Synopsis of *3000: An Earth Odyssey*

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Gert Jan (1956) lived in different cultures in his childhood. He studied population biology in Wageningen from 1976-1983, in a desire to contribute to the future of the biosphere. Then, starting a family, he found work in computer programming, to return to academia for a job in the budding group of computer science in Wageningen. He published a PhD in 1992 called "Modesty in Modelling". When the World Wide Web hit the world around 1994, he realized that increased worldwide communication would bring new challenges. Gert Jan began designing games to illustrate the complexities of international collaboration. For this, he also started to publish with his father Geert. This led to publications about games for cross-cultural learning, and to new editions of the best-selling "Cultures and Organizations: Software of the mind". Subsequently he used his experience to create computational social simulations. In 2018 he coined the term "Artificial Sociality" for his personal professorship.

Abstract

This is my farewell address as professor of Artificial Sociality at Wageningen University, live on 21 March 2024, available as livestream (wur.yuja.com) and video. It is intended for a wide audience. I sketch what humanity could look like in the year 3000. This millennium jump allows me to take a close look at our essence as a eusocial species, without being distracted by current issues. I have messages for three kinds of listeners:

- *To those that use models for public policy:* models tend to have money as their currency. Of the two relational channels of love ("status" that we aspire to, give, and claim) and fear ("power" that we fear and wield), this puts the focus on the latter. I plead to take the status relational channel of human sociality on board in models (e.g. pride, allegiance, loyalty). Likewise, to acknowledge the fission-fusion dynamics around symbolic groups (e.g. collective action, social tipping points). I provide concepts for this. The literature section provides pointers. There is a lot of work to be done in this area.
- *To my university:* We live, academically, in the century of biology. Our "university for life sciences" is well placed for making deeper connections between the conceptual worlds of people in the biological and the social sciences.
- *To anyone:* Reassure yourself that what you feel is most important in your life, is indeed the most important, and drives our common fate. Realize that the things we feel emotionally (loyalty, loneliness, admiration, pride, shame…), can be hard to comprehend. Yet they can be explained biologically, put into concepts, and modelled.

I'll now give a brief synopsis of the talk.

Format

I take the audience on a "Magical Mystery Tour" of sociality. The magic is to look at ourselves as if we were David Attenborough, the naturalist. The mystery is our sociality. The tour is into the future.

The slides deal with the main concepts. I start by presenting building blocks of our current sociality ("GRASP"), then move to some speculation about the future. Three sensory channels support me:

- *Pictures.* The slides are all pictures I took recently. Many of them are of the river Rhine, that in a real sense is the mother of life in our delta. Quite a few show snippets of the social life of a certain tribe of Homo sapiens that I have been fortunate to observe.
- *Music.* Music tends to be about the emotions and relations that are crucial to us. This is particularly true for the songs by the Beatles. These songs combine with the pictures, allowing listeners to attach feelings to them, for fuller comprehension.

- *Storyline.* I try to serve my varied audience by concentrating on the absolute essentials in my talk, while providing background and references below. Sociality is our essence in our real lives, and it can be brought into the models we make to support our policies.

Our essence: sociality

A human being spends its entire life craving for contact. It is in effect a story written by its reference groups: parents, siblings, teachers, partners, children, books, priests, followers, influencers… If you don't know who you are, that means you don't know which of these reference groups to listen to.

In this social world, people need to collaborate, so that "Paris gets fed". There are two relational channels for this: love (status), and fear (power). The unit of cooperation is the group; there are many nested and overlapping groups in our lives. A group defines mutual rights and obligations: it act as a "moral circle". There are four modes of sociality with very different relational connotation: communal sharing, authority ranking, equality matching, market pricing. Moral circles mix and choose among these for their various activities. Rituals large and mundane organize these activities.

