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# Rainmaking: Observed with social systems theory

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**Abstract**

This article examines contemporary efforts to control climate change through the lens of social systems theory, particularly by drawing comparisons to rain dances and shamanic rituals. It argues that modern climate control strategies bear functional similarities to archaic rituals aimed at influencing weather patterns, despite the absence of direct causality. Using Niklas Luhmann's concepts of autopoietic systems and functional equivalence, the article demonstrates that both historical and contemporary approaches to climate influence rely on blame-shifting mechanisms and the social production of scapegoats, with failure often attributed not to the rituals or solutions themselves but to noncompliance or impurity among participants. The originality of this article lies in its application of social systems theory to link contemporary climate control strategies with ancient rituals, positioning them as functionally equivalent social phenomena. By drawing comparisons between shamanistic practices, corporate consulting, and global climate governance, the article provides a unique lens for understanding that the primary function of modern climate efforts may be to regulate social behaviour rather than achieving concrete natural environmental outcomes.

**KEYWORDS**

climate change, corporate consulting, primates, rain dances, shamanism

*... a rain dance, because in these times of climate change it is a dance we desperately need ...*

(Reusch & von Merveldt, 2023)

*I could only watch, and marvel at the magnificence of those splendid creatures. With a display of strength and vigor such as this, primitive man himself might have challenged the elements.*

(Goodall, 1988)

## 1 | INTRODUCTION

In an age where climate change dominates global discourses, the strategies mankind employs to mitigate its effects are increasingly complex. From ambitious international agreements like the Paris Accord to technological innovations designed to reduce carbon emissions, humanity is engaged in a vast socio-technological experiment aimed at stabilizing the planet's climate. However, despite decades of effort, the global climate crisis remains unresolved (Costanza, 2020), with climate change or the policies implemented to combat it, respectively, threatening the sustainability of life as we know it.

Against this background, this article draws on Luhmann's (1989, 1995) social systems theory to explore the extent to which contemporary approaches to climate control might constitute functional equivalents to rainmaking rituals practiced by shamans in premodern societies. Historically, rain dances and similar rituals were performed to influence weather patterns, often relying on

  

community cohesion and belief in the shaman's power, despite the lack of direct evidence that these rituals affected the weather.

The question this article aims to explore is whether modern climate strategies, while grounded in science and technology, might function in a similar way—as symbolic acts that bring society together rather than directly solving the problem.

The core argument is that both traditional and modern climate efforts rely heavily on social cohesion and belief systems. Where ancient communities blamed ritual failure on a lack of purity or cohesion among participants, modern society often attributes failure to combat climate change to societal flaws, such as collective 'social addictions' (Costanza et al., 2017) to unsustainable lifestyles. The article further explores how contemporary efforts to mitigate climate change not only aim to control the natural environment but also regulate social behaviour through blame-shifting, scapegoating and moral condemnation of those who do not adhere to climate-conscious norms.

By drawing these parallels, the article seeks to offer a novel approach to contemporary climate governance, positioning it as a 'functionally equivalent' social phenomenon to ancient rainmaking rituals. The question of whether these efforts are truly effective in addressing climate change or whether their primary function is to shape social behaviour remains central to this analysis.

## 2 | SYSTEMS AND SIMILARITIES

Social systems theory in the tradition of Luhmann (1995, 2012) is based on the seminal ideal that 'a system is the difference between system and environment' (Luhmann, 2006, p. 38). This idea is notably influenced by Maturana and Varela (1980), who described living systems as those capable of creating and preserving a boundary between themselves and their environment. These 'autopoietic' systems are therefore characterized by the continuous stream of distinctions they make between their internal processes and the external environment. In this way, autopoietic systems are essentially defined by their own self-sustaining operations.

Another core idea of Luhmann is that systems are characterized by one single mode of operation (see Figure 1).

