BENEFIT-RISK COMMUNICATION AT CORONA: ASPECTS OF OPTIMIZATION
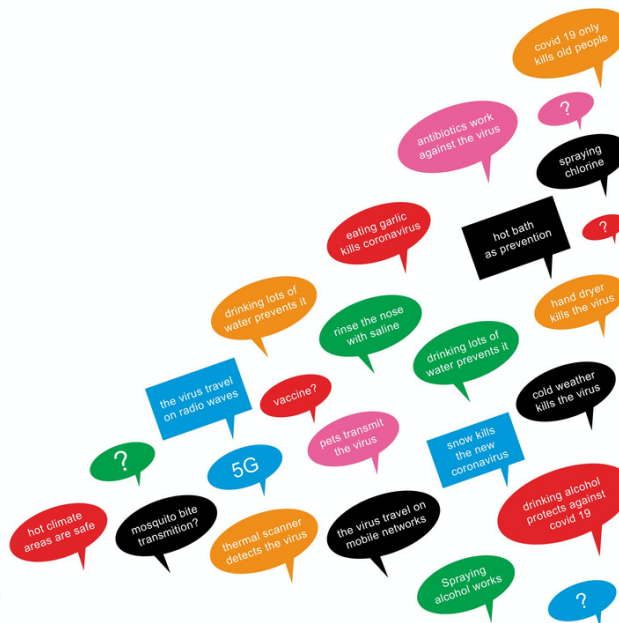
PROPOSAL FOR AND REPORT FROM AN INTERDISCIPLINARY VIDEO MEETING

BCSSS

Content

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Misinformation spreads fasters than COVID - 19
and could cost thousands of lives during the pandemic.
Think before sharing it.

PREFACE

Fundamentally, it is in question how a knowledge society can overcome its breaking points of consensus, not only on climate change, but now again on the topic of corona. Science (so also medicine) as a source of knowledge is institutional skepticism and essentially built on discourses of critical rationality, on logic and empiricism etc. (Vienna Circle; Sigmund 2017 [1]), but it also has a social responsibility and must represent an ethos for societal truth production. In addition, it must be aware of its own societal context as condition of truth production.

There are questions for the empirical social sciences: How can science reach the doubters, deniers, and opponents of scientifically recommended behaviors, such as mRNA vaccination through mass media (when political conformism is also evident)?

Several global questions arise on the macro-social and population level:

How do these groups argue, and what different factors determine non-adherence; what can we learn from population studies? How do stable trust, acceptance, and adherence emerge among recipients? But how can science communicate the necessary residual doubt of its knowledge to these groups, who perceive these doubts as confirmation of their fears? Or should it then engage in risk-bagatellization and pursue consistency via message control, and even marginalize dissenting medical experts?

Also, on the micro-level of health-related benefit-risk communication some questions have to be answered:

How are text-image-number relations designed? Should numbers (and/or their spread (e.g., prediction intervals in forecasts) be omitted? What is the utility of the of the effective reproductive number, Rt? Who understands "95% protection", and if so, how? Which media impact studies support this?

Examples from vaccination communication in recent months - from voluntary to coercive-vaccination - also show that certain recommendations of optimal health communication seem virtually impossible to be implemented in practice (EbM Network [2], WHO 2013 [3], Public Health Covid 19 2020 [4], Harding Center for Risk Literacy 2020 [5], Österreichische Plattform Gesundheitskompetenz 2020 [6], Medizin Transparent 2020 [7], etc.). For more in-depth discussions of this problem area, reference can also be made to Addiction Prevention and the general tradition of risk communication and risk management.

With these aims, the Bertalanffy Center organized an Austrian-German video conference on February 1st 2021.

INTRODUCTION TO THE MEETING: COMMUNICATION AS A SYSTEM OF SYSTEMS

For discussion of focal themes, a framing is useful. With regards to analysis of communication the reference to systems science is useful. In this context, communication can be analyzed on two levels: (1) on the macro-level of the society and (2) on the micro-level of interpersonal interaction.

