *Principles of Psychology* [1890]. Authorized Edition in two volumes. Volume Two, New York / London, Henry Holt & Co. / The MacMillan Company, 1890, Vol. I, p. 288, debating Schopenhauer.

GLOBAL CULTURE AND CULTURAL IDENTITY: AN AXIOLOGICAL PERSPECTIVE

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Abstract:

In past decades, the globalizing phenomenon is joining with the new concept of "Global culture," which designates a homogeneous cultural reality and modifies the axiological scale by placing utilitarian values on the highest level. In this paper, we analyse relations between culture and global culture, traditions, cultural identity and globalizing, global culture. Also, we reject the idea of "global culture" and conclude that in globalization conditions, any tradition and, essentially, any culture can exist and keep its vigour and identity as long as it is continually recreated in accordance with the claims of modernity. This recreation is the basis of any real dialogue. This dialogue enables the affirmation of cultural identity, even through its diversity, the development of the universal culture and, undoubtedly, the improvement of the human condition.

Key words: globalizing culture, global culture, value, cultural identity.

It is quite obvious that of late culture, globalization and postmodernism represent a conceptual trinity insistently focusing on political, economical, diplomatical, cultural and philosophical approaches. The explanation is given by researches on the global processes which focus on the deep and rapid changes in the sphere of culture generated by the amplitude and ubiquity of globalization, one of whose subsequent consequences is terrorism which has reached an explosive and frightening level. The effect of globalization on culture is regarded with some hope but it mostly raises many questions and offers few solutions.

In his book *Reality Isn't What It Used to Be* (1990), Walter Truett Anderson points out three characteristic processes shaping the trajectory towards what he names the postmodern world. From these processes, the third one in which we are interested here is the birth of a global culture with a really global outlook on the world. In this sense, globalization provides a new arena where all the systems of belief can contemplate themselves and be aware of the others' existence, where people from everywhere fight in an unprecedented manner in order to find who and

what they are¹. If we agree with Anderson's analysis, supported directly or indirectly by other authors too, the third characteristic phenomenon of the contemporary era, i.e. the development of a global culture, raises several conceptual and functional but quite complicated problems. Previously, I have comprehensively analysed these problems, so here I'll only make a few specifications on this topic.

Nevertheless, globalization is present everyday in our life. It is different from globality which means something else. Globality implies a system of reciprocal relations where all the peoples on our planet are involved. Due to the demographic explosion and new communication technologies, individuals and local communities came out of their millennial isolation and joined a planetary community. From this ground the feeling of the solidarity with others burgeons no matter where they live. Considering this, globality as a form of universality explains human existence in the present historical age. In contrast with globality, globalization is placed at another level, as a process subsequent to the former. Globality represents the abstract universality, while globalization is the expression of the concrete. Its manifestations are mostly detectable in the sphere of the utilitarian values that define contemporary civilization and are echoed at the cultural level. The globalization process is set in motion by some defining factors due to their amplitude and dynamism, such as information, finances, trade, production and technology², which transcend national borders, abolish the principle of state sovereignty, strengthen interdependence at the planetary level, modify thinking and life styles.

Consequent to the omnipresence of signs of globalization, the syntagm "Global Culture" or "McWorld Culture," are as deprecatory in connotation as they are broad in their use. But how is global culture to be understood? Two issues of configuration can be seen concerning this involving concept. One is raised by the globalizing phenomenon itself; the other is raised by the postmodernism theorists. Although apparently di-

vergent, both issues converge onto the same point, under the sign of the universalization of the markets.

From the globalization point of view, what is named today "global culture" designates a homogeneous reality whose cohesion, as Benjamin Barber notes, is proved by the communication systems, information entertainment and trade³. Its symbols are the internet, DVD, TV, soap-operas, pulp fiction, hard rock, Disneyland parks, McDonald fast food, which ignore the specificity of national cultures and induce a global life style. The outcome of such a culture stimulated by expanding trade presents not only many consumer goods but also a less dogmatic ideology which, while impressive and persuasive, modifies the axiological scale by placing utilitarian values on the highest level. Due to their facile, shallow and hedonist nature, these products have an unusual force of persuasion through which they take into possession especially outwardly oriented minds. The utilitarian way is easier and alluring but ultimately perverse, while the way of self cognition is infinitely harder and therefore filled with sacrifices. This explains its scanty adherence among people in comparison with the former.

The second issue regarding the concept of global culture is of a theoretical nature and starts with postmodernism. Marked by ambiguities and evasiveness, postmodernism is a nihilistic trend, another form of nihilism which provoked the crisis of modern culture. It intends to offer a new hierarchy of values based on the transgression of classical rationalism, attempting to retrieve other apparently deeper and richer fields of human personality. These fields are represented in the spectrum of human sensitiveness and the integrating virtues of different cultures can be perceived through them.

The immediate data prompt us to believe that what was named a *superculture* seems to be a living collage—a characteristic form of the postmodern art—where the ensemble effect matters, not the detail. This is an only opinion, either correct or false. But certainly one of the most serious challenges of our time, which drew the attention of several thinkers, theorists, and politicians is the following: which will be the representative image of global culture? What kind of values and beliefs will guide the basic structures of expanding global civilization? To risk an answer, which can be classified in the category of predictions, means to affirm that in the future global culture will be very frail with regard to the ideas of patrimony and common values, but, of course, it will be more diverse than ever⁴. Such predictions are not able to bring peace to our souls, but on the contrary they prompt new questions such as: what will a

global culture look like? What will happen with the cultural identity of human communities? Which will be the relation between globality and the cultural identity?

In the approaches dedicated to the global culture, even the concept of culture is used with different meanings, from a restricted one to an extensive but ultimately misleading one. Philosophy starts with the thesis that, in the ontological sense, the culture universe is not a simple agglomeration of the isolated and vague facts⁵. The facts of culture have a converging point that explains them and in the same time ranks them in a coherent and organic system. Such an essential role is performed by value. That is why culture without value does not exist. It is a truth to legitimate the axiological perspective on culture and to pass beyond some one-sided and discordant outlooks peculiar to other theoretical approaches.

The axiological point of view in conceiving culture demands several clarifications about the syntagm *global culture*. Firstly, the word *culture*, so solemn and noble but so misused means first and foremost—mind. For mind confers cultural depth and authenticity, even if, in accordance with some contemporary assumptions, it involves other dimensions too, which formerly were alien to it. By its onthological conditions, culture connects a complex and profound reality in which, as Simmel notes, two elements coexist: the subjective soul and the objective spiritual outcome⁶. This shows a qualitative determination of the culture being, in which the human being is sublimated. Adding the attribute *global* to the term, *culture* brings forth a change in the content that points to a quantitative prevailing totalizing sense.