Figure 1 shows that Luhmann distinguishes between machines, organisms, social systems and psychic systems. According to Luhmann, machines belong to the realm of allopoietic systems, which lack the capacity of self-reproduction. In contrast, the latter three types of systems are considered autopoietic, each defined by its basic operation. In the case of organisms, this basic operation is the reproduction of life, whereas for psychic and social system, the basic operation is the reproduction of consciousness and communication, respectively.

Because organisms, psyches and social systems are each constituted by fundamentally different forms of reproduction, similarities between aspects of the autopoietic reproduction of life, consciousness and communication must not be understood in terms of 'essential features to be found in all systems' (Luhmann, 1995, p. 15). Instead, these similarities should be 'formulated in the language of problems and their solutions', with the understanding 'that there can be different, functionally equivalent solutions for specific problems.' (id.)

Thus, Luhmann's functional method is designed as a technique to

> Comprehend what is present as contingent and what is different as comparable. It relates what is given, whether that be states or events, to perspectives on problems and seeks comprehensibly to enable a problem to be solved in one way or another. The relation between the problem and its solution will thus not be grasped for its own sake; rather, it serves as a connecting thread to questions about other possibilities, as a connecting thread in the search for functional equivalences
>
> (Luhmann, 1995, p. 53)

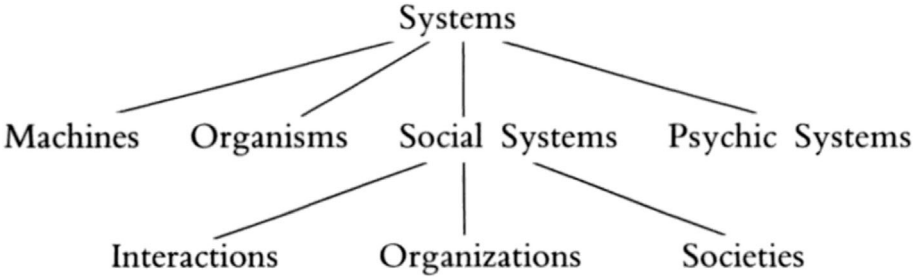


**FIGURE 1** Unnamed figure in Luhmann (1995, p. 2).

The *functional equivalence* between the memory of psychic and social systems is a case in point. In both cases, the 'real function of memory lies not in preserving the past but in regulating the relationship between remembering and forgetting' (Luhmann, 2012, p. 162). In other words, 'The main function of memory therefore lies in *forgetting*, in preventing the system from blocking itself by congealing the results of earlier observations' (Luhmann, 2012, p. 349), regardless of whether the respective memory consists of mental or communicative operations. This perplexing similarity, however, does not imply that the two forms of memory are essentially the same, but rather suggests that we are confronted with two functionally equivalent solutions to a similar problem located in two different domains.

The same logic applies to comparisons within one and the same systems domain. For example, within the social domain, written and oral communications provide functionally equivalent solutions to the problem of double contingency (Luhmann, 2012, p. 172), even if, or precisely because, they represent fundamentally different forms of communication.

In the following comparison of different forms of rainmaking, it is hence important to remember that we are not making essentialist claims, but rather seek to employ a functional method to obtain information.

## 3 | A PRIMER ON PRIMATES

Luhmann's social systems theory has often been describe as a post-humanist (Eva Knodt in Luhmann, 1995, p. xxx). This assessment is true to the extent that Luhmann (1995, p. 212) deliberately departs from the 'Old-European' tradition of representing society as composed of groups and subgroups made of humans, instead viewing 'human beings as part of the environment of society (instead of as part of society itself)'.

Reviewing Figure 1 supports this claim, as it shows that, even though humans are the perhaps most social of all animals, we find that 'the human condition clearly implies an organic and psychic dimension' and, consequently, 'that our persistent interest in human individuality implies a focus on the interplay of three independent types of systems,' (Roth & Valentinov, 2023, p. 337) rather than the observation of one single autopoietic system.