1) The macro-level:

The circular cascade of information about Corona and its distribution in the population is to be minded: epidemic / pandemic information is obtained by science and is communicated to politics and media who feed back to the population. Population changes its behavior and science obtains new information about the pandemic etc. This circle of communication is the basis of societal regulation of the Covid problem. It consists of four subsystems (Fig. 1):

1. *Politics:* It works as a major framer of societal communication and action, also in case of corona pandemics. It is driven by power motives and own fears (loss of power in case of mistakes). With these aims politics intends "message control" with exclusion of non-conformists who are distinguished by largely unknown criteria. The consecutive systemic escalatory interaction between politics and these groups leads to their marginalization till more or less explicit criminalization of these dissenters. This medium-term polarization operates systemically like this: the more A suppresses, the more B opposes, the more B opposes, the more A suppresses etc.

2. *Medical Science as communicator:* Science in modern societies according to the study of science should have maximal autonomy (constitutional guarantee for freedom of science). In consequence, the selection of scientists for political advice should not be determined by political conformity of those scientists. There should be a heterogeneity of views, but also persons with knowledge-bridging competence, not only specialists. One should be aware that "knowledge" is only a "justified true belief", and that so called "facts" are only well confirmed data that could be falsified sooner or later, even if "fact checker" suggest to know the truth. The awareness of residual unsafety of current scientific knowledge is typical and implicates progress in science (Popper 1959 [8], Kuhn 1962 [9], Knorr-Cetina 1981 [10], Latour 1987 [11], Bunge 1998 [12], Kitcher 2011 [13], Cartwright & Hardie 2012 [14]). Also, the self-reflection of science regarding societal context is rarely discussed in times covid-19 (DFG 2019). [15]

3. *Media:* They operate based on intrinsic self-logics of increasing attention in information space. In context of communication of science, they are mediators of scientific information but media themselves are powerful self-determined communicators for their recipients. Media need quality control regarding scientificity of arguments and regarding the simplification of scientific information but avoiding a "trivialization spiral": The more simple the message, the more simple is the expectation of the recipient, and the more simple the expectations are, the more simple become the messages! This is a counterproductive moment in the humanistic development of educated citizens. Also, the prevailing design of media productions to present and report topics in a so called pro-contra-dramaturgy reinforces the dynamics of polarization of public opinions. Although this design intends to democratize discourses by presenting both perspectives on any given topic, it also suggests that both perspectives are equal in their validity, which may not be the case, if one is a research-based fact and the other is just an unelaborated everyday opinion

4. *Population:* The stratification of the population regarding knowledge (education), fears, skepticism, and age, gender, class, milieus (e.g., SINUS stratification) is important to be considered in analysis of "good" media activity and regarding effects on "lateral thinkers."

