

RISK AND RELIGION: TOWARD A THEOLOGY OF RISK TAKING

by Niels Henrik Gregersen

Abstract. Historically the concept of risk is rooted in Renaissance lifestyles, in which autonomous agents such as sailors, warriors, and tradesmen ventured upon dangerous enterprises. Thus, the concept of risk inseparably combines objective reality (nature) and social construction (culture): Risk = Danger + Venture. Mathematical probability theory was constructed in this social climate in order to provide a quantitative risk assessment in the face of indeterminate futures. Thus we have the famous formula: Risk = Probability (of events) x the Size (of future harms). Because the concept of harm is always observer relative, however, risk assessment cannot be purely quantitative. This leads to the question, What are the general conditions under which risks can be accepted? There is, after all, a difference between incurring a risk and bearing the costs of risks selected for by other agencies. Against this background, contours of a theology of risk emerge. If God creates a self-organizing world of relatively autonomous agents, and if self-organization is favored by cooperative networks of autopoietic processes, then the theological hypothesis of a risk-taking God is at least initially plausible. Moreover, according to the Christian idea of incarnation, God is not only taking a risk but is also bearing the risks implied by the openness of creation. I thus argue for a twofold divine kenosis—in creation as well as in redemption. I discuss some objections to this view, including the serious counterargument that risk taking on behalf of others remains, even for God, a morally dubious task. What are the conditions under which the notion of a risk-taking God can be affirmed without leaving us with the picture of God as an arbitrary, cosmic tyrant? And what are the practical implications for the ways in which human agents of faith, hope, and love can learn to cope with the risks of everyday life and of political decisions?

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The concept of risk and risk taking exemplifies how scientific and religious thought models interact in coping with uncertainty in everyday life. At the practical level of risk taking, we are not concerned with very specific theories about causality and freedom, determinism or indeterminism, or with very precise theological issues such as the concepts of God, atonement, and theodicy. What matters is what we may term our *practical cosmology*, that is, the set of beliefs and evaluations that shape how we orient ourselves meaningfully in the texture of our physical and social environment (cf. Schweiker 2000, 126). In practical life, we cannot always draw rigid boundary lines between what is natural, what is social, and what is religious. Rather, we find ourselves immersed in socially mediated interactions with nature in which fragments from science and religion collide and coalesce and play a formative role in culture, often at a more subconscious than conscious level.

Speaking about risks and how to live with risks, we are involved in a triangle of (1) natural events, such as earthquakes, (2) social events, such as our habits of conduct and expectations for the future, and (3) the various meanings this socionatural life holds for us. This “for us” is pivotal to the concept of risk. A risk is always a danger *of* something (sometimes natural, sometimes social) *for* somebody in a given social nexus. In this sense, the meaning of risk conforms with the semiotic triangle as laid out by the pragmatist philosopher Charles Sanders Peirce: A meaning means something (the content of meaning) for somebody (the interpreters) in a given situation (the context of meaning). Thus, risks tend to crisscross the borderlines of the natural and the cultural.

In this essay I aim to accomplish three tasks. First, I want to analyze in more detail the fuzzy nature of risk from a phenomenological perspective. Next, against this background, I show how the concept of risk is intrinsically coupled with the concept of *complexity*. The emergence of a “world risk society” is a result of (1) the exponentially growing interdependencies between a very large number of specialized systems coupled with (2) the low possibilities for predicting exactly which systems are going to be coupled with which systems, and in what manner. In the third section, I ask how our late modern or postmodern sensitivity toward risk and risk taking can illuminate the ways in which we, in an age of uncertainty, might conceptualize faith as an attitude that combines trust in the future with a highly sensitive risk awareness. The model of complementarity might not be the most promising candidate for coping with the theoretical issues in the science-religion dialogue, but I argue that the capacity to move back and

forth between trust and control is essential from the practical perspective of coping with risk in hypercomplex societies. In this manner, the very issue of risk, seemingly devoid of any religious perspective, in fact opens up a surprising field of interactions between theology, the natural sciences, and the social sciences.

A PHENOMENOLOGY OF RISK AND DANGER

I begin with some elementary observations. Most would agree that life is a risky affair. In order to live without succumbing to all sorts of life-threatening anxieties, we need to have access to resources of trust. Tonight, when I close my eyes and fall asleep, robbers could break into my house; a storm could tear it apart; an electrical problem might set the building aflame. As soon as I wake up in the morning, I start taking new risks. Half asleep, half awake, I walk into the bathroom happily forgetful of the fact that 16,000 people are killed each year by falling, quite a few of them on the slippery tiles of domestic bathrooms (Wilson [1979] 1995, 55). Risk requires trust, and trust itself is, as emphasized by the German social philosopher Niklas Luhmann, a risk-willing predisposition (Luhmann [1968] 1973). Thus, we may have a virtuous—not a vicious—circle between trust and risk willingness.

First-Order and Second-Order Risks. The knowledge of life's fragility is part and parcel of human wisdom from days of old. However, the logic of risk taking is a result of Renaissance lifestyles and Early Modern mentalities. Etymologically, the term *risk* is derived from the Italian *risco* or *rischio*, which means both the danger that one is succumbing to and the venture that one is embarking on. Used first about the hazards of sailors and tradesmen in Italy and Spain in the fifteenth century and onward, the term is probably derived from the Greek term *riza*, which means both root and cliff (Rammstedt 1992, 1045–46).¹ If this is so, *risicare* means something like sailing around the dangerous cliffs, and *risicum* is what results from such a venture. Even if this etymology is uncertain, the concept of risk first appeared in the Renaissance mercantile world, in which sailors had to take risks, owners wanted to insure their ships and merchandise, and bankers wished to minimize losses. From here the word slowly moved into everyday language, first in the sixteenth century into the Romance languages and only later into the German and English languages, where it soon settled down in the world of gambling and strategic warfare.