The fact that humans are situated in the environment of social systems also means that the organic and psychic operations of systems involved in communication can never enter social systems directly; they can only appear in communication as topics of communication and thus as communicative operations. Consequently, even the question of who or what qualifies as a participant in communication is entirely determined by communication. This circumstance does not preclude the possibility of human–animal or animal–animal communication, even though Luhmann (1995, p. 67, own emphasis) himself tended to reserve personhood for human beings: 'Persons (...) come into being through the participation of *human* beings in communication. (...) They are not alive, they do not think; they are constructions of communication for the purposes of communication. They owe their unity to the autopoiesis of the social system society, whose products they are.'

Within social systems theory, this anthropocentric view of social systems has been notably challenged by Brock (2007), who aligns with primatologists like Goodall (1988, 2005) in suggesting that apes may have the precursors of ritual and culture. Of particular importance in this context are Goodall's (1988) observations of what she later referred to as chimpanzee 'rain dances'. These involve prolonged, coordinated sets behaviour—such as the rhythmic waving of tree branches, hooting and foot-to-foot movements—enacted exclusively by adult male chimpanzees in response to thunderstorms while their female and younger conspecifics watch the performance from the surrounding trees. Although there is debate as to whether these rain dances qualify as proto- or minimal rituals (Hattori & Tomonaga, 2020; Kalan et al., 2023; McNeill, 1997; Tennie & van Schaik, 2020), they have more than once been associated with 'man's most ancient longing: to become one with the forces of the Gods' (Montgomery, 2009, p. 140) and discussed as potential precursors of shamanism (Winkelman, 2015; Winkelman, 2019).

## 4 | SHAMANS AND SHAMING

From a classical modern perspective, it appears evident that chimpanzee rain dances have the same causal influence on the weather as the rituals performed by human shamanic rainmakers, which have been practiced in many cultures throughout history and continue in some parts of the world today. The question then is as follows: how do shamans remain shamans despite the obvious disutility of their rituals? Why is it that members of a tribe still believe in the powers of their shaman even if their meticulously performed rain dance regularly fail to make it rain?

The answer is relatively simple: blame shifting and scapegoating. 'Lack of rain is usually associated with sin, and therefore the high priest urges the people to "purge themselves of any known sin(s) committed against one another, their ancestors, nature, the environment and

God" (Haruna, 1997, p. 230). The confessional and supplicatory prayers are effected by people considered pure. For instance, only married women, without exception participates in the ceremonies, and all unmarried women and prostitutes are left out. The exclusion of unmarried women and prostitutes corresponds to the act of purification.' (Ombati, 2017, p. 84).

Hence, there are no negative consequences for the shaman if the ritual fails to achieve the desired outcome, as long as the shaman can persuade the tribe, and perhaps even themselves, that the failure lies neither in the performance nor in the performer, but rather in a lack of cohesion, conviction, cleanliness or compliance among the audience for whom the ritual is performed.

German organizational sociologist Kühl (2019, p. 11) has recently argued that similar principles are at play in contemporary organizational settings. In pointing to the example of shamanic rainmakers, he argues that their true value does not lie in their assumed supernatural powers, but rather in their capacity to foster unity within their tribe. By addressing the problem of drought, rainmakers give their tribe a chance to reflect on whether they have the favour of their gods or other supernatural powers. Understanding this 'rainmaker effect' involves recognizing that, although many social institutions fail to serve their ostensible function, they may still fulfil important other functions that may not be immediately obvious.

The central hypothesis of his book is then

> That we can observe this type of rainmaker effect in many of the concepts that are being bandied about in management circles today, including that of the learning organization, the knowledge-based company, and the agile system. These relatively new management concepts promise to provide proven, supposedly rational principles for successful organizational change. The assumption behind them is that companies can count on the success of their change projects only if change processes are organized according to tried-and-tested principles, which include clear objectives, employee identification, participation, communication, and continuous learning. This book will fundamentally challenge the soundness of these principles, though without going so far as to claim that these new change-oriented management concepts are completely useless. As with rainmakers, they contain a hidden benefit.
>
> (Kühl, 2019, p. 11)

As Kühl is keen to uncover the hidden benefits of contemporary rainmaking practices, he is less concerned with their negative side effects, such as the social production of scapegoats, sinners, resisters, dissents and endangerers to public or planetary welfare.