As I stated on different occasion, I understand culture to be an ensemble of values and assets made by the human being in the process of its becoming onto mankind⁷. I underline the distinction between values and assets, because not all values wear themselves out in assets; in exchange, all assets are valued things. In this sense, culture is indestructibly connected with the whole system of values, which confer meaning to human life and wholly express it.

In a phenomenological sense, global culture affirms its propensity towards interdependence and connexion of people at the planetary level, by means of symbols and slogans which belong to the markets sphere and the utilitarian values. From this point of view, even money, with its special impact on cultural changes, inculcates upon it a system of values and beliefs.

We may conclude that the syntagm *global culture* sometimes replaced by another linguistic construction, *i.e. superculture*, is applied to some

reality reorganized in a quantitative way, following the utilitarian and hedonist principles. Leaving in the middle ground until the abandonment of the spiritual values which ever lead towards self-improvement (in Herder's sense), global culture propels first and foremost utilitarian or civilizing values engaging the individual in a shallow, thin existence. The existing lack of balance in the values—for which the present culture crisis is held responsible—further reinforces the very civilization which is the bearer of the globalization factors.

I didn't mean to condemn this civilization for its utilitarian values or to overrate the spiritual area. At the present level of thinking, and taking into account the practical aspects of life, such position seems to be superfluous. There is no doubt about the fact that not only art, morals, religion and philosophy need to exist and we should recognize the benefits of science and technique, economy and politics where a huge effort of creativity is invested. The proper values of these domains have to coexist in a mutual action so that one cannot exist without the other. In this respect the relation between culture and civilisation is correctly understood by Ricoeur when he states: "There are two modalities through which mankind can go over time: civilisation develops a certain sense of time which is based on accumulation and progress, while the way a people develops its culture is based on a law of faithfulness and creativity; a culture dies as soon as it is not renewed and recreated."⁸

Ignoring the compulsion of time and space, the global culture, which seems to be another face of a so-called "consumption culture," is defined above all through its tendency (whether openly declared or not) towards globalization and universalization. From here the question rises: what kind of relation is established between global culture and cultural identity? Does global culture temper somehow the annihilation of the creative energies of the local?

Culture and cultural identity form a correlation, similar to correlations like one-many or absolute-relative. Culture is the whole and the whole represents the ek-(s)-tention, outside of which there is nothing, as Aristotle maintains⁹. In its turn, cultural identity reveals itself still remaining what it firstly is in the context of the whole, the universal and then, through differentiation when confronted by others. In the most general sense, culture (the one) constitutes the environment where the cultural identity (the multiple, the relative) affirms and exists. From an ontological point of view, I consider culture to be the reality created by man, different from

natural data, a type of reality which is not opposite to nature, but which prolongs and sublimates it, giving a subtle harmonization between man and the ultimate essence of things¹⁰. In this respect we talk about a single culture which expresses in a synthetical view the experience of the human species and man's singularity in the cosmos. In the same direction of the whole and integrality, the axiological outlook leads us when it considers culture as the reality of all values, from the utilitarian ones to the spiritual others which give meaning to human life.

Therefore, in a metaphysical sense, there is a single culture which defines man as he proceeds from this level of approach to the functional one. We must therefore take into account the temporal and spatial conditioning that marks the achievement of the culture. Consequently, we have to do not with one, but with a lot of cultures raised on the route of a historical, highly tense process, with a great variety of historical and environmental conditions. Thus, ethnical groups, peoples, and nations through the generations connected timelessly to the metaphysical thrill of existence, expressed themselves, their spirituality and their way of life in the original forms of culture, affirming their individuality in the world.

The appropriations of each culture were crystallized through the definite contribution of the conditions of their formation and were consolidated with the aid of other factors determining the finality of culture. As Tudor Vianu remarked, there is a natural link between the conditions and the purposes of culture. Belonging to some different national communities, people live in very varied environments which entail their reason and model their sensibility. In correlation with the variety of the living conditions and their own sensitivity, they figure a diversity of purposes which will form specific cultural finalities for each community. In every epoch or stage of its development culture maintains respect towards certain values, proper to the time and the aspirations of each society. Therefore "even if we admit an unitary and progressive evolution of human culture... the cultural ideal, before being generally valuable for the whole mankind, is proper to certain societies and certain epochs."¹¹ I may add that its spiritual force models the culture of each people stressing elements which define its identity. Consequently, there is a complex *i.e.* of factors spatial, temporal, environmental, spiritual and axiological ones which render specificity to each national culture. And although the nation sublimates its spiritual energies in the original values, the nation still constitutes the support

of the cultural identity. That is why some theorists speak firstly about a national cultural identity, and only after that, through derivation, in an extensive sense, about a regional cultural identity, or, through compression, about individual or group ones.

On these grounds the specificity and the difference are affirmed, explaining that the diversity of cultures in human history appeared on the ontological commune for the whole substratum. This substratum provides for cultures a unity which is endangered by their dynamic variety. Therefore, we may speak about *culture* and *cultures* in the sense of the conceptual correlates mentioned above.

After this short theoretical excursion, I would restate a previous question: is cultural identity threatened by global culture? Partially, the answer was given above. Now I'll conclude with some remarks about two major premises. The first one considers cultures open entities, apt to intercommunicate. The second lies in the idea that a culture exists and preserves identity as far as it recreates its tradition and its own values.

Given the constitutive determinations we referred to, cultures are not at all monolithic and completely separated entities, as Spengler believed. On the contrary, preserving its identity, fed by what Ricoeur named "the ethic-mythical nucleus,"¹² or by certain people's vocation (as a Romanian philosopher has discussed more accurately¹³), every culture has an open character: it is always able to receive, to assimilate or to reject influences from outside and, in turn, to offer to other cultures something worthy of attention. The history of mankind is full of facts proving the communication among cultures. There is no doubt about this. The difficulty appears when we analyse the ways cultures communicate. Is communication a natural process determined by the intrinsic requirements of diffusion of values—something that represents a fundamental constituent of the universal culture dynamics—or is it a one-sided action violent or non-violent means to impose the values of a certain culture onto others—something induces intercultural tensions and conflicts. It seems to me that the second case is in accordance with the global culture.

Conceived through the assets and the symbols produced in one or several centres of technological and financial power, global culture is propagated with the help of the new technologies of communication and the compelling instruments proper to the market economy. It does not have a dialogue with other cultures, but imposes values,

mentalities, life styles unfamiliar to the others, attacking traditions, religions beliefs moral and legal norms which have long built up their own identity. Therefore, it is not about a new arena where the globalization would make possible the tolerant and respectful affirmation of the differences and identities; it would be beneficial and preferable to stimulate the mutual communication and, of course, the development of the universal culture patrimony. And this ought to be one of the noblest goals for which the modern means of communication should be used. It is clear that global culture can not be a substitute for universal culture and this is a problem that imposes itself on any approach. What is fundamental is the underlying fact that a "uniform" culture oriented towards commerce and not towards spiritual satisfaction erodes and threatens the national cultures' identity and even their regenerating background.