Since the 1970s the idea of risk has increasingly dominated public perception of the world. Triggered by the fear of nuclear power plants, environmental concerns have brought the notion into the center of cultural analysis. Today we also know that through our eagerness to take precautions and prevent risks we may incur new risks. For example, we use antibiotics in order to get rid of infections that would otherwise go out of

control. Such use, however, is making bacteria resistant to antibiotics, and future bacteria may get out of our control. We are beginning to see ourselves as part of an evolutionary arms race.

Now, if the very preventing of risks creates new risks, we should realize that *safety*, the traditional counterpart to risk, does not exist. The road back to Paradise seems to be blocked forever. There seems to be only one way to proceed: forward. From this perspective, Luhmann proposes that we should look for another main difference: in hypermodern societies, the difference between risk and danger replaces the premodern difference between danger and safety. A danger, then, is a potential damage that we attribute to the environment, whereas a risk is one that we incur as a consequence of our decisions. By preventing dangers, or first-order risks, we incur, by virtue of our actions or omissions, an unforeseeable array of second-order risks.²

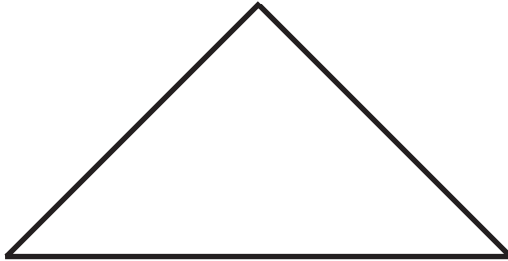
Crossing the Boundaries between the Objective and the Subjective. Let us inquire a bit more into the fuzzy meaning of risk. The concept of risk seems to closely knit together what we often think of as two separate domains: objective reality and inner subjectivity. It is true that cliffs are “out there” in objective reality, but they constitute a risk only to those approaching them as sailors and tradesmen. Earthquakes objectively exist, but they constitute danger only to those life-forms whose habitats are potentially destroyable. It seems that the meaning of risk is *Danger + Venture*. Risk is a feature of reality that we passively endure, and yet it is a feature that emerges only as a consequence of our own active involvement with that reality. The one does not exist without the other. Also, in ordinary language we might emphasize either the objective or the subjective side of risk. There is a shift of emphasis between “running a risk,” whereby we are perceived mostly as passive, and “taking a risk,” whereby our own engagement stands in the foreground (Rescher 1983, 6).

Even if we are able to mark out such shifting emphases, the phenomenon of risk belongs to what might be termed the *objective-relational* features of reality (cf. Gregersen 2000). Risks are what they are because they are part of relational networks. A risk does not exist in the same sense as stones or mailboxes do. In traditional philosophical language, a risk is not a *substance*, that is, an independently existing entity. There is always a risk *of* something (an event) *for* somebody (the experiencing subject). A lion, for instance, is an animal and not a risk, but *to* human beings there exists, under certain circumstances, the risk of being attacked by a lion. Similarly, a car in the garage does not constitute a risk, but it becomes a risk *for* the child who plays on the road *when* a car is being driven fast, or for the environment (if there are too many of them). Being attacked by a lion or being run over by a car constitute real events that make all the difference to those who are hurt. However, it does not make much sense to say that the

lion constitutes a risk for the grass on the savannah, just as the car does not constitute a risk for the road. In all cases, the concept of risk is bound to an experiencing subject who is vulnerable to harmful events in this or that respect, given these or those circumstances. Risks are neither purely objective events nor purely subjective events; they belong to the objective-relational features of existence. Risks appear in the dangerous zone of contact between physical events and social routines. Thus, we have the following triangle of risks:

The Triangle of Risks

Relevance/Meaning “for Us”



Danger:
Natural Substrate of Risks

Risk Observation:
Social Definitions of Risks

Crossing the Boundary between Present and Future. Moreover, in the temporal dimension, the notion of risk has an indeterminate status. Risks belong to the fuzzy world of potentialities, which are there and not there. A risk is something in the future, and yet we think of risks as being latently present. Coping with risk is therefore a difficult thing, for the problem with the future is that it cannot begin, and when future events have begun, they are no longer in the future but constitute a present event.

We may try to anticipate future risks in various ways. We can use *prognostication*, in which we expand the present into the future by calculating statistically how past and present developments will continue into the future, all other things being equal. However, because all other things are never equal, we usually have to estimate the future by weighting the tendencies that we know about against what we believe will probably happen. Such estimates combine a purely mathematical statistics (building on a calculus of probability) with a seasoned judgment about what we can expect about the future in the wider social context.

Contrary to the concept of risk, which is usually taken to refer to adverse future events, *expectations* normally refer to good news; but for our discussion here, it is important to note that both risk and expectation can

be used in more comprehensive senses. We can make a risky investment with the expectation that things will get better, and based on previous experiences we may also expect some degree of rudeness from particular others. Both in prognostication and in expectation we anticipate futures by combining calculation with an estimate of the incalculable. Realizing once again that safety does not exist, we could say that a calculable future does not exist, either, and yet the whole point of risk assessment is to make the incalculable calculable. As pointed out by the Foucault-inspired “governmentalist school” within risk theory, it is not possible to strictly contrast calculable and incalculable risks (Dean 1999, 138). Approaching the future in terms of rational risk assessment is by definition making a calculation. The danger of losing my right hand is incalculable and the loss not measurable, but insurance companies nonetheless calculate the general risk of being handicapped and do recompensate any kind of damage (Ewald 1991). So far, technological risk assessment certainly epitomizes a worldview of calculative rationality. Risks do not exist “in reality,” but incalculable dangers are fabricated as calculable risks, even though the calculations will never succeed in corresponding to reality one-on-one.