In contemporary organizational settings, the notion of the 'rainmaker' has been recontextualized within the sphere of management consulting. Prestigious consulting firms—such as McKinsey & Company, Accenture and KPMG—often assume the role of modern-day shamans, engaged by organizations seeking transformative solutions to complex challenges (Kiechel, 2010; McKenna, 2006). These firms are esteemed for their expertise and are perceived to possess the knowledge and influence necessary to deliver desired outcomes, such as increased revenues or successful strategic transformations.

These consultants employ rituals analogous to traditional shamanistic practices—strategic meetings, vision workshops, leadership retreats and motivational events—that serve to align organizational members toward common objectives (Sturdy et al., 2009). They introduce proprietary methodologies and frameworks, often enveloped in specialized jargon, to instil a sense of purpose and direction. However, when these initiatives fail to yield the anticipated results, responsibility is frequently deflected away from the consultants and leadership. Instead, failures are attributed to factors such as improper implementation, employee resistance or unforeseen external market conditions (Alvesson & Johansson, 2002; Mazzucato & Collington, 2023; Noble, 1999).

Common justifications for unmet objectives include assertions that the strategy was 'poorly implemented', there was a 'lack of buy-in from employees,' or that 'market conditions changed unexpectedly' (Mazzucato & Collington, 2023; Noble, 1999). Consultants may contend that their recommendations were sound but were not executed effectively by the client's team, thereby absolving themselves of accountability (Noble, 1999). Alternatively, they might argue that unexpected external factors—such as economic downturns, regulatory changes or competitive disruptions—undermined the project's success (Miller & Rose, 2008).

Such blame-shifting mechanisms are often embedded within consulting proposals, engagement letters and contracts. These documents typically include clauses that highlight the potential impact of external conditions on the outcomes of the work, effectively pre-empting responsibility. A standard clause might state the following:

> The Consultant shall not be liable for any delays or failures in performance resulting from circumstances or causes beyond its reasonable control, including but not limited

> to the client's failure to provide necessary information or resources, changes in market conditions, or acts of God.

By emphasizing externalities, consultants insulate themselves from blame and maintain their reputations even when projects do not meet expectations (Cerruti et al., 2019).

## 4.1 | Blame shifting in practice

The persistence and prominence of these consulting firms, despite instances of unsuccessful outcomes, underscore the efficacy of their blame-shifting strategies. Clients are often hesitant to criticize or hold consultants accountable due to their renowned expertise and the prestige associated with engaging top-tier firms (Glückler & Armbrüster, 2003). This reluctance is further compounded by factors such as reputational risk, perceived expertise and dependence on future services (Kitay & Wright, 2007). Real-life cases elucidate this phenomenon include the following:

1. McKinsey's role in the opioid crisis

McKinsey advised Purdue Pharma on strategies to 'turbocharge' the sales of OxyContin, a highly addictive painkiller, contributing to the opioid epidemic in the United States. The consultancy developed plans such as the 'Evolve to Excellence' initiative, which aimed to increase sales by targeting high-volume prescribers and circumventing pharmacy restrictions. When the devastating effects of the opioid crisis became apparent, McKinsey faced lawsuits from multiple US states. The firm attempted to deflect blame by stating that it was merely providing standard consulting services and that the responsibility lay with Purdue Pharma's decisions. McKinsey settled the lawsuits for $574 million without admitting wrongdoing, maintaining its standing in the consulting industry.

2. Accenture's role in Hertz's website redesign failure

In 2019, Hertz sued Accenture for $32 million over a failed website and mobile app redesign project. Hertz alleged that Accenture delivered incomplete and deficient work, leading to project delays and additional costs. Accenture responded by pointing to contractual clauses and limitations, effectively telling Hertz that it should have been more diligent in reviewing the contractual fine print (Belden, 2019). Accenture argued that the issues stemmed from Hertz's changing requirements and lack of clear direction, thereby shifting blame onto the client. This case highlights how consulting firms might deflect blame onto clients when projects do not meet expectations.