Of course, drawing attention to the dangers threatening cultural identities, I do not argue holding onto obsolete traditionalism, at the price of the sacrifice of people's right to dignity and autonomy. The whole development of the present world civilisation has brought huge benefits for the improvement of conditions for mankind. The problem that rises is this: how can the cultural treasure of each people be modernized without sacrificing tradition? How could we accept the others while remaining genuine ourselves? The answer to these questions cannot be found in the syncretism of the global culture that standardizes by its nature. For it is true that markets can be globalized but culture cannot. The adequate answer to our endeavours can be sought in the spiritual fund which dwells in the soul depth of each people.

It is from here that creative energies must be resuscitated and stimulated in order to renew the richness of each culture and to place it midst the intercultural dialogue that can offer the answers in order to live up to the challenges for mankind and for each nation. Any tradition and, essentially, any culture exists and keeps its vigour and identity as long as it is continually recreated, in accordance with the claims of modernity. This recreation is the basis of any real dialogue. This dialogue enables the affirmation of cultural identity, even through its diversity, the development of the universal culture and, undoubtedly, the improvement of the human condition.

Notes

¹ Walter Truett Anderson, *Reality Isn't What It Used to Be*, Harper, San Francisco, 1990, p. 27.

² Cf. Mircea Malița, *Zece mii de culturi, o singură civilizație*, Bucharest, Nemira Publishing House, 1998, pp. 102–103.

³ Cf. Benjamin R. Barber, *Jihad vs. McWorld. How Globalism and Tribalism are Reshaping the World*, Ballantine Books, New York, 1995.

⁴ Cf. The Work Programme of The Council for Research in Values and Philosophy, for the International Conference “Philosophical Challenges and Opportunities of Globalization,” Boston, 7–9 August 1998.

⁵ Cf. Ernst Cassirer, *Eseu despre om. O introducere în filosofia culturii umane*, Bucharest, Humanitas Publishing House, 1994, p. 306.

⁶ Georg Simmel, *Philosophische Kultur (Gesammelte Essays)*, Dritte Auflage, Postdam, Gustav Kiepenheuer Verlag, p. 239.

⁷ See Marin Aiftincă, *Culture, Freedom and Democracy*, in “Culture and Freedom,” Washington, R.V.P., 2001, p. 11–12.

⁸ Paul Ricoeur, *L'histoire et vérité*, Edition du Seuil, Paris, 1955, p. 286.

⁹ Aristotle, *Physics*, 212b, 14.

¹⁰ Vasile Băncilă, *Filosofia vârstelor*, Bucharest, Anastasia Publishing House, 1997, p. 104.

¹¹ Tudor Vianu, *Filosofia culturii*, in: *Works*, vol. 8, Bucharest, Minerva Publishing House, 1979, p. 293.

¹² Paul Ricoeur, *op. cit.*

¹³ C. Rădulescu-Motru, *Vocația factor hotărâtor în cultura popoarelor*, Bucharest, Casa Școalelor Publishing House, 1934.

LOGIC AND THE FUTURE

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Abstract:

Over the last sixty years, marked by spaceflights and the cybernetization of the human activities, logic has preoccupied specialists, but at the same time, it has attracted the interest of many others with an extraordinary force. That is similar with what happened to physics in the first half of the twentieth century or to psychoanalysis, which, at a certain moment, had become an everyday conversational topic. Obviously, such phenomena do not equate with genuine public understanding of scientific knowledge, they only express a certain fascination for the mysterious and sensational side, for media propaganda and celebrity. Certain scientific domains have benefited occasionally from a certain mysticism they succeed in generating.

Keywords: cybernetization of the human activities, mathematical language, logical calculus, logicization of the sciences, language-games, technical-scientific revolution in the thought method, the law of the gap between the technical-scientific revolution and the mental revolution, the law of the informational distortion.

The Romanian logician and philosopher Petre Botezatu (1911-1981) argued in 1973 that the world was on the threshold of an era of logic that was going to blur away the apocalyptical aspects foreseen by more than a few thinkers in the time of Nostradamus (1503-1566) and particularly after the Second World War. Several scientific, philosophical, and technical indicators gave hope to the Romanian logician.¹

First, he notes that, beginning with Aristotle to the present day, the studies in the field of logic have prevailed by often attracting many researchers from all scientific and philosophical fields. Moreover, in troubled times, when authorities do not allow people to question the correctitude of their rational endeavors, logic is deserted and even despised.

Over the last sixty years, marked by spaceflights and the cybernetization of human activities, logic has preoccupied specialists, but at the same time, it has attracted the interest of many others with an extraordinary force. That is similar with what happened to physics in the first half of the twentieth century or to psychoanalysis, which,

at a certain moment, had become an everyday conversational topic. Obviously, such phenomena do not equate with genuine public understanding of scientific knowledge, they only express a certain fascination for the mysterious and sensational side, for media propaganda and celebrity. Certain scientific domains have benefited occasionally from a certain mysticism they succeed in generating.

Almost every science has experienced such moments once in the process of its constitution and in the time of its perfection. Nevertheless, logic goes beyond the order of a fortuitous contextual domination of the scientific domain. Since its appearance, some 2300 years ago, it has undergone several alternating periods of good and bad fortune. That happens because logic is more than a theoretical complex; it includes a rational range of methods and procedures, indispensable for scientific knowledge and human communication.

Furthermore, with the help of mathematical language, over the last sixty years logic has attained a new appearance and attracted scholars' attention with extraordinary force. They have understood that scientific theories must be constructed correctly and thus started to resort to meta-logic. Problems of logical calculus started to invade the electronics journals; the textbooks on cybernetics opened with chapters of logic. However, in the 1950s, at the beginning of this process, logic still played a secondary part; "... the phenomenon of logicization was still called mathematicization or cybernetization."² The methodological dimension of mathematics—also visible in the scientific domains affected by the mathematicization—was subsequently highlighted, yet the condition of logic was indeed illustrative. Logical research has been done without resorting to mathematics; likewise, logic is applied

¹ Petre Botezatu, *Semiotică și negație. Orientare critică în logica modernă*, Editura Junimea, 1973, pp. 15-20.

² *Ibidem*, p. 17.

In several didactic, scientific, philosophical, ethical, juridical domains without the use of mathematics. Nonetheless, for the sake of additional theoretical thoroughness, logic does no longer avoid mathematical language.