The question for theology is, then, how these concepts of risk and expectation relate to the theological concept of *hope*. Hope is presumably a close ally of expectation. However, seen from a phenomenological point of view, there are important differences in their attitudes toward the future (Gregersen 1998b). First, hope relates to new possibilities that might emerge in the future beyond any normal calculation. Hope builds on trust, whereas expectation relies on rationally controlled conjectures. Put another way, expectation prolongs the past and present into the future, whereas hope presupposes a surplus of the coming futurity vis-à-vis the present. Correspondingly, the one who expects something, expects something new of the same sort, whereas the one who hopes, hopes for something different in kind. Second, a hope cannot be neutral; we can hope only for something good, whereas climatologists *expect* a global warming, even if they usually do not desire this development. Third, hope, as pointed out by Catholic theologian Karl Rahner, means “letting one’s self go.” In hope we give up the fixations of mind that are linked either to specific presumptions or to a general confusion or despair. By opening ourselves up to the future, hope provides the space for God as the incalculable and uncontrollable (Rahner 1975, 235).

Despite these differences, the notions of risk, expectation, and hope have in common a tendency to blend tenses and to seek the signs of the future in the present.

Transcending the Stereotypes of Facts and Values: Ethical Limits to Risk. The notion of risk not only crosses the spatial boundaries of inner and outer and the temporal boundaries of present and future; it also transcends our stereotypes of facts and values. Because risk is by definition an ob-

server-relative concept, a risk is from the outset related to evaluations of what would harm or improve our lives. Medical doctors calculate the risk not of having blue-eyed children but rather of a great variety of genetically based diseases. The statistical method is the same, but what is considered a risk is always defined by values.

If we take seriously the fact that safety does not exist, risk avoidance is not the only thing to be valued. There are important goods that can be obtained only by accepting certain risks, but by taking a risk we also run the risk of vulnerability to being harmed. Proposing to a girl, for instance, entails the risk of being turned down, but avoiding this risk also entails a risk—that the moment of opportunity disappears forever. Even though risks are usually taken to refer to adverse future events, a risk-taking attitude can and should thus also be valued positively.

This leads to the question, What are the risks that are worth taking, and what are the general conditions under which such risks can be accepted? This question, of course, cannot be answered in general; risks are as numerous as the future scenarios multiplied by the number of possible evaluations of these scenarios—indeed an astronomic number!

Questions of ethics and values can hardly be adequately represented in a risk calculus. First we need to identify whose risk we are talking about. From an ethical perspective there is a paramount distinction to be made between incurring a risk oneself and taking a risk on behalf of others. There is a difference between being a parachute jumper and forcing others to jump. It is one thing to take a risk and quite another thing to carry a risk. Second, we should recognize that a mathematical risk calculus does not face the fact that there is always a catastrophic threshold to risk comparisons (see Rescher 1983). Especially since the development of nuclear power plants, experts have provided us with various risk estimates of disasters such as the breakdown of the Chernobyl nuclear power plant. Even if the probabilities of these events are estimated by some experts as being very low, their occurrences have such fatal consequences that one could well argue that it is not an acceptable risk to take (not to mention the risk of trusting such experts). Increasingly we have come to share risks with one another, because we are part of systems in which we have to carry the risks that are taken by others. Since the unintended effects of our political decisions outweigh by far the intended effects, we can no longer insure ourselves against the future.

Precisely at this juncture it seems hazardous to follow those constructionist thinkers who argue that risks are merely social constructions that are constantly negotiated. If one argues, with the Foucault-inspired governmentalsists, that it is by definition “not possible to speak of incalculable risks, or of risks that escape our modes of calculation” (Dean 1999, 131), then one tends to deny that there exist plain biological threats to our survival and that these danger are in fact incalculable. There is, as acutely

seen by Luhmann, “a limit of risk semantics” ([1992] 1998, 73), not least concerning environmental questions. The gap between objective dangers and objective-relational risks cannot be overcome by defining a risk as something purely internal to social constructions. Even if we can never capture the reality of “the world in itself,” the world is still real enough to strike back and show us where we were wrong.

RISK, COMPLEXITY, AND (IN)COMPUTABILITY

I now address the possibilities of scientific risk assessment more directly. Evidently, the need for risk control grows with increasing risk awareness. Historically, the period of Early Modernity (ca. 1600–1750) was crucial for the breakthrough of the idea of a mathematical risk calculus. Preceding this development was the reevaluation of the notion of luck and fortune in the Renaissance. In antiquity and through the Middle Ages, the words *fate* (*fatum*) and *fortune* (*fortuna*) could still be used indiscriminately. By Christians, fate was perceived in line with Augustine (1972, 188–89; *The City of God* 5.8) as simply the necessity of the rational order that God has written into nature itself. Accordingly, *fortuna* was either denied or seen as a shorthand for the divinely ordered fate. Chance had no place in God’s world but could only be accorded an epistemological status, since future contingencies are not foreseeable by finite agents (Poppi 1988, 652). In practical life, however, *fortuna* can be interpreted as the “motivated luck” that comes to those who dare to engage in risky ventures. Fortune was in this sense interiorized, or humanized, without leaving aside the identification between fate and divine will. In short, the value of risk taking was discovered.