INTRODUCTION TO THE MEETING:
COMMUNICATION AS A SYSTEM OF SYSTEMS

These societal subsystems have a certain network of interrelations of reciprocal expectations and dependencies that shape the respective process of communication as an information flow (stippled lines with double arrows in Fig. 1). For instance, politics is interested in "message control" in order to present a homogenous image of the Covid situation. This is good in emergency situations as it was in Europe in spring 2020, but one year later it seems to be contra-productive and enforcing distrust.
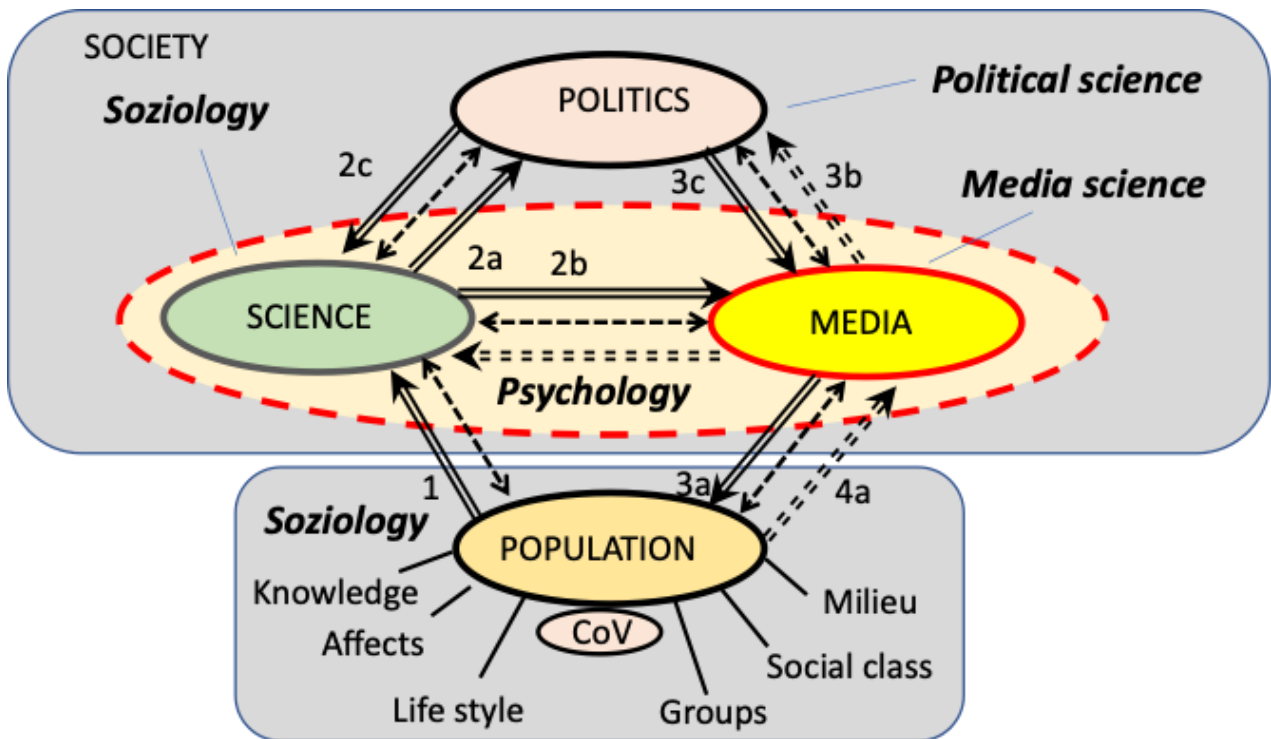

Fig. 1: Macro-social model of societal communication via mass media (and Social media) in case of Corona

Figure 1 is conceptualized by sociological systems theory, political science and media/ communication research:
Information (data) about the infection rate of the population by the Covid virus that is acquired by science (1a, arrow with double line), is communicated by science to politics (2a, e.g., by public health administration) and to mass media (2b). Mass media obtain information from politics (3a) and ask politics for official information (3b). In consequence, mass media inform the population (3a), some of them ask the media for further information (4a). For analytical reasons, the population must be differentiated according to their properties and conditions of affiliation to certain milieus, social class, groups etc. and to their lifestyle, affectual and knowledge level etc. This is subject to empirical sociology / social science.

INTRODUCTION TO THE MEETING:
COMMUNICATION AS A SYSTEM OF SYSTEMS

2) *The micro-level:*

Much knowledge about communication processes was gathered on the interpersonal micro-level, mainly by influential psychologists / communication theorists such as Karl Bühler (Bühler 1934 /1990 [16]) Paul Watzlawick, Gregory Bateson and Friedemann Schultz von Thun who can be seen as founders of psychological communication theory. Some issues are selected here briefly:

The communicator sends information about a theme via a medium to the recipient. These components are in a systemic relation to other aspects: there is a difference between intuitive experience of the recipient versus the scientific systematic exploration of the epistemic object of so-called reality like "health of the population" as the reference object of communication. The factual information that is represented by the medium has some degree of "truth" and in case of Corona pandemic has to be modified while after while: after approval of vaccinations the "old normality" could return, but new mutants are new drivers of the dynamic.