Accordingly, the French logician Robert Blanché calls for a double reading of any science: an abstract, rational, and formal one on the one hand, and a concrete, empirical, and material one on the other.³ Today, in the light of Blanché's remarks, an experimental geometry doubles the theoretical geometries. As early as the third decade of the twentieth century, Ludwig Wittgenstein anticipated this state of logic and mathematics. He claims in his *Tractatus* that "Mathematics is a logical method"⁴ still using the tools of modern logic for the analysis of the scientific language, thought and their relationship with reality. Mathematical propositions, he writes, express equations, not ideas, they are pseudo-propositions. Their function is purely relational, that is, to derive non-mathematical propositions from other non-mathematical propositions. As this is a question of propositions based on previous propositions, logic is directly involved. Thus, mathematics is, basically, a rigorous materialization of the logical sequences. In other words, in our opinion, without human rationality and logic, mathematical objects (both the variables and the constants) would remain disconnected, they will not be derivable from one another through operations that are logical in their essence.

By cogently adhering to this belief, Bertrand Russell, the creator of modern logic, founded logicism, a philosophy regarding mathematics as an immediate extension of logic, so that mathematical relations prove their logical foundations: "... logic is the youth of mathematics, while mathematics is the maturity of logic."⁵

Petre Botezatu maintained that the mathematicization of the sciences requires a reformulation capable of revealing its essence: it is a logicization of the sciences, a superior organization of knowledge in a more rigorous, abstract and comprehensive form capable of highlighting its structures. Thus, logic contributes to the elimination of the tedious and redundant elements and strictly establishes the relations of dependence; an ideal of logicity of mankind is fulfilled.⁶

In his later writings, Wittgenstein inaugurates a further mode of philosophical research: he analyses *language-games* involving people and their connections with the forms of life within which they perform. The use of logic in scientific knowledge and human communication guarantees the acquisition of positive knowledge and the identification of what is doubtful by anybody capable of employing abstract reasoning. B. Russell

himself wrote in one of his youth works: "Only those used to working with abstractions can immediately comprehend a general principle without the help of instances."⁷

In his youth, Wittgenstein had also reached the conclusion that, in daily life, it was possible to mitigate the logical establishment of the linguistic expressions by using them in *language-games*, in the context of a particular life situation. The issue continued to preoccupy him until the last eighteen months of his life (autumn 1949 to spring 1951), when he started to write down thoughts on certainty and doubt. Wittgenstein's notes were later published under the title *Über Gewissheit*⁸ by the heirs of his manuscripts. A certain form of life, a language-game, is exclusively possible only when there are certain assertions accepted as certain, those nobody in his right mind will doubt. In this situation, certain propositions about facts that are exempt from doubt and need not be founded will not be rated as true or false in their ordinary usage. "If the true is what is grounded, then the ground is *not true, not yet false*."⁹ This does not mean that we will never be able to say about "experiential propositions" we accept as exempt from doubt that they are *true*. Only the phrase "true" acquires a special use here: 'but is that true?' we might say 'yes' to him; and if he demanded grounds we might say 'I can't give you any grounds, but if you learn more you too will think the same.'" (§ 206). Wittgenstein's conclusion is that, irrespective of the words they choose and the way they use them, people can distinguish between the assertions that need to be supported by grounds, arguments and propositions which are certain for them, because otherwise they would reject them: "You must bear in mind that the language-game is so to say something unpredictable. I mean: it is not based on grounds. It is not reasonable (or unreasonable). It is there—like our life" (§ 559).

Wittgenstein was the thinker who greatly influenced logical empiricism and the philosophy of language. While carefully reading his notes, one can discern in his argumentations certain logical errors, such as the *ad personam* argument, which are unacceptable for somebody who had

³ Robert Blanché, *L'axiomatique*, 5^e éd., Paris, 1970, p. 102.

⁴ L. Wittgenstein, *Tractatus Logico-Philosophicus*, 6.2.

⁵ B. Russell, *Introduction to Mathematical Philosophy*, London – New York, 1930, p. 194.

⁶ P. Botezatu, *op. cit.*, p. 18.

⁷ B. Russell, *Problemele filosofiei*, trad. din engleză de Mihai Ganea, Editura All, București, 1995, p. 74.

⁸ L. Wittgenstein, *Despre certitudine*, trad. din germană de Ion Giurgea, în colab. cu Mircea Flonta, Editura Humanitas, București, 2005.

⁹ *Ibidem*, § 205.

such a strong influence on the development of logic in the twentieth century. He probably inferred the hazard ahead of him, so that he used the term "logic" to designate the certainties accepted as not doubted and which make the language-games of a human community possible. There are judgments, he said, which turn into formal conditions for the non-contradiction and coherence of speech and communication. Logic is the domain of certainty since it is involved in both the language-games and forms of life specific for a human community. Doubting its applicability in daily occurrence, Wittgenstein abandons *semantics* and moves towards *pragmatics*, but logic is present here as well. That is why Petre Botezatu was right to indicate that the era of logic was in its heyday.

Cybernetization gives the second signal supporting the idea that the era of logic will continue its telluric existence. This process favors scientific investigation and the solving of the practical problems. There is a fight here between logic and chance. Logic dominates the situation, removes the haphazard factor, and diminishes the action of the forces that dramatically hinder creative order and tranquility.

According to Petre Botezatu, the beneficial effects of logic are simplification, organization, economicality, productivity¹⁰.

Such features determined a *technical-scientific revolution in thought methods*.¹¹ The organization of the scientific research according to logical models is visible here. They have received names such as "mathematical logic," "If someone asked us "mathematical linguistics," "psychometrics," "sociometrics," "informational aesthetics," "programmed learning" etc. Within them, knowledge is organized in the form of highly formalized axiomatized theories. In order to avoid random proceedings, semiotics was founded. Semiotic analysis integrally clarifies the gnosological aspects of the theoretical constructs belonging to both formal and factual sciences.

The scientific revolution over the last four decades is accompanied by a technical revolution, so that the automatization of the productive activities has determined an industrial revolution which has had extraordinary effects on the improvement of the life of a numerically expanding population. The technical-scientific revolution coincided with the *refinement of the logical organization* of the scientific research methods. Every scientific endeavor undergoes a logical-formal scientific control and permits the process of unification of the sciences.

A rich "logical map"¹² was created in order to render the close connection between the develop-

ment of contemporary logic and the perfection of the technical-scientific revolution. By studying this map, published forty years ago, one infers there is a *mental revolution* happening and it will go on. Furthermore, the changes in the natural and cultural environment determined behavioral and structural alterations of the psyche. The acceleration of these changes surpasses the limits of the human capacity to adapt. The "bombardment of the senses," the "informational over-solicitation" and the "decisional stress" situate the human being in catastrophic conditions. Disadaptation processes and cultural shock phenomena appear thus.