From Risk Awareness to Risk Control. But of course people also wanted to minimize the risks and balance potential benefits with potential damages. What helped to spread the idea of risk and the positive value of words like *chance*, *hazard*, and *fortune* was, according to historians, the new sport of gambling. From the eighteenth century onward, governments established national lotteries in order to raise money for warfare (Gigerenzer et al. 1989, 19f.). Mathematical probability theory emerged in this climate, sponsored by private insurance companies and governments, as one can see in such classic treatments as Christian Huygens’s *De ratiociniis in ludo aleae* from 1657 or De Moivre’s *Doctrine of Chances*, 1718 (see Bernstein [1996] 1998). Classical eighteenth-century risk theory was then formulated by the famous formula: Risk equals Probability (of events) multiplied by the Size (of the benefits and damages), or

$$\text{Risk} = P \times S$$

It may appear as a paradox that probability theory emerged during the age of Early Modernity when a strong belief in metaphysical determinism

reigned. One answer, offered by a collective of science historians, is that “probability served as a kind of protective belt for the hard core of the deterministic research program” (Gigerenzer et al. 1989, 280). Thinkers such as Gottfried Wilhelm Leibniz and Pierre Simon de Laplace were rigid determinists, who did not believe in real chance or in uncontrollable risks. Probabilistic knowledge, however, could be seen as the only achievable knowledge for finite beings. In this manner, probability theory embodied a strong practical worldview rather than a theoretical cosmology. Risk awareness involved a preference for social control. As argued by Foucault-inspired social historians, “a vast hygienist utopia plays on the alternate registers of fear and security, inducing a delirium of rationality, an absolute reign of calculative reason” (Castel 1991, quoted in Lupton 1999, 7).

The discussion between determinists and indeterminists may go on forever. But the practical cosmology of playing safe versus taking risks opens the door for a variety of human responses, some of which draw upon religious resources, others upon scientific risk assessment, and still others upon a postmodern awareness of the impossibility of reverting to a safe paradise. Elsewhere (Gregersen 2002a) I have criticized this myth of replacement in current sociological risk theory, according to which scientific risk calculation simply supersedes the faith in God of earlier ages. Anthony Giddens, for instance, sees the modern concept of risk as replacing the ancient notion of fate or fortune (Giddens 1990, 30). Similarly, Ulrich Beck argues that preindustrial hazards were “‘strokes of fate’ raining down on humankind from the ‘outside’ and attributable to an ‘other’—gods, demons, or Nature” (1999, 50). By contrast, the risks of the industrial age were perceived within “a logic of control” (2000, 215). Finally, today’s post-industrial “risk society” is defined by Beck as one in which we cannot control the unintended consequences of our attempts to control the risks that we take.

I will not question the thesis that in postmodernity a radicalized risk awareness has been added to the traditional sensitivity to external dangers. However, I want to criticize the supersessionist idea of replacement. It seems to me that in our daily life practices as well as in our political decisions we combine strategies that have been emphasized in premodernity, modernity, and postmodernity, respectively. We certainly have not left behind us the premodern concept of fate and fortune but still find that illnesses and accidents fall upon us and our friends. Nor have we given up on the modern wish to control risk, as is evident from our expectations of the medical system. However, we are also postmodern enough to be well aware of the impossibility of exact prognoses of future contingencies. The world of risk is a world full of paradoxes. We live, as it were, simultaneously in a premodern world of fate and fortunes, in a rationalized modern world in which risks are controlled, and in a postmodern awareness of the ubiquity of risks triggered by our wish to prevent risks.

Coping with Risk, Living with Complexity. This entangled situation opens the door to a reflection on the relation between risk and complexity. Citizens in a hypercomplex society are certainly spared many dangers from some diseases and natural catastrophes. But even though ordinary risks can be controlled (at least for a time) or recompensated by insurance, the range of incalculable risks is broadening exponentially. There are several reasons for this. (1) The specialized institutions of highly differentiated societies are particularly vulnerable to targeted attacks, even though they also have the resources to absorb the consequent instabilities. (The September 11, 2001, attacks on the World Trade Center in New York and the Pentagon exemplify this vulnerability.) (2) A hypercomplex society is a highly differentiated society without a controlling center, with many subsystems and actors operating in an open field of networks. As expressed by Manuel Castells, we live in a network society in which the “power of flows takes precedence over the flows of power” (Castells 2000, 76). Although economy, politics, and communication technologies are certainly carriers of homogenization and globalization, networks are decentralizing forces open to innovation and heterogeneity and therefore highly risky, too. (3) Risk is no longer only a question of probability of outcomes (say, of lightning or of a stroke); risks also arise out of the internal potentials of complex adaptive systems (CAS), systems that individually are able to learn from their environments and to readjust their actions in a process of learning (Gregersen 2002b). What we are witnessing in all parts of the world (but in particular in the Western world) is a general change from the first-order risks of external dangers to the second-order risks of internal potentials for actions. Risks are increasingly becoming a matter of our decisions or our failure to make decisions. However, neither our own decisions nor the decisions of others are easy to calculate, because they are made in the flow of interacting networks. The outcomes are not decidable in advance but emerge as a result of self-producing or autopoietic operations.

In this light we could formulate an expansion of the classical risk calculus that is sensitive to the double contingencies of external and internal uncertainties: For any system or actor, Risk is equal to the range of Probability (P) of external outcomes (E) plus the repertoire of possible Internal responses (I) multiplied by the Size (of the benefits and dangers), or

$$\text{Risk} = P (E + I) \times S$$

On this account the probabilities of external events (E) and internal responses (I) are still added to one another as if the latter were unaffected by the former. But no natural system possesses such a high degree of autonomy; the external environment always constrains the array of responses. Moreover, if we assume that both external and internal events are coupled self-organizing systems, the array of possibilities greatly increases. Better ways to fight enemies produce enemies better able to hide, which in turn

produces better systems of detection, which produce better methods of escaping detection, and so on. The risk calculus would now have the following form: For any system or actor, Risk is equal to the range of Probability of external outcomes *multiplied* by the repertoire of possible internal responses multiplied by the Size (of the benefits and dangers), or

$$\text{Risk} = P (E \times I) \times S$$

The range of possible events here is huge. There is no golden mean to balance *R* and *P*. More precisely, the statistical averaging law of the large numbers becomes irrelevant because the mean value would hardly ever be realized. In case of bifurcations, outcomes are far from the mean value. And in case of singular events (think again of the September 11 attacks), the events that result from coupled self-organizing systems are no longer calculable, not even against the background of the previous history. Any estimate of future probabilities will depend on a reference class to which one's estimate of probability implicitly refers. In this case, however, probably no such reference class exists (see Gigerenzer 2002, 185–97, for a similar case of predicting violence).