3. KPMG's Carillion case

KPMG faced criticism for its audit failures in several high-profile corporate collapses, such as the collapse of Carillion in the United Kingdom. Despite evident shortcomings in detecting and reporting financial issues, KPMG often attributed these failures to complex market conditions or client misrepresentations (Jackson, 2018). The firm continued to secure significant contracts, illustrating how blame is shifted away from the consultant.

Furthermore, Mazzucato and Collington (2023) contend that reliance on consultants leads to a 'parasitic' relationship, where organizations become dependent on external expertise at the expense of developing internal capabilities. This dependency erodes institutional knowledge and weakens the ability of organizations, particularly governments, to function effectively without external advice. The authors assert that consultants often promote standardized solutions and best practices that may not align with the unique context or needs of the client organization. When these one-size-fits-all solutions fail, consultants typically shift the blame onto the client. As Mazzucato and Collington (2023, p. 112) observe,

> Consultants are adept at absolving themselves of responsibility when their recommendations do not yield the promised results. They attribute failures to poor implementation, organizational resistance, or unforeseen external factors—never to the inadequacy of their own advice.

This practice mirrors the shamanic blame-shifting mechanisms observed in traditional rainmaking rituals, where failure is ascribed to the community's transgressions rather than the ritual itself (Ombati, 2017). By externalizing blame, consultants maintain their authority and continue to be perceived as indispensable.

The 'rainmaker effect' in corporate contexts exemplifies how these rituals and blame-shifting mechanisms function to maintain the authority of consultants and organizational leadership, even in the face of unmet objectives (Kühl, 2019). This dynamic mirrors the functional equivalence between ancient shamanic rituals and modern management strategies. Just as shamans might attribute the lack of rain to the community's transgressions or insufficient faith, modern consultants may attribute project failures to factors beyond their control,

thereby preserving their status and authority within the social system.

## 5 | CLIMATE AND CONDITIONING

The idea that dance can influence the weather, or even the broader climate, is not exclusive to premodern societies; it is also seriously discussed in contemporary university settings. For example, 'Dancing for climate change' (Collard-Stokes, 2021), or against it, is presented as a valid strategy for influencing the climate.

Though these attempts at dance-induced climate changes or stabilizations are certainly not based on the assumption of direct causal relationships between local dance performances and global weather patterns, they seem to imply indirect causality. One example is the idea that 'through climate-conscious dance we can reconnect ourselves with the environment and help restore the earth' (Gotskind, 2019). Contemporary rain dances thus position themselves as part of social and technological measures aimed at global climate control.

In this sense, the rain dance of our time is a gigantic socio-technological endeavour aimed at building the equivalent of a global air conditioner—that is, a climate conditioning system designed to stabilize the global climate. Humanity, being innovative and determined, is less doubted in its ability to achieve this aim than in determining who should control the remote of this metaphorical aircon. One possible candidate is certainly the United Nations, which is, if not the origin (Selcer, 2018), certainly a major catalyst (Roth, 2024) of idea of Earth as a well-tempered spaceship maintained by a spaceman economy, also known as the circular economy. However, it is also worth noting that the majority of the UN members represent non-democratic political systems, which makes its institutions resemble a final-stage Weimar Republic rather than a truly democratic system of world governance.

Whoever will be, or thought to be, in control of the world's climate, for the current socio-technological experiment to result in a truly effective functional equivalent to traditional rain dances, it is essential that most members of the tribe of our global village believe that modern shamans, such as climate modellers and interpreters, actually know how to influence the climate.

The paradox, however, is this: whatever rituals these contemporary shamans have performed so far—including massive conferences, ambitious legislations or draconian mandates—none have yet succeeded. This differs from traditional shamanism, where shamanic performances at least occasionally coincided with the desired outcomes, making it possible to believe they brought about those outcomes. After decades of struggle against global cooling or warming, however, it seems as if our contemporary performances constantly fail to achieve the desired climate outcomes (Jamieson, 2014).