According to Petre Botezatu,¹³ two laws operate here complementarily:

1. *The law of the gap between the technical-scientific revolution and the mental revolution.* The adaptive effect, that is the corresponding transformation of the mentalities, is appreciably delayed from the innovative impulses of science and technology. People are urged to create new habits for themselves, and that is a process in which logic plays an important role.

2. *The law of informational distortion.* The accuracy of a sent message is directly proportional with the cultural level of the sender and inversely proportional with the state of his/her affectivity stress.

Both the scientist and the technician with a good scientific and technical background can easily adapt to the changes imposed by the two revolutions. Their adaptation may be smooth and lack the effects of negative phenomena. When, through its power to organize, logic gains a leading position, it also often triggers antagonistic reactions from two opposing spiritual constructs: *the contemplative and the assertive spirits*.

The end of the twentieth century strikes an extraordinary balance: new sciences and theories, surprising scientific and technical developments and radical changes in logic. Logic contributes to the attainment of a superior level of organizing actions because it is immanent to existence and reason. Logic, strict and coherent reason, adds to a new axiological order; at the top of the hierarchy, it places values such as nature, culture, beauty. The responsibility for nature and the respect for the truth of all arguments stated by the leaders of the world's contemporary powerful states should be compelling imperatives.

¹⁰ P. Botezatu, *op. cit.*, p. 19.

¹¹ *Idem*, *Interpretări logico-filosofice*, Editura Junimea, Iași, 1982, pp. 321-349.

¹² N. Rescher, *Topics in Philosophical Logic*, D. Reidel, Dordrecht-Holland, 1968, pp. 1-3.

¹³ P. Botezatu, *op. cit.*, p. 334.

Book reviews

**MARK DIBBEN & THOMAS KELLY (Eds.). *Applied Process Thought*
*I. Initial Explorations in Theory and Research.***

Ontos Verlag, 2008: 390 pages.

**[Reviewed by VESSELIN PETROV, Department of Ontology and Epistemology,
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The last two decades has seen the rise in popularity of the notion of applied philosophy as “the application of those principles and concepts derived from and based on philosophy to a study of our practical affairs and activities.”¹ A great deal of work has appeared which has thrown light on different aspects of this area. The reviewed book, however, is not just one among many others: it is the first one devoted to applied process thought. This fact explains its particular structure: it consists of 15 essays divided into three parts, which are not explicitly structured in the Table of Contents. Firstly, several papers consider some applications of process thought to topics in philosophy itself; secondly, there are papers considering applications of process thought to topics in the sciences, especially in physics and biology; and thirdly, some applications of process thought to topics in the social sciences, especially management studies and environmentalism, are considered. Obviously, one of the aims of the book is to include as many fields of applied process thought as possible. This is justified to a great extent for a first book on applied process thought, because the authors endeavor to display just how many applications process thought can have. On the other hand, this is perhaps the main reason for some failings or defects of a part of the essays. That is why it is worth throwing a light on the content of each essay in turn.

The book contains both a foreword and a preface. The Foreword is devoted to a great extent to the question “Does Process Philosophy Have a Mission?” The mission of process philosophy according to the author Herman Greene is “to bring under critical review and to correct errors in the cultural mind of our civilization, the prevailing assumptions and beliefs about our knowledge-yielding powers, the various sectors of the culture, and the basic structure of the world” (5). The Preface describes the emergence of process philosophy. It considers only major thinkers of process philosophy. The author Pete Gunter writes that “the link between prior philo-

sophy and process thought is provided by a group of thinkers termed evolutionary philosophers” (12). In this regard he differs to some extent from the widespread viewpoint of George Lucas Jr. who argues that there were four schools of process philosophy and that evolutionary philosophy was only one of them.²

The exposition of the book begins with an additional introductory essay, “What is Applied Process Thought?” by the editors of the collection, Mark R. Dibben and Thomas A.F. Kelly. They emphasize four basic principles of process thought: “First, sensory perception is a secondary mode of perception, a synthesis of more primitive forms of perception and, as such, derivative from more fundamental, non-sensory ‘prehension’. [...] Second, all true individuals—as distinct from aggregational societies—have at least some iota of experience and spontaneity (self-determination). Third, and as such, all actual entities have internal as well as external relations. From this, fourth, all enduring individuals are serially ordered societies of momentary ‘occasions of experience’” (31-32). These main principles ground the examination of different aspects of applied process thought in the above pointed sections.

The first section of the book is the biggest and the best one. This is unsurprising, because applications of process thought in philosophy itself have been explored much more than in the natural and social sciences. The section begins with the large essay “Unifying Process Philosophy: Secular Metaphysics and Fragmentary Influences” by Glenn McLaren. The purpose is to give the reader an opportunity to become acquainted with the scope of process thought. We

¹ Dolhenty, Jonathan. *What Do We Mean By “Applied Philosophy”?* – in: <http://www.radicalacademy.com/philapp/linked1.htm>

² Lucas, George, Jr. *The Rehabilitation of Whitehead. An Analytic and Historical Assessment of Process Philosophy*. Albany: State University of New York Press, 1989, pp. 19, 36-37, 46-47.

find here an attempt to unify the diverse range of process philosophical perspectives through the prism of Arran Gare's metaphysical system (a contemporary version of process philosophy)³ with its basic categories giving the possibility of overcoming important problems which exist in philosophical traditions other than process thought. McLaren considers a major challenge to current process philosophy, namely "how to develop a non-theistic, groundless metaphysical ground for human action" (83). Gare's categorical scheme follows to a great extent that of Whitehead. It is also divided into four main areas: the categories of the Ultimate, the categories of Existence and the categories of Explanation, but "whereas Whitehead's fourth category is Categorical Obligations, Gare's fourth category is that of Ultimate Potentiality" (84). However Gare lists only eight categories instead of Whitehead's forty five.

McLaren tries also to develop the idea that "the new science is an ecological science" and that "ecology must replace physics as the basis for science" (94). In his attempt he relies on Frederick Ferré's views about ecology. The argumentation of McLaren, however, seems to be not so conclusive; he contents himself with referring only to some views of the dialectical materialism in support of his position. Another possibility for perspective interpretation is represented by the words: "[...] living systems generate both order and chaos, making them autopoietic systems, and as such, *able to influence the future*" (97, italics mine). These words invoke the suggestion that Gare's hierarchy theory could be developed further connecting it with the recently developed theory of anticipatory systems⁴.