So far we might be tempted to say that just about anything can happen. Nonetheless, a risk calculus is usually able to measure risk against a background of relatively stable parameters. The risk of getting a genetic disease, for instance, is measured against the background of the general laws of gene recombination, plus the known propensities for developing the particular illness. There are always limits to risk, and equiprobability is a very improbable scenario. To state that everything constitutes a risk is not very helpful.

One of the promises of computational complexity (CC) theory is exactly the fact that one can make useful predictive models of networks, networks that are coupled both via the relation between their elements (for example, genes) and via their functions (for example, epigenetic functions). However, because computers are mechanical machines and the algorithms of computational models are preprogrammed (this also applies to evolutionary algorithms), CC is bound to work within a deterministic framework in which “agents” act according to specifiable interaction rules. Emergence may be an unexpected phenomenon, yet emergence remains a result of purely deterministic processes (Holland [1998] 2000, 28–52). The rules that are changed in the process of development are thus always changed in accordance with already preprogrammed reaction patterns. Consequently, a computer program can easily calculate (1) the phase space of all possible couplings, (2) the couplings that will be actualized after so-and-so many computational steps, and (3) any perceivable event that would constitute a risk from our phenomenological perspective. However, does a similar determinism rule also in the real world? Can real-world complexity (RWC) be fully analyzed in terms of computational complexity (CC)?

This does not seem to be a plausible assumption. Computer models do provide a helpful halfway house between thought experiments and empirical experimentation, but there will always be a difference between a computer model of complexity and real-world complexity. CC can help us understand the formative principles of RWC, but it cannot fully mirror real-world contingencies (Gregersen in press). As put by Stuart Kauffman, who constructed the famous models of coupled systems and their coupled fitness functions (Kauffman 1993, 29–68; cf. Gregersen 1998a, 344–47), our universe is “vastly nonrepeating”; in our search for general laws of complexity we should thus realize that we “cannot prestate the configuration space, variables, laws, initial and boundary conditions of the biosphere” in finite computers. Evolution needs both storytellers who inform us about the contingencies of evolution and those who predict grand-scale futures via computation: “Biospheres demand their Shakespeares as well as their Newtons” (Kauffman 2000, 22). Accordingly, quantitative risk assessment has a lot to learn from CC, but risks are computable only to a certain degree.³ After all, real-world autonomous agents—from bacteria to humans—do not always act according to specifiable computational if-then rules. Often we are left with statistical estimates of the individual behavior of autonomous agents.

There is not only a limit to risk calculus coming from the features of autonomous agents responding uniquely to their situation rather than just reacting to it in a stimulus-response manner. Another limit to a purely computational risk assessment is the fact that the definition of what is harmful remains to a certain extent observer relative. Of course, to drink poisonous water constitutes a danger for all people, regardless of their stance on environmental protection. However, the presence of pure water is valued differently. Accordingly, the second part of the risk formula on “loss” is weighted differently. As soon as we have autonomous agents we also have centers of evaluation that mark out what is risky and what is not. Few would be concerned about the risk of having blue-eyed children, more would be concerned about the risk of having children with Down’s syndrome, and all would care about the risk of having their children infected by the AIDS virus. The evaluative component is not easy to quantify, however, because it is about weighing the values of benefits and damages over against one another. Building a new highway may save lives in traffic (thus lowering the risk of car accidents), but it may also destroy natural resources and increase human boredom. This evaluative component (*Ev*) can be *added* to the risk calculus in the following form:

$$\text{Risk} = P(E \times I) \times S + Ev$$

If we went one step further and fully acknowledged the phenomenological point that evaluation is intrinsic to the idea of a risk (since a risk is always a risk *for* somebody), we would come to the conclusion that cultural evalu-

ations or personal norms define what counts as a risk and what does not. Evaluation is thus not only a component to be dealt with politically but also a factor that *defines* the size of potential losses. Thus, we have the following formula:

$$\text{Risk} = P (E \times I) \times (Ev)S$$

This evaluative factor is, after all, decisive for determining what constitutes a risk. For example, having a girl child was seen as a risk in European monarchies, but it no longer is. One could argue with anthropologist Mary Douglas and her collaborator Aron Wildavsky (1982) that, even though external dangers constitute the natural substrate of risks, every society has to select among the risks that it has for special attention. Risk cannot be calculated from a generalized perspective. The question then arises whether there is a value in risk taking itself—whether some benefits can be achieved only through proactive ventures that involve risks. Some religious resources for a positive attitude toward risk taking are discussed next.⁴

A TRINITARIAN THEOLOGY OF RISK TAKING

A risk-taking attitude is one in which we cope with uncertainty by accepting potential losses while expecting an overall positive outcome. Accordingly, any religion that values contingency positively and also acknowledges the risks in our responses to uncertainty has the potential of nurturing a risk-taking attitude. Luhmann has argued that premodern Christianity inadvertently functioned as a cultural “preadaptation” to the self-reflective state of our present-day risk societies. Christianity seems to have valued at least three forms of contingency. The fundamental contingency in Christian doctrine is the positive gift of existence, to which the risk of ultimate perdition is related. Second is the gift of the nontrivial qualities of life, to which the risks of trivialization and homogenization correspond. Third is the gift of being enabled to see and appreciate the beauty of the world, to which the risks of dullness and ingratitude correspond. Even though these contingencies are positively valued, the risks finally come down on the side of that which should be shunned. The idea that something important may be gained by risk taking and only by risk taking is not within the scope of the traditional dogmatics of premodern Christianity.