Sending this information by the communicator is modulated by her internal conditions such as motives, empathy, and competence, and in addition, the image of the recipient in the mind of the communicator also shapes the medium. In consequence, the medium has a semantic dimension of self-reveal of the communicator, and also an appeal what the recipient should do. Finally, the media design is influenced by the implicit information how the communicator defines his relationship to the recipient (I am the owner of knowledge). Depending on these factors, the recipient could develop anxieties or trust.
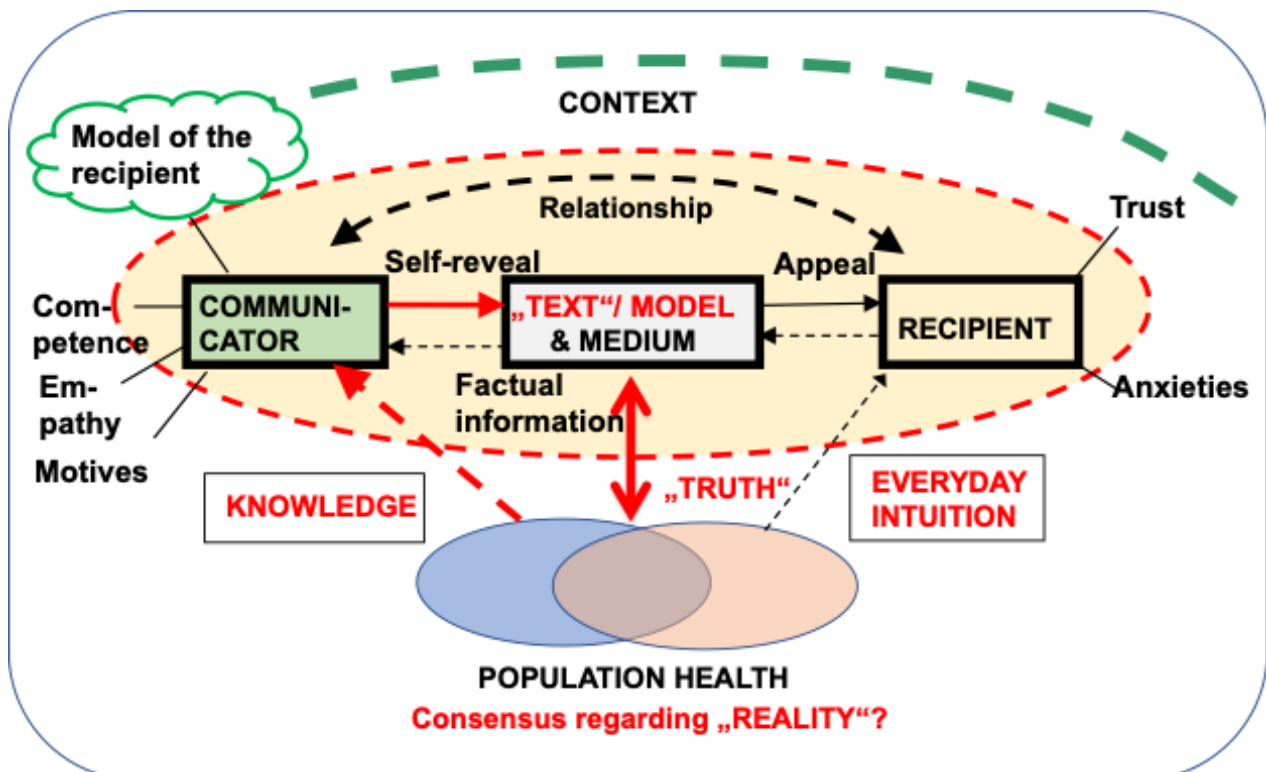
Fig. 2: Micro-level of communication.