And yet the belief in the power of our contemporary shamanic practices persists, in ways so similar to those described earlier in this article. In fact, we are told, or tell ourselves, that the rituals of our time fail to work because we fail to perform them properly. This marks a key difference from earlier times when only male apes or expert shamans were expected to perform the decisive rituals. Today, everyone is expected to co-perform the ritual. As for the other aspects of the rainmaker effect, however, the self-immunization strategies remain similar: if the ritual fails, it is not because the ritual is inappropriate, but because there are issues of social cohesion, deviance, or outright pathology within the global tribe. For example, a popular line of argumentation suggests that 'we' are unable to combat climate change with the necessary urgency because 'we' are addicted to economic growth (Jackson, 2009) and other unsustainable lifestyle patterns. This implies that these societal addictions (Costanza, 2020; Costanza et al., 2017) must be treated by 'societal therapies that will allow humans to build a sustainable and desirable future together' (Costanza, 2020, p. 5). This perspective aligns with the growing trend to pathologize the entire planet, including its human inhabitants, the majority of which is seen as a planetary health threat by a growing minority of self-acclaimed planetary therapists (Roth & Valentinov, 2023).

As in the premodern cases, our modern attempts to condition the world climate involve socially induced attempts at conditioning individual behaviour. The corresponding strategies expressively include the public shaming or financial penalization of environmental sinners or scapegoats—such as meat eaters, SUV drivers, 'energy slum' dwellers or frequent flyers—targeted by academics, activists and policy makers who go as far as to assert that the often draconian measures used during the coronavirus crisis were 'just a fire drill' (Lise Kingo, Executive Director of United Nations Global Compact, in The Guardian from 15 June 2020) or a 'dress rehearsal' (Latour, 2021) for the climate crisis.

In borrowing heavily from a study published in *nature sustainability* (Fuso Nerini et al., 2021), the World Economic Forum (WEF) in 2022 also celebrated the fact a 'huge number of unimaginable restrictions for public health were adopted by billions of citizens across the world' (Kumar & Kaushik, 2022) during the coronavirus crisis. In this context, the WEF alluding to the possibility that similar restrictions could be imposed and enforced for climate control, as technological breakthroughs now

'can enable tracking personal carbon emissions'. This would allow the implementation of effective systems of personal carbon allowances where persons exceeding their allowance either need to pay financial compensations or are barred from consuming certain products or services, including public or private transport. If implemented, such an idea would amount to the creation of an 'ecological', 'Western' variant of the Chinese social credit system, which has often been criticized as totalitarian.

## 6 | CONCLUSIONS: SINS AND SENSES

There is a German fairy tale titled 'Der Bauer als Wettermacher' (Engl.: *The Farmer as Weather Maker*), documented in Birlinger and Buck (1861) and also available in this earlier version from 1854:

> There once was a man who was never satisfied—neither with his fate, nor with people, nor even with dear God. At one' moment, he would criticize this, and at another moment, he would criticize that aspect of God's world governance. But above all, he criticized the weather. Today, it was too warm for him; tomorrow, it was too cool. Today, the rain lasted too long for him; tomorrow, it passed too quickly. Today, the sun seemed too damp; tomorrow, too dry. In short, he always had something to complain about regarding the weather. And once, during the holy twelve nights, he said: 'If only I could control the weather myself at my will, then the crops would surely look very different.' And, lo and behold, after he had said this, a man appeared before him, surrounded by a bright light, and said: 'Your wish to control the weather is granted. From today on, your fields will receive only the weather you desire and consider best.' With that, the apparition disappeared.
>
> The complainer was now overjoyed that his wish had been granted. Since it had not yet snowed, he first wished for a thick layer of snow over his fields. And behold, when he went to the fields, it snowed merrily down upon them. He let the snow remain until the first of March, then ordered dry weather, followed by alternating sunshine and warm rain, and occasionally thunderstorms, believing that he had arranged everything wisely and well. His crops indeed outshone all the others in the field, growing and blooming to his great delight, and the man walked around proudly as if he were God Himself. But when the time for the harvest came, though he brought large wagonloads to his farm, it was nothing but straw and not a single grain of fruit: for the sapient man had forgotten the wind.
>
> (Pröhle, 1854)