Faith and Human Risk Taking. The seeds for a more radical appreciation of risk may nonetheless be present at a deeper, first-order level of Christian awareness, below the threshold of second-order theologies. The teaching of Jesus suggests a dauntingly positive view of human risk taking. In the parable of the talents (Matthew 25:14–30; Luke 19:11–27), a master hands over to his servants a certain amount of money. Some go out to trade with it and come back with even more money. One, however, is so

terrified of his master that he immediately digs a hole in the ground and hides the talent entrusted to him. As the story goes, this strategy of safety is punished by the master, who takes the fearful servant's one talent and hands it over to the servant who risked the most. In this context the general maxim is given that "to all those who have, more will be given, and they will have an abundance; but from those who have nothing, even what they have will be taken away" (Matthew 25:29 NRSV).

The point is clear: the strategy of safety fails certainly, whereas risk taking may pay off, and if it succeeds it will do so abundantly. Similar positive views of risk taking can be found in many strands of the Jesus tradition (the calling stories, the windstorm on the sea, etc.). The followers of Jesus were after all those who had left the safe routines of work and family life. The early church consisted of those who had left the sanctuaries of temple, tradition, and national identity (cf. Mark 7:5). The church understands itself as nomadic, as the wandering people of God, and its personal biography is that of a pilgrimage of learning. Recurring in the biblical traditions is the idea that only the one who is willing to risk a loss will prevail, and only the one who is willing to face uncertainty on the streets of life will find God. The gift of life demands a risk-taking attitude, even to the point of losing one's life for the benefit of others. Moreover, the world is made up so as to favor and reward a risk-taking attitude. "Unless a grain of wheat falls into the earth and dies, it remains just a single grain. But if it dies, it bears much fruit" (John 12:24 NRSV).

If the world thus provides a habitable framework for risk taking, it becomes clear that no risk taking takes place in a vacuum. Risk and fate cannot be pitted against each another, because the former always takes place within the framework of the latter. Expressed in theological terms, *the world is created by a benevolent God in such a manner that it invites a risk-taking attitude and rewards it in the long term.* Risk taking is a non-zero-sum game. The gifts of risk taking are overall greater than the potential damages, and by risking one's life one does not take anything away from others; the risk taker explores new territories rather than exploiting the domains of the neighbor.

Risk Views and No-Risk Views of Divine Providence. Can human risk taking be valued positively with all the caveats discussed in the previous sections? And can the particular emphasis on risk in self-reflexive modernity illuminate the way in which we may speak of God as a risk taker? In short, does the concept of risk apply to finite agents but not to God?

Interestingly, current theologians of providence can be divided into two camps: those who are proponents of the no-risk view and those who endorse a risk view of divine providence (e.g., Helm 1994, chap. 2). Traditionally, God governs the world without ever losing control of God's creatures, without any limits to divine foreknowledge, and without ever

being vulnerable to any form of disappointment or discovery. We find strong expressions of this view in premodern Calvinism. Hear the *Westminster Confession* of 1647: “God, the great Creator of all things, doth uphold, direct, dispose, and govern all creatures, actions and things, from the greatest to the least, by his most wise and holy providence, according to his infallible foreknowledge, and the free and immutable counsel of his own will, to the praise of the glory of his wisdom, power, justice, goodness, and mercy” (5. 1).

The question is, however, whether this sort of second-order theology is in line with the first-order biblical stories about God’s genuine interaction with the world of creatures, with their recurrent references to divine compassion (Davies 2001, 232–53) and even instances of divine repentance. We find the story of Abraham’s negotiation with God in his intercession for Sodom (Genesis 18:16–33) and the story of Moses who succeeds in changing God’s initial plan to destroy the Israelites (Exodus 32). Often these first-order stories are reduced to being nothing more than sheer anthropomorphism. In the no-risk view, God does not negotiate and cannot regret, for God’s plans are unalterable. God cannot feel compassion for sinners, for God is presumed never to be affected. Before the foundation of the world God decreed the future contingencies; divine knowledge is without gaps, since it is immediately co-present with all times: past, present, and future. Accordingly, biblical references to God’s affections, such as the heavenly joy at the conversion of sinners, are taken to be human expressions of the fact that a conversion is in accordance with God’s eternal plan for humanity.

In the risk view, by contrast, God is taking an actual risk by creating a world endowed with freedom. Ideas of divine risk taking have come up across a wide spectrum of current theological thought. Intimations of a theology of a divine risk taker can be found both in very liberal strands of Christian theology such as process theology and within evangelical theology, especially in the so-called openness-of-God model.⁵

Process theology, to my knowledge, has not yet developed a theology of risk, but the key elements are certainly in place for such a move. According to Alfred North Whitehead, God is not an imperial ruler in control of the world. However, process theology is distinctive in holding that the limitation of divine power is not the result of self-restraint on the part of God but arises instead from metaphysical necessity. God’s power is always and everywhere limited by the world, which is assumed to be a coeternal principle alongside God. For this reason process theologians refuse to speak of an original creation “out of nothing” as if creation were ever the activity of God alone (Ford 1983). Rather, God is conceived as the formative love who throughout the aeons stimulates the emergence of order by persuasive power. Because the uncreated world is itself characterized by inexhaustible creativity, the world’s creativity constitutes the raw material of risk—in

Aristotelian terms, the material cause of risk. Accordingly, God might be interpreted as the formal and final cause of risk. As the source of novelty, God both creates and accepts what we have termed second-order risks by offering the relevant information for the evolution of higher-order states. The riskiness of creativity is further enhanced by God's wish to enkindle more complex, yet also more vulnerable, forms of organization. Thus it seems that process thought does not conceive of God as the primary inaugurator of risk, though God certainly incites the world to accept second-order risks and eternally absorbs the pains of creaturely risk taking. In this sense, God is both active love and responsive love—"the fellow sufferer who understands" (Whitehead [1929] 1978, 351).