The second essay of this section of the book is "Unity Through Divergence" by Isabelle Stengers. The essay begins with investigation of the question how Whitehead had become a metaphysician. Her hypothesis is that it happened as a result of Whitehead's attempts to find "a new coherence among sciences" (119). Stengers analyzes "the transition from Whitehead the reformer of science to Whitehead, the speculative philosopher" (127). She explains her own hypothesis about the reason for this transition: "Whitehead had understood that metaphysics was needed for the very problem of the unity of science he was dealing with in *Science and the Modern World*" (127). Indeed, for Whitehead's metaphysics "everything that exists must be conceived not first as enduring, but as becoming, as the actualization of a potentiality, as making a difference between what could have been, but will not, and what will be. This is what Whitehead tried to do in the two metaphysical chapters of *Science and the Modern*

World" (128-129). In his later work *Process and Reality*, "existence and possibility are affirmed together right from the start. The whole conceptual science is centered around the challenge of having any actual entity conceived as 'causa sui', transforming potentiality into its own actuality" (129). That is why we can assume that Whitehead's early work on the philosophy of science is in fact an example of applied process thought.

Logically connected with Stengers' work and in a sense its continuation is the essay "From Grown Organism to Organic Growth" by Michel Weber, the purpose of which is "to weave together the major concepts that have paved the way for Whitehead's dialog with science" (149). Weber investigates the development of metaphysics in Whitehead in a deeper way than Stengers does. The task of the essay is to "unfold the togetherness of gnoseological fields and hence [to] show its global impact on the interplay between science and philosophy" (153). According to the author, "Whiteheadian organicism goes back, beyond Modern bifurcations, to a reformed gnoseological fourfold" (157) and argues that "the concept of *cosmos* is to be replaced by the concept of *chaosmos* [...] understood as an organic and growing Totality" (160). The important conclusion is that there is a turn in the direction of a holistic culture integrating the best of technoscience and spirituality.

Great attention should be paid to the essay "Mediating the Divide: Process Philosophy between the Two Cultures" by Keith Robinson. The thesis of the author is that "articulating process philosophy, continental philosophy and science together is mutually corrective and offers resources for rethinking the various 'two cultures' and 'bifurcations' of modernity" (137). He argues that "incorporating the complex history of process into this standard story [of Kantian philosophical legacy] opens up new possibilities for thinking in novel ways about the philosophy/science relation after Kant" (140). In this way he tries to develop the link between science and metaphysics. "*Critical, immanent or ontological constructivism*" (140) is defended. The author is convinced that a synthesis of both analytic and continental traditions with process philosophy

³ Developed in his book: Gare, Arran. *Nihilism Inc.: Environmental Destruction and the Metaphysics of Sustainability*, Eco-Logical Press, Como, 1996.

⁴ See, for example, Robert Rosen's books about anticipatory systems: *Anticipatory Systems*, Pergamon Press: Oxford, 1985; *Life Itself*, Columbia University Press: New York, 1991; *Essays on Life Itself*, Columbia University Press: New York, 2000.

may offer opportunities and resources to transform philosophy, stepping beyond the ‘two cultures’ toward achieving a broader and more productive synthesis” (142). The inference is that “eschewing the ‘end of philosophy’, ‘end of metaphysics’ scenarios that characterized philosophy in the 20th century, philosophy as process and difference offers a new or revised metaphysics that positively engages the insights of science in productive syntheses of logic and speculation, concept and metaphor” (146). That is why the essay can be considered as contributing to the application of process philosophy for the development of philosophy itself.

The last work of the first group is the essay “A Whiteheadian Critical Theory” by Duston Moore. It is a little strange that the essay is placed in the first section of the collection instead of in the last one devoted to applications of process thought in social sciences, but this was the decision of the editors. The author suggests some “associations between Whitehead and critical theory” (169) and makes a comparison between Whitehead and Habermas and between Whitehead and Herbert Marcuse. An “analysis of the Whiteheadian notions invoked by Marcuse affords the opportunity to contribute a robust post neo-Marxist critical theory” (178). Such contribution to the critical theory suggested by the author is in fact an example of applied process thought.

The second part of the book contains the next five essays devoted to particular applications of process thought in natural sciences, in particular in physics and life sciences.

One essay of the book is devoted to “A Whiteheadian Perspective on Nature and Freedom” by Gary Herstein. The author begins with a consideration of the problem of human freedom and choice. He thinks that “if we are to reconcile the freedom of human choice with the structures of natural science, we must find such a reconciliation within [...] nature itself” (195) and claims that “Whitehead’s philosophy of nature is precisely the tool we need here” (199). He next speculates on the nature of choice and explains that the statement that choice is intrinsically durational means that “choice relates to the rest of the universe in an irreducibly *extensive* manner, and that these extensional relations are *naturally* timelike in their character” (204). The conclusion is that “Whitehead’s ideas on these matters [Whitehead’s theory of extension] are of fundamental importance to ongoing areas of research in formal spatial relations described as “mereotopology” and “mereogeometry,” and to applied artificial intelligence programs of spatial

reasoning” (205) what is the reason for placing the essay in this section of the book.

An essay is devoted to “A Whiteheadian Metaphysics of Light” by Bogdan Ogrodnik. He understands the term “metaphysics of light” as “such a theory of reality, which it explains by formal or material features of light” (209). Light itself as a metaphysical principle is grasped as a “type of dynamic entity” (209). The author discusses whether we need a contemporary metaphysics of light on the basis of the recent developments in the physics of light and argues that “recent discoveries in the physics of light may allow new applications of process metaphysics” (209). Finally, he supports the hypothesis that “light as a quantum particle is a germ of three forms: the form of an event, the form of a process and the form of an enduring entity” (219). Next is the essay “Water as a Metaphoric Model in Process Thought” by Jan Engberts. A comparison between Whitehead’s process philosophy and China’s neoconfucianist Zhu Xi is made in it. The author enumerates briefly water’s unique chemical properties in order to appreciate the water metaphors. The essay seems not quite convincing, but its significance lies in the argument that modern biochemical science is in accordance with process thought. There follows the essay “Explaining the Processual Behaviour of a Cell” by Jonathan Delafield-Butt. It discusses “the behaviour and underlying molecular physiology of a single-celled organism, with an eye to a process interpretation of the natural world” (238). The author concludes that “in positing experience as a fundamental feature of reality, process philosophy provides a theoretical framework which is wholly consistent with the biological observation of this single celled animal” (257). The last essay in this section of the book is “Enzymes as Ecosystems: A Panexperientialist Account of Biocatalytic Chemical Transformations” by Ross Stein. The essay is a part of a greater project of the author to develop a process metaphysical framework for chemistry and in this sense is a continuation of the previous essay with further investigation of the chemical processes of living systems. The author points out that process thought gives the answer of the question how is it that molecular properties emerge from atomic arrangement, since it replaces the notions of static material and substance with a philosophy of dynamism and relatedness.