The fine print of sociality differs across families, groups, profession, and societies. That is called culture. I will not talk about culture much this time, but see https://geerthofstede.com for pointers and resources. Culture is what water is to a fish. It surrounds, supports and limits us without us being aware of that. We acquire our culture through socialization. We perceive our culture through the everyday rituals we engage in, and the emotions we have about them. We naturally believe our society's way of organising our lives to be the best possible, most moral, way: habits turn into norms.

The future

How has our sociality been evolving, and how is it set to evolve? I'll show that communal sharing and authority ranking have been on the decline over the last century, while moral circles have increased in size and the population has aged. This combination of factors, I believe, has been leading to more anxiety. This in turn is fuelling politics of fear, and attempts to close off moral circles. Conflicts are on the rise. Meanwhile we are heating up the biosphere, destroying habitats, and creating "party time" for contagious diseases. I hold it for likely that the coming generations will see hard times.

Historically, climate change events have fuelled evolution. The year 3000 is forty generations away, giving us time to rebound from current crises, and perhaps see new flourishing with lower population numbers in what David Attenborough would call a "re-wilded" biosphere.

The recent increase of transparency due to the Web and social media allows us to have moral emotions about anyone, anywhere. This causes turmoil today, but may eventually end up leaving us more peaceful. I use whales and dolphins as an example of the way our sociality might be moving in the long run.

For now, our job is to work for the coming generations because it is necessary, and to be optimistic because it is both contagious and helpful.

Literature with *3000: An Earth Odyssey*

n.b. All **pictures** were taken by Gert Jan Hofstede, who holds the copyright.

Slide 1 3000: An Earth Odyssey. David Attenborough pleads for re-wilding in his recent book [1].

Slide 2 Stories. Sociality and storytelling as quintessentially human is well articulated by Yuval Noah Harari in his book Sapiens [2], and the accessible version [3]. The story I am telling in this lecture is heavily inspired by the concepts of status, power and reference groups by T.D. Kemper. Status-power theory of relations is the core of Kemper's 1978 book [4]. Reference groups (that whisper to us who we are) appear in his later works [5, 6]. Kemper wrote his last book after having attended a NIAS/Lorentz

workshop about computational social simulation of the gender gap on my invitation in 2014. It is eminently suitable as a source of inspiration for artificial sociality.

The idea that many things in society (such as money, countries, titles…) only exist as long as groups of people believe in them, has been coined in 1895 by Émile Durkheim, the founder of sociology [7]. He called these "social facts".

Slide 3 Sociality. For through-referencing to the many sources of my work on artificial sociality: [8]. About GRASP specifically:[9, 10]. For Haidt, morality and the hive switch:[11]. About the homeostasis imperative for continuity of life: [12]. Our blindness to our own sociality is well articulated by [13].

Slide 4 Group. Some of these acronyms led to publications that you can search looking for them, together with my name.

Slide 5 Moral Circle. The term was introduced by the nineteenth century Irish historian William Lecky, then made popular by philosopher Peter Singer [14]. I introduce the concept of a moral circle in a specific sense in [15]. It is defined there as a group of people, ranging from a few to all people in the world, expecting to live by shared moral standards. These are often implicit, but adhering to them is crucial.

Slide 6 Affiliation. Turner argues that humans need emotions for assessing trustworthiness of all the strangers they have to relate to, in [16].

Side 7 Status. The concept of status and power are based on the works of Kemper: [4-6]. An evolutionary treatment of what the Beatles call "something" (status-worthiness) is presented by ornithologist Richard Prum, who also discusses our species, in [17].

Slide 8 Power. Also based on Kemper (ibid.). The display is from a PC front.

Slide 9 Collective power. Durkheim had coined "collective effervescence". Kemper [6] comments. Haidt coined the "hive switch" in our nature [11].

Slide 10 Rituals. I discussed the modelling of ritual in [18]. The article contains numerous pointers to further literature.