Just as fake news is the invention of a liar (Giglietto et al., 2019), rainmaking is more than often the invention of a sinner. This observation is warranted insofar as rainmakers may sin against God by playing God or by sinning against His creation. Thus, the concept of sin can apply to those arrogant enough to believe they can not only define the optimal climate for both the present and future generations, but also bring it about and maintain it. But it can also apply to those who hold that the self-acclaimed rainmakers should not play God, thus frustrating their efforts.

Although the current momentum is more in favour of the rainmakers rather than the 'deniers' of their powers, this article does not aim to take sides. Instead, its ambition was to establish that current attempts at designing the world climate bear resemblance, and thus might constitute functional equivalents, to archaic or even proto-human rain dances.

As with the earlier forms of rain dances, contemporary attempts at climate design may or may not only have desirable effects on the natural climate, but also have both desirable und undesirable effects on the social climate of our global village. Although rain dancing rituals might indeed trigger increased reflexivity within the tribe, blame shifting, scapegoating and shaming—and the creation of (climate) sinners—are among the presumably less desirable social side effects.

In this sense, we are inclined to challenge Luhmann (1989, p. 123), who in his *Ecological communication* declared:

> The dogma of original sin was a schema of self-observation unequaled and unsurpassed historically. It led, if not on the psychological then at least on the communicative level, to moral self-condemnation and therewith to a mitigation of moral criticism. No one, for example, could recognize sin in another's act of going to confession. Everyone had to do this. All classes, even the clergy, were subject to this principle. It was designed to be class-neutral and at the same time made it possible to work out a class-specific catalogue of

> sins and dangers to salvation. This was discussed as 'pollution' or 'hereditary pollution' of souls. Only because this schema was increasingly undermined by the personal attribution of guilt and the impossibility of knowing an individual's state of grace could a religious moralism flourish whose secular after-effects are still felt today. But a modern functional equivalent for original sin is not on the horizon.
>
> (Luhmann, 1989, p. 123)

What is somewhat on the horizon, however, are personal carbon allowances programmes, which amount to a form of accounting that attributes pollution to individuals, though not to their souls, but to their ecological ledgers. In such context, a secular yet functional equivalent of sin reemerges in the form the emission or 'causation' of $CO_2$ in amounts that exceed the thresholds defined by a caste of climate modellers and interpreters.

As demonstrated during the 'war against the virus', which to some remains a role model for the ongoing 'war against climate change', climate sinners should not expect much empathy from devout ecologists and other members of our contemporary rainmaking cult. There is, hence, a certain risk that this cult may take ever-more radical, even totalitarian forms. This argument is further supported by the fact that CO2 is not the only greenhouse gas attributable to human organisms. A recent study published in *PloS ONE* (Dawson et al., 2023) analysed the concentrations of $CO_2$, $CH_4$ (methane) and $N_2O$ (nitrous oxide) in the breath of human participants. The study found that 31% of the sample qualified as 'methane producers'—individuals whose bodies emit methane at levels higher than a threshold set by the researchers.

From an epistemological perspective, however, the greater risk is that we hardly can answer, and mostly not even dare to ask, the question how we could know if we are in a situation similar to that of the primate or archaic rain dancers mentioned earlier in this article. How can we know that our contemporary rain making rituals truly influence the natural climate of our planet and not only the social climate within our world society?

Although answers to this question are unlikely to directly challenge the current mainstream discourses on climate change, they may foster the development of ideas that could become the mainstream of the future—much like the current ecological paradigm, which is an alternative mainstream of the past.

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