The last section of the book is devoted to applications of process thought to the social sciences. It begins with the essay “The Embodied Mind and Inter-Subjectivity: Reflections on Autism” by John Harpur. The problems of social sci-

ence and processual understanding of society are connected with and to some extent are based on the debate about mind-body distinction, that is why it is justified for this section to begin namely with this essay. The author focuses his attention “on giving an account of the importance of the social domain of the mind and its connection with the development of the self” (290) and especially on the “relation between social interactions and the mind-self development” (291). By examining some theories of autism the author has argued that “the embodiment of mind is necessary to account for the role of intersubjectivity in framing human experience and inter alia the conditions for human inquiry and survival” (310).

One of the most convincing in this section is the essay “Understanding Organizations as Whiteheadian Societies” by Mark Dibben. The topic of the essay is “the ways in which process thought has been applied to management and the extent to which such applications may or may not approximate to the process-relational view of the universe” (330). It begins with considering Whitehead’s own thoughts on management and organization. In fact, the vast majority of works that purport to use process thought follow strong process ontology. The author observes that “a broader review of the management and organization studies literatures beyond the United States uncovers growing recognition of the value of process thinking, especially among European scholars” (337) and argues that “a business organization may be thought of as an energy-field, perhaps analogous to a particular kind of extensive continuum” (340). Dibben claims that we would like to “arrive at both a more coherent and at the same time technically complete rendering of contemporary social and institutional phenomena, of which organizations are but one example” (343).

The fourteenth essay of the book is “Facts and Events: Whiteheadian Philosophy of History” by William Desmond. Desmond argues that “Whitehead’s doctrine of connectivity in the natural world can be extended also to historiography and to an understanding of the material of history” (350) and that “the ‘facts’ are the original events, actions, words, thoughts of the past that the historian seeks to recapture in the present” (351). In this sense, Whitehead’s “discussion of the connectivity of events might be simply transferred from the philosophy of nature to the philosophy of history” (351). To this end, he makes comparisons between aspects of Whitehead’s thought and various schools of historiography, notably the Annales School.

There is also an essay in this section “Social Science Contributions to the Love-And-Science Symbiosis” by Thomas Oord. It investigates a

new field of study that emerged by the combination of methods and insights of science, religion and philosophy. The term used for this new field is “love-and-science symbiosis.” The author begins with a discussion of two typical psychological approaches to studying love pointing mainly to their disadvantages. He points that these typical approaches “do not address well a form love often regarded as quintessential to understanding love: altruism” (317). His conclusion is that “the social sciences [...] provide data and theories that support Alfred North Whitehead’s claim that the fundamental urge of creatures is to ‘live, live well, and to live better’ [*The Function of the Reason*, 1929, p. 18]” (326).

The last essay in the group is “Process Philosophy and Ecological Ethics” by Arran Gare. It begins with the very important and actual problem of the explanation of the present failure of environmentalists and of the weakness of the environmental movement. This situation “is a manifestation of a more general problem [...] that technological progress had led to greater brutality and greater threats to humanity [...] due to the fragmentation of work undermining people’s capacity to think about their relationship to the rest of society or to put themselves and their actions in broader perspective” (366). Now “environmentalists are doing their job without really facing up to whether their actions will generate the required outcomes. [...] they are in fact furthering the fragmentation of people’s lives” (367). The author tries to outline the way for overcoming of the situation. He writes: “this would require a transcendence of fragmenting perspectives, a re-linking of ethics and political philosophy, of philosophy and rest of culture” (367). He thinks that “process philosophy is the most likely basis for achieving it” (368), because “process philosophy provides the basis for overcoming the opposition between the humanities and the sciences” (368). Process philosophy “upholds a notion of rationality [...] that can encompass both the development of scientific ideas and the development of ethics and political ideas” (370). Gare claims that “an ecological ethics needs to consider not only what we should do [...] but how to change this social order” and again points that “process philosophy could provide the form of ecological ethics required to effect this transformation” (379). The essay is in this way thematically linked with the first essay of the book, closing so to say the circle of themes investigated.

* * *

In conclusion it could be definitely affirmed that that this pioneering book achieves its first aim, as it throws light on the great possibilities for

applying process thought in diverse directions. However for the next books in this area this will be not enough. They should be devoted to the applications of process thought which will investigate in more detail the applications especially in natural and social sciences—not only in physics, biology, management studies and environmentalism, but also in all other fields. One can point to some concrete defects of the book in the hope that they will be avoided in the next publications on applied process thought. Firstly, concerning the first section, it would be much more fruitful to devote more essays to the investigation of the problem of the (potential) connection of process philosophy with other philosophical traditions. Only Keith Robinson's essay in the present book treats partially that great problem. But it is not enough. Many other aspects and connections should be considered to outline the perspectives and applications of process thought; otherwise

there is a danger of process thinkers isolating themselves from influential philosophical traditions. Secondly, some of the essays in the section of essays devoted to the application of process thought in the natural sciences are not convincing enough. In particular, regarding the essays by Ogrodnik and Engberts, neither the metaphysics of light nor the study of water's unique chemical properties are enough for a serious and detailed investigation of the useful application of process in contemporary physics and organic chemistry, respectively. Obviously, to be a good scientist in some particular science (organic chemistry, for example) does not guarantee a successful application of process thought in that science. Of course, these defects do not at all diminish the significance of the book as a pioneering one in the field of applied process thought. All we expect is that the next books in that area should represent new and more concrete ideas for fruitful application of process thought and for its further development.

**The Reason Why: A Theory of Philosophical Explanation,
by EDO PIVCEVIC Kruzak, Zagreb, 2007
[Reviewed by PHILIP DE BARY, Ph.D. Commissioning Editor
The Policy Press 4th Floor, Beacon House
Queen's Road, Bristol BS8 1QU]**

Edo Pivcevic was a distinguished member of the Department of Philosophy at the University of Bristol, who retired from teaching in the mid-1990s, having published a string of influential books. His previous books have been published by Oxford University Press, Cambridge University Press, Hutchinson, Duckworth and Palgrave Macmillan, among others. The book is an ambitious and sustained piece of first-order philosophy—a book of a kind that is seldom written and published these days, no doubt because so few writers are equal to the task. The work it most reminds me of is P.F. Strawson's classic text, *Individuals*, first published in 1959 and still widely read today. Like Strawson's book, Pivcevic's deals with metaphysical issues of immense generality and finds new and original things to say about them. I think that it, too, will still be read fifty years from now.