I believe that with a stronger view of divine creation than is allowed for in process theology, Christian thinking has grounds for a stronger affirmation of God as the primary source of risk. Evangelical theologian John Sanders has argued in *The God Who Risks: A Theology of Providence* (1998) that the idea of a risk-taking God is consonant with several biblical traditions. Important for his argument is taking seriously, in an ontological sense, the anthropomorphic language used about God in both the Hebrew Bible and the New Testament. God may not have hands and eyes in the literal sense, but the intention of these images is to affirm God's real and reciprocal relations with human agents (Sanders 1998, 19–23). Sanders also wants to argue that the idea of a divine risk taker is conceptually intelligible. If God establishes a creation with the general strategy of affirming freedom, God cannot but take risks. "Risk taking must be seen as an element in the broader structure of goals and relationships" (1998, 172).

On this view, divine omnipotence cannot be treated as an abstract doctrine of a philosophical theology but should rather be respecified according to the central commitments of the Christian gospel. The *size* of God's power (whether it is total or not total) is not the relevant question here, but rather God's *use* of that power according to God's own character and will. God "has" an all-determining power in the sense that all that exists and the way the world is have their sole source in divine creativity. But power is not a commodity that God wants to possess in splendid isolation; it is something that God wants to spread into the network of creation.

Similarly, concerning divine omniscience, the interesting question is not whether God knows all or less than all. The real issue is the nature of the *all* about which divine omniscience is asserted. On the risk view, this all must be all-that-can-be-known, given the limitations that God has chosen by creating a world that includes relatively autonomous agents. Both omnipotence and omniscience should thus be redefined by God's love materialized in God's will to create and interact with free creatures.

The Divine Risk of Giving Gifts. In the New Testament God is defined as love. "Whoever does not love does not know God, for God is

love" (1 John 4:8 NRSV). Now if God *is* love (and does not simply occasionally *show* love), love must also inform God's actions in relation to the world. The idea of a creation *ex nihilo* (out of nothing) may thus be seen as the negative version of the affirmative statement that God's creation comes "out of divine love" (Fiddes 2001). This position differs from process thought insofar as the world would not *be* without divine love. The world is not a metaphysical necessity but is created, as it were, *ex nihilo*. To this negative statement corresponds the positive statement that the existence of the world depends on the ecstatic love that God eternally *is*.

One could argue that trinitarian theology wants to be nothing other than an explication of the above sentence (Prenter 1971). God is the self-related community of Father, Son, and Holy Spirit. In the community of divine love, the principle of creativity is always there, in the form of the Father; the principle of otherness is always there, in the form of the Son; and the principle of ecstasy is always there, in the form of the Spirit. Thus, the inner divine life is characterized by a self-relatedness that provides the common matrix for God's outward relationality. The world is created out of God's will, a divine will that stimulates and enjoys otherness.

In what follows I outline how the concept of divine risk taking can be further sustained. The focal point is the notion of divine love combined with the risks involved in the exchange of gifts. In the section on human risk taking I discussed the kinds of risk associated with receiving oneself as a gift. There I spoke about the gift of existence, the gift of living in a multifarious world of beauty, and the gift of being able to see God's world appreciatively. By contrast, the fundamental risks of God are connected to the risk involved in *giving* gifts.

God not only gives a gift, God also gives God's self as a gift to the world. God's self-communication (or revelation) can be translated as God's self-donating love. A close analogy to this in human life is the situation of proposing—of laying bare one's intentions, of declaring one's love to the beloved other. This move involves a twofold risk: the risk of being misunderstood (a possibility that Søren Kierkegaard recurrently thematizes in his idea of divine self-giving) and the risk of being rejected. By revealing oneself to the other, one is exposed to the risks of both negligence and not being accepted.

The divine dilemma is that a variety of responses to the divine initiative are possible on the part of creatures. Human responses cannot be forced if God is really the love that sets free. Anglican theologian William Hubert Vanstone, in *The Risk of Love* (1978), has developed a phenomenology of love in which he characterizes three marks of authentic love. The first mark is *limitlessness*. True love does not impose specific limits on the conduct of the other but "accepts without limit the discipline of circumstances" (Vanstone 1978, 44). True love is not conditional but shows its largesse by wanting to enlarge its sphere of influence while accepting the restraints of

the other. Second, authentic love knows about the *precariousness* of love. Love avoids the distortion of possessive control, which would be nothing but extended selfishness. Accordingly, the lover is often depicted as a “waiting figure” (1978, 49) who patiently awaits the free response of the other. Third, love is *vulnerable*. The genuine lover is not a detached person; by laying oneself bare, one’s giving is endangered. “Where love is authentic, the lover gives to the object of his love a certain power over himself—a power which would not otherwise be there” (1978, 51). Vanstone is keenly aware of the weak and unguarded position of self-giving love. Giving oneself means being part of a transaction, an exchange that must go back and forth until the gift is received and finds its place in the recipient.

Against this background Vanstone develops an image of the loving creator that is based on the character of the redeemer Jesus Christ, who, according to Philippians 2, emptied himself of power in an act of *kenosis* (the Greek term for the self-emptying of power). Vanstone suggests that “the Kenosis of the Redeemer points to, and is the manifestation of, the Kenosis of the Creator: and we may describe as ‘The Kenosis of God’ that activity of authentic love which is the activity of God in creation . . . nothing remains in God unexpended” (Vanstone 1978, 59, 60). God is not acting as one who proceeds by an assured program (a design), but as one who proceeds precariously and stepwise into the unknown future. The divine matrix surpasses the idea of a fixed design.