THE CONTRIBUTIONS

Barbara PRAINSACK (Inst. f. Political Science, Univ. Vienna) gave a talk on population studies on attitudes to corona politics. She called for greater consideration of qualitative social research in order to more accurately identify the significance of the interrelationships of opinions. She described results of a country comparison study focusing on Austria: the time courses of the population's assessment of the Corona policy from spring 2020 to December 2020. It became clear that the Corona measures had been experienced as a relief in spring, probably because the individual willingness to submit to the measures at that time became the general rule. The assessment of the policy was generally very good. But in summer, inconsistencies in the rules and regulations were increasingly a source of dissatisfaction, and a polarization of opinions on approval and rejection of the measures became apparent in autumn. There was no difference between socioeconomic strata on the question of whether burdens and obligations should be distributed more fairly (fairness question). This also applies to the assessment of general prevention measures. Polarization on the vaccination question among those willing to vaccinate compared to those refusing it increased by the end of the year. The extent to which false reports (e.g., the virus is a bioweapon) where accepted also was examined. In general, science regained more prominence for guidance of management of public life. In summary, from a political science perspective, there were signs that there was a crisis for governance, with declining support for government, but not a crisis for democracy.

Sources:

Corona Panel Study: https://viecer.univie.ac.at/coronapanel/

"Solidarity in Times of a Pandemic"-Studie (9 countries): https://digigov.univie.ac.at/solidarity-in-times-of-a-pandemic-solpan/solpan-blog-deutsch/

https://digigov.univie.ac.at/solidarity-in-times-of-a-pandemic-solpan/solpan-blog-english/

Philip MANOW (Research Center Disparity and Social politics; SOCIUM, Univ. Bremen) discussed the relations of the triangle consisting of politics, media and population with a focus on the influence of new media on the public opinion: A qualitative analysis of democratic politics suggests that the new media are bringing about a lasting structural change in the public sphere. In this way, there is an increasing lack of intermediary instances that provide a pre-structuring of social issues as a kind of quality assurance of information.

For example, information from science or politics remains present in public discussion for a shorter time than before. The current extreme increase in pluralism of opinion is irrefutable and can be traced back to a trend toward lay expertise, in which details are discussed extensively without an overarching understanding. As a result, the overview of what is important is lost. Self-reinforcement mechanisms are also increasingly occurring in the formation of opinion by social media, and so a cross-regulatory public opinion can also emerge. Science is used in this process to legitimize opinions by both sides. In this way, politics might also shift from legitimation by majority, which is hardly identifiable anymore, to truth as legitimation for political action. There is also a process of reversal, that truth relies on the majority in so far as, for example, science itself, due to its inner logic, will increasingly be directed towards a social "outreach" or "impact" as a quality feature, since sponsors have to be won over. Truth, then, also needs a majority, thus completing the circle.

With regard to the management of the Corona pandemic, the population expects policy to take into account their differential situation, which is hardly possible. But when this happens, there is talk of "discrimination" by some population groups who detect disadvantages for them. In this case, policy makers can refer to "the" science, or they can order a general lockdown with as little differentiation as possible, which does not cause an experience of discrimination, but the image of general fairness of the measures (ZEIT: "Unfreedom for all"). Following this logic, even necessary cohort studies are currently neither required nor encouraged. The emerging asymmetry of information is also problematic. For example, the fixation on incidence figures as a control variable, while practical, is - regardless of some severe theoretical deficiencies - problematic insofar as probably only 12% of cases can be followed up, even according to the latest data. Currently, the overall situation with regard to Corona is also critical because the vaccination, on which many hopes are based, is unexpectedly slow in implementation. In this context, it must also be criticized that the advice given to policy makers has predominantly been given by natural scientists and almost not by social scientists, who understand the behavior of collectives better than mathematicians and physicists alone.

THE CONTRIBUTIONS

Finally, the demarcation between science and "Aluminum hats" must be made clear.