Slide 11 Four modes of Sociality. The four modes of sociality are based on the seminal article by Alan Page Fiske: [19]. Fiske had spent years in West Africa as a young anthropologist, that led to his revolutionary insight. An agent-based model showing the modes in action in a simulated population is described in [20].

Slide 12 Culture. Many people know the theory presented in [21], known as the "Hofstede 6D model of culture". The slide refers to two of the six dimensions.

Slide 13-15 Sociality across cultures. The figure is adapted from [22].

Slide 18-19 20th century. The Beugelsdijk - Welzel reference is to their major cross-generational study on World Values Survey data [23]. You can read about my 2022 Rhine ride here: https://geerthofstede.com/a-ride-along-the-rhine/

Slide 20-21 21th-30th century. The Turchin reference about multi-generational waves in societies is to [24]. Ibn Khaldun is briefly discussed in [21]. His concept of "asabiyyah", that degrades across generations under luxury, can be understood, in Kemperian terms, as the sum total of all status conferrals in a population minus all power moves. Human evolution under climate change is amply discussed in [25]. The increasing prevalence of trade over war throughout history is discussed by father and son McNeill in [26]. It is also treated by Pinker in [27]. Projections of global climate change until 2500 appear in [28], showing that unless we take quick action, temperatures will continue to rise after 2100.

Slide 22 Whales. The rich symbolic cultures of whales and dolphins are introduced in a wonderful book by Whitehead and Rendell: [29].

Slide 23 What can modellers do. The concept of consilience was proposed as a guiding one for science by E.O. Wilson, in [30]. The relational nature of human decision-making is argued in [31]. The merits of various theories on decision-making for making sense of farmers' crop choices – applicable more widely - are discussed by my PhD student Margaret Githinji in [32].

I created a number of agent-based models that can serve as sources of inspiration for modelling sociality. On COMSES.net's OpenABM library you can find under "Hofstede":

- *The Friendship Field.* A model on friendship formation among students done by two students in my course. It models extraversion, resemblance and (Kemperian) status.
- *Gregarious Behaviour, Human Colonization and Social Differentiation*. On the colonization history of a Caribbean island, part of the PhD work of Sebastian Fajardo. Operationalizes gregariousness: tendency to want to live together.
- *Policies to reconnect a city and the countryside.* By Tim Verwaart and myself. Spatio-temporal institutional dynamics across decades of the economy of the province of Noord-Brabant, the heartland of Dutch pig husbandry. Uses economic data. Operationalizes norms. Includes politics and lobbying. Shows great sensitivity to policy.
- *Feeding and social interaction among pigs*. From Iris Boumans' PhD project. Models feeding behaviour of commercially housed pigs. They can compete for food and maintain a status hierarchy. Includes physiology.
- *Tail biting behaviour in pigs.* By Iris Boumans. Frustrated pigs can start to chew on one another's tails. This is a damaging behaviour in impoverished pens.
- *The Status Arena.* My model about the emergence of gender differences, from my NIAS-Lorentz fellowship, with Jillian Student and Mark Kramer. It shows Kemperian status-power dynamics on a playground, resulting in a status landscape with potentially a gender status gap. Causal factors at one or more of three levels: 1) individual (status worthiness: beauty; status conferral: kindness; power), 2) binary relationship (rough-and-tumble; has-been-nice), 3) prior popularity (status). Cultural unwritten rule: acceptability of fighting. Shows that depending on culture, different properties lead to popularity.
- *GRASP world.* My sandbox model of GRASP, though the rituals are minimal so perhaps it should be GASP. Conceptually simplified compared to The Status Arena. Agents decide to leave their group for a random new group when frustrated and if unwritten rules allow it. This leads to emergent group dynamics reminiscent of political dynamics in countries. Operationalizes individualism, power distance and xenophobia.

Slide 25 What can we all do. Matt Ridley's optimistic book about how many good things happen, but do not draw attention, is [33].

For questions or remarks, you can try contacting me at gertjan.hofstede@wur.nl

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