The position expounded by Vanstone has influenced a great deal of modern reflection on the divine creation as founded in the kenotic work of Love.⁶

The Threelfold Risk of Divine Love. The next question is whether the links between our previous phenomenology of risk and Vanstone’s phenomenology of love can be further elaborated.

First, I caution once again against a reification of risk. Risks are not something found “out there”; they are always taken by somebody or for somebody in a given situation. And yet, risks are taken in an environment that existed before the risk taking. Therefore risks cannot be seen as replacing fates and dangers. The risks of God occur in the ambience of divine Love. When God takes risks, these are always subordinate to the framework of love and gift giving in which the risks occur.

Second we have seen that the legitimacy of risk taking is conditioned by the size of the risks staying under the catastrophe threshold. Divine risks would be morally tainted if God imposed risks on creatures that were in principle unbearable. Thus, by applying the catastrophe limit to risk taking to God, we may infer the following rule: *The more risks God is willing to take within the order of creation, the more God must be able to absorb the risks and restore the loss imparted on the creatures in the order of salvation.* If not, divine risk taking falls out of the logic of love.

Having made these points, it is possible to point to the relevance of trinitarian theology for the idea of divine risk taking. For the creativity of God, traditionally assigned to the Father, correlates with the divine acceptance of taking risks by creating otherness. If God created human beings in God's own image (Genesis 1:27f.), God must have provided a space for fresh initiatives to arise among human beings. The so-called free-will defense goes one step farther by arguing that God could not, even in principle, have created rational creatures endowed with the capacity for goodness without also taking the risk that these creatures might turn themselves against the will of God in the exercise of evil (Plantinga 1977, 7–65). In the science-theology discussion, this free-will defense has been generalized into a free-process view that also assigns freedom to natural processes. The argument is that if God wanted to create a genuine otherness in nature, God would also have to grant real autonomy to natural processes.

If God had a definite plan or design for the world, God could be said to infringe upon the respect for others demanded by divine love. Instead, God seems to be building up creatures stepwise, in accordance with their self-development. Thus, even though moral freedom might be exercised by human beings alone, an exploratory freedom is exercised by all biological life-forms that are able to learn from and adapt to their environments. God both supports and stimulates complex adaptive systems, some of which are autopoietic systems that are able to produce new elements in the process of their development; the pathways of the created world are thus laid down in the process of walking (Gregersen 1998a). However, even here the development of freedom goes hand in hand with the interaction with the environment, and in this sense even autopoietic processes take place in a world that is already there. Design and self-organization should not be pitted against each other, since the latter presupposes the former (Gregersen 2003). However, neither should the idea of design be forced upon the particular exploration of the world by God's own creatures.

At this juncture, another element of divine risk taking comes to the fore. God is not only taking a risk by giving creatures autonomy. God is also enduring the risks resulting from an unfinished creation. The Divine Spirit is here seen as that principle in God that insists on the fulfillment of creation while patiently offering the time needed and thereby enduring the risks of creation. God is not only active but also responsive to the sighs, pains, and laments of creation (cf. Romans 8:22–23). The Holy Spirit bears the mark of the resourcefulness and proficiency of God in solving problems as they come up during the process of creation.

And now to the third step of divine risk taking. God is not only taking a risk in creating a world of freedom or only enduring and overcoming the risks of creation. God is also, according to Christian tradition, *assuming the victim's role* in the incarnation of the eternal Son. The story of the cross and the resurrection of Christ is the story about how God the Creator,

who has exposed others to risks, also bears the risks and succumbs under the burden. On the cross God is depicted as self-giving, even under the burden of the loss caused by risk taking. Since he had no offspring, Jesus is the icon of loser in the evolutionary arms race. Since he was not able to make use of the protection of social networks, Jesus is the icon of an outlaw who refused to play the game of success in social competition. Jesus faithfully assumed the risks of life, and he crumbled under them (Gregersen 2001, 203–5).

So the conclusion is both simple and complex: When Christians believe that God was in Christ, God is proclaimed to be the co-carrier of the costs of creation. In an interconnected world, risks are shared risks, and the Creator did not withdraw from the ethics of sharing risks, even to the point of death. According to the doctrine of Incarnation, God assumed, and also adopted, the human nature of a person who tragically failed in his willingness to put himself at stake. However, the cross of Christ is also absorbed into the eternal ground of God's being. So deeply has God in Christ united God's self with the victims of risk that God not only passively endures risks but also actively transforms the lives of those who lose in the game of risk taking.

NOTES

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1. In the literature, one sometimes meets two other etymological proposals, one from the Arabic word *rizq*, meaning “dependency upon God or fate,” and the Latin *resicare*, meaning “cutting up”; but, according to *Historisches Wörterbuch zur Philosophie*, this etymology is phonetically and conceptually not possible (Rammstedt 1992, 1045, with references).

2. See Luhmann 1991, 31–38, and his definition in Luhmann 1990, 148: “Der Unterscheidung von Risiko und Gefahr liegt ein Attributionsvorgang zugrunde, sie hängt also davon ab, von wem und wie etwaige Schäden zugerechnet werden. Im Falle von Selbstzurechnung handelt es sich um Risiken, im Falle von Fremdzurechnung um Gefahren.”

3. On the distinction between CC and RWC, see Gregersen in press.

4. What follows is adapted from Gregersen 2002a.

5. Process theology has many faces, but an influential and fairly representative position can be found in Cobb and Griffin 1976. The manifest of the openness perspective is Pinnock et al. 1995, followed by Pinnock's later book (2001). An internal discussion of differences and common ground between the two can be found in Cobb and Pinnock 2000.

6. See Polkinghorne 2001, a collection of essays dedicated to Vanstone.

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