Holger PFAFF (Institute for Medical Sociology, Supply research and rehabilitation science, Univ. Köln) focused on the knowledge conditions of medical science. He put forward seven theses on the collective knowledge situation in the Corona crisis:

1. Groupthink has now regained importance. It is about a normatively guaranteed consensus and a group leader.
2. There would be a return of the experts. The experts had increasingly appeared to be superfluous in the context of evidence-based medicine due to the rise of both, Big data and complexity research. Now, theory and experiential knowledge is also in demand alongside quantitative-empirical knowledge, although there is not yet an explicit demand for it.
3. The single loop learning dominates. There is a lack of a debate culture in which the implicit assumptions of argumentation are also reflected.
4. The virus is not only a purely biological problem. It is also interesting linguistically to note that non-pharmacological interventions (NPIs) are mentioned instead of behavioral regulation.
5. The clash of the material world with the immaterial world. This difference becomes more evident again, for example by the gaps between the natural and social sciences.
6. The machine model dominates again. This implicit assumption of politics (and public opinion) means the idea that conditions can be regulated by a push of a button. This corresponds well with lay theories, but it does not fit to human beings, who are spontaneously acting, creative and self-organizing beings and want to be so.
7. The social sciences could lead to a more effective pandemic policy. This thesis is based on the fact that they understand the functioning of people in the collective better than the natural sciences.

Alfred UHL (GOEG & Sigmund Freud Univ., Vienna) [17] criticized the idea that we live in a new "post-factual epoch" – claiming there was never anything like a "factual epoch". He criticized that the way scientific results are usually presented as certain and final truth, instead of admitting that they are the result of a rational synthesis built on more or less well substantiated facts, experiences and values. Different scientists usually arrive at different results.

These results must be compared and analyzed in an open-minded critical and rational manner, to improve the current state of knowledge. An enormous problem in science is statistical illiteracy manifesting in many scientific publications and popular presentation of science [18]. Examples are e.g., the correlation of life expectancy and per capita alcohol use being interpreted causally or calculating the average initiation age into alcohol use, which is logically not possible due to having censored data. It is typical for the human nature to try to support one's own convictions by selectively looking for helpful conclusions and evidence instead of trying to critically question the basis of one's any conclusion.

In surveys we need to realize that we transport information by asking questions, that way determining the results, and that many questions and answers we are confronted with in the everyday world and in science are ambiguous or make little sense, if we critical scrutinize them [19]. In order to impact on the public, scientists have to be trustworthy and need to admit ambiguities and uncertainty, but this attitude can unfortunately also be used by others to undermine the reputation of honest and humble researcher [20]. Finally, it is ambiguous to criticize science with the intention to improve procedures and interpretations publicly. Comprehensibly criticizing research results plays into the hands of those who do not believe in science at all and hardly impresses scientists, who need to create a competent image, and have little time for analyzing the assumptions and heuristics they work on.

Bernd KERSCHNER (Medizintransparent, Cochrane Center, Austria, Donau Univ., Krems) reported on the criteria of good public health information with the aim of informing the population so that they can decide for themselves. As a reference for information design serves the "Good Practice Health Information", "Good Health Information Austria" and criteria of the "Network Evidence-Based Medicine", as well as the "Harding Center for Risk Literacy". According to these guidelines, for instance quantified results of responders to vaccination should be presented in a way that they are comparable with the figures of the placebo group. If possible, for purposes of comparison, figures should not only be given in percentages, but also by the absolute numbers, which in addition should be presented with reference numbers (e.g., related to 100,000 of the population).

THE CONTRIBUTIONS

The presentation of the scatter width, i.e., the confidence intervals, which strictly speaking only indicate the width within which the "true value" lies and not the scatter width of the measured figures, as one would intuitively assume, is problematic. It is also suggested that no recommendations are made by the numbers alone, but - if necessary - only those that come from reliable and possibly official sources. A problem is the final justification, insofar as the results can never be finally proven as well as the opposite can never be completely excluded.

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https://www.medizin-transparent.at

Perspective

Several questions that were raised in the meeting will be analyzed deeper in a next meeting.

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