I will not rehearse in detail the arguments of the book (the author himself has prepared an analytical Table of Contents which gives convenient chapter-by-chapter summaries). Instead I will briefly home in on what I take to be its essence and then say why I think it is important.

In *The Reason Why: A Theory of Philosophical Explanation* Pivcevic argues that the scope and limits of rational explanation are set by a number of fundamental paired categories and principles which are all mutually complementary and interdependent. This lattice of basic categorical pairs (identity/difference, continuity/discreteness, type/token, and whole/part) not only helps make sense of what we experience but also describes how the world is actually made up. In developing this thesis Pivcevic is at the same time outlining some of the key features that mark out specifically *philosophical* explanation as distinct from other types of explanation, such as those commonly found in the natural sciences and in naturalistic theology.

This new book seems to me to be a development of the 'ontological structuralism' first put forward in his *The Concept of Reality* (1986) and elsewhere. I take Pivcevic's basic position to be a neo-

Kantian one (though that is not the way he characterises it):

...the concept of an *extra-conceptual reality* cannot make clear sense except against the background of ... acts of 'appropriation, which characterise the life of [the] self. This is why metaphysical realism, which makes an unconditional supposition of a reality 'out there' and brushes aside any such 'acts of appropriation' as trivial or irrelevant, cannot be consistently defended. *Structural* realism, on the other hand, presents not just a more reasonable but a necessary alternative. ... the 'external' world cannot exist independently of the conditions under which it is *thought of* as 'external' (Ch. 12, p. 16).

When Pivcevic continues "... this of course does not make such a world any less 'real'," we hear an unmistakeable echo of Berkeley's insistence that his immaterialism, properly understood, was no affront to common sense.

'Idealist' metaphysics (and, by extension, idealist epistemology) is not fashionable within analytic philosophy these days, flying as it does in the face of the current naturalistic or 'scientific realist' orthodoxy. Pivcevic's is not a lone voice—there are other prominent proponents of a broadly idealistic philosophy, such as Frank Jackson—but it is one of few and one of the most eloquent, putting highly sophisticated arguments across in an accessible way.

The book is complex and challenging, but it is also written with great freshness and clarity. To take just one example, the distinctions and links between *what*-questions, *how*-questions and *why*-questions in the early sections of Chapter Two are explained with rare lucidity. This central topic is often addressed in books written for philosophy undergraduates, but usually the explanations confuse more than they enlighten—not so here. For reasons like this, I think the book will be valuable for upper-level undergraduate students as well as for academics.

The book is in the best tradition of Western metaphysics, and shows that there is still a place for 'big books' in philosophy in these days of the conference paper and the journal article. I hope it finds an enthusiastic publisher who will produce and promote it well.

It is really an advantage when someone writes a book called *Understanding Islam*. To understand something depends more on the sincerity of your own intentions and perceptions of the object to be studied, rather than on whether you believe in it or belong to it.

In this book Professor Yaran tries to present Islam from a mainstream and moderate perspective rather than from a specific point of view. He uses the term “moderate” not only in its contemporary (and controversial) restriction to political and social issues but also in its perennial and more comprehensive meaning. For moderation is one of the most significant and respected values and virtues of Islamic religion, both in religious and ethical attitudes and also in worldly life.

After graduating from the Faculty of Theology in Turkey, he completed his doctorate in Philosophy of Religion at the Department of Theology, Religious Studies and Islamic Studies in Lampeter, UK. His recent publications include *Muslim Religious Experience* (Lampeter, 2004) and *Islamic Thought on the Existence of God* (Washington DC, 2003).

The last revealed religion, Islam, offers to its adherents a creed of love and peace in addition to one of unity. If we consider that one of the meanings of the word “Islam” is “peace,” we can understand more easily that Islam is also the religion of peace. Professor Yaran has looked at Islam from its historical, theological, practical, ethical, spiritual and contemporary dimensions. Islamic faith, ethics and spirituality guide about 1.3 billion Muslims, 25 million of whom live in the West, helping them to live a life of virtue and happiness both in this world and in the hereafter. Following the historical point of view we can see that the model of Islamic Umma is based on the following pillars: justice, democracy, freedom, human rights, equality and fraternity. But there are also people for whom Islam is a religion of war and violence. That’s why this book is a good opportunity for the West to restudy Islam. What we need today is a proper knowledge of Islam by the West. As we know little knowledge is always

more dangerous than no knowledge. What we need today is close interaction and cooperation between Islam and the West to face mankind’s common challenges. One of these challenges is terrorism. The Islamic world rejects the idea of a “Clash of Civilizations” and still believes that most of the problems can be solved through dialogue, given that one of the significant functions of Islam as a religion is to prevent enmity and wars among human beings and to promote peace. That’s why the great Muslim mystics put forward various proposals and gave very valuable advice to live together in peace and harmony with people who are from a different religion or sect. These ideas are still valid and even more timely today. Professor Yaran discusses the idea of “human as an ethical being” who seeks to bring about peace in society.

What makes the process of dialogue effective is critical challenge. The objective of critical challenge is participation through the outlook of others accompanied with assessment, analysis and criticism. Effective dialogue needs a common language as well. The religious leaders today are the brainchild of invaluable theological and apologetic systems and such a situation has created special languages affiliated to cultural and epistemological systems. Effective dialogue also requires specific logical rules. These rules should be intermingled with the epistemological bases. Aristotle too had discussed the logical rules of the conversation and dialogue. Today, through an interdisciplinary approach, such rules should be defined for dialogue among religions and civilizations. In Islamic culture dialogue is much richer than conversation. Dialogue is basically an investigative process which leads to the production of knowledge. By dialogue the author means a methodological, problem-sensitive, unbiased conversation which is also free from any monopoly and whose objective is proximity to the truth. Inter-religious dialogue in the era of globalization encounters a postmodern epistemological crisis. The source of this crisis is the theory of contextuality of human experiences and inference

of pluralism and relativism from it. On the basis of potential and original commonalities of human beings it is possible to achieve a unity in diversity and set as a base for dialogue.

Hans Kung writes: 'There will be no peace among the peoples of this world without peace among the world religions.' I would add a sentence from the book: the optimistic future of Muslims is founded on how they will fulfill their role as the "middle nation" and how they will understand and succeed in the best-known prayer

taught in the Qur'an, "Lord! Give us what is good in this world and in the Hereafter" (2:201),

As a scholar-teacher-thinker, Professor Yaran shares with us the spirit of his intellectual responsibility: to develop a "sophiological" epistemology and world-view which has a global and perennial foundation in all the great cultures, civilizations and religions of the world. And the reader will have no difficulty in appreciating the author's expressed wish to promote a proper understanding of Islam, and his own capability to do it.

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