Theoretical Approaches of Health Campaigns and Practical Applications to COVID-19 Campaigns

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Abstract: Public communication campaigns are the focus of this contribution, especially in the field of health, that fulfill an important function in today's civic society by informing the public about risky behaviors like AIDS, tobacco, alcohol, drug abuse, obesity or currently in the field of COVID-19. In addition they are stimulating preventive behavior in domains like increasing physical activity, healthier nutrition or keeping distance because of COVID-19, but also in areas like traffic safety or environmental protection. But they also try to alter non-healthy risk behaviors like smoking or too much drinking. Especially the COVID-19 pandemic since early 2020 hit the health systems of all countries hard and almost all health ministries or departments of public health started to develop and implement COVID-19 communication campaigns together with technical and legal interventions like vaccination. Based on a system model with focus on problem analysis, definition of goals, selection of target groups, development of campaign messages, and empirical campaign evaluation, it is the goal of this contribution to focus on public health campaigns and its underlying theoretical perspectives like information seeking, cognitive dissonance theory, activation and entertainment-education, social cognitive theory, persuasion research or approaches from health sciences. Based on this background of relevant communication theories, the contribution is asking: What have we learned from theory to optimize health campaigns and especially COVID-19 campaigns?

Keywords: COVID-19, Health Campaigns, Theoretical Approaches, Practical Applications

1. Introduction

In the last 30 years, health communication as a field of social research became more and more important in communication science [14]. Several *handbooks* have been published in the US [6, 44, 52, 61, 81, 93, 104] or in Germany [42, 54, 89, 92], and *specialized journals* have been established like "Health Communication" in 1989 or the "Journal of Health Communication" in 1996. And this holds true especially for health communication campaigns with a broad range of topics like AIDS awareness, stop cigarette smoking, against alcohol drinking and drug abuse, or improve traffic safety [15, 16, 82, 84, 91, 117].

Purposeful and goal directed media campaigns with health-related messages targeted at especially segmented (risk) groups have been more or less successful [4, 50], but sometimes even dysfunctional [22] in raising awareness and promoting new health behaviors or altering established risk behaviors. So it is not surprising, that there have been contrary opinions in

social science about the effectiveness of communication campaigns: Herbert Hyman and Paul Sheatsley (1947) represent the *pessimistic position*, arguing early in their article *"Some Reasons Why Information Campaigns Fail"* that social-psychological barriers like a segment of "Chronic Know-Nothing's" together with processes of selective exposure and selective interpretation are impeding campaign success [55]. But in 1973 Harald Mendelson argued in his contribution *"Some Reasons Why Information Campaigns Can Succeed"* that the failure of most campaigns should not be attributed to social-psychological mechanisms of target groups but to the producers of campaigns, e.g. by not reaching the target group because of a lack of reach or messages not well tailored to the target group [67].

Based on *meta-analyses* of hundreds of evaluated campaigns [4, 28, 100, 101], today there is a consensus among experts in the field that public communication campaigns are at least moderately effective. Mediating third factors that enhance effects are: greater reach of campaigns, new

information for target groups, messages explicitly mentioning enforcement of sanctions, and propagating new behavior instead of trying to alter existing behavior.

Guided by a wide variety of *theoretical approaches* from communication science, social marketing, and public health, together with a large body of empirical evaluations, planners of health communication campaigns are now able to segment and address problem-oriented target groups, to develop successful strategies of change, to construct and tailor effective messages, and to select appropriate mass media channels like the Internet [9, 112] or Social Media [64, 95, 102]. And several *application based overviews* have been published [16, 25, 34, 35, 65, 87, 93].

2. Public Health Campaigns

How are public communication campaigns defined? And how are they distinguished inwardly from other forms of communication and outwards from other problem-solving strategies? – There exist plentiful definitions [e.g. 16 or 82]. One of the first was formulated by Everett M. Rogers and J. Douglas Storey (1987: 818) [84], citing earlier campaign definitions, and summarizing that campaigns are a "preplanned set of communication activities … using a particular type of message … for a short period … [that] almost always use a multi-media approach." Most definitions of public communication campaigns – for the public, in public space, and in the public interest – include the following elements: a) design, implementation, monitoring, and evaluation of b) systematic and purposeful, c) intensive but limited in time, d) communication attempts, e) to inform, persuade and/or motivate behavior changes f) in well-defined audiences, g) concerning social ideas, purposes, or practices, h) namely in a positive and socially desirable way.

Especially *health prevention campaigns* have to be differentiated into two types according to the following diverging goals: a) *Primary prevention campaigns,* e.g. to promote physical activity or healthy eating, are directed to the causes of a possible future health problem, and its positive goals are to avoid future risks and dangers in the sense of *"towards healthier behavior"*. This holds true especially for the current COVID-19 campaigns that promote in most cases how to behave in order to avoid being infected. b) Whereas *tertiary prevention campaigns* address the undesirable consequences of an existing behavior, e.g. cigarette smoking or alcohol abuse, by *avoidance goals* and/or after a disease in the sense of *"away from health problems", e.g.* by getting tested of COVID-19.

External Distinctions. Public communication campaigns by paid and free mass media, and recently also in the Internet and by Social Media, as a *communicative strategy* to control and solve health but as well a wide range of social problems like COVID-19 infection, have steadily increased since the 1980s. Before, namely in the 1970s, *technical and legal solutions* dominated, followed by *economic strategies* based on financial incentives or taxes. To give a few examples: a) *Technical solutions* of health problems include e.g. condom

use against AIDS or contact tracing apps and vaccination against COVID-19, b) *legal solutions* incorporate smoke-free zones, no alcohol selling to adolescents or shutdown of restaurants in times of COVID-19, whereas c) *economic strategies* include e.g. taxes for cigarettes or complimentary COVID-19 tests. d) And *communicative strategies* use media channels like billboards, leaflets, websites or YouTube videos, sensitizing about getting AIDS, informing about cigarette smoking or stimulating behavior help stopping the spread of COVID-19. Although communication is necessary for solving societal problems, it is usually not sufficient and should be supplemented by technical, legal, economic strategies.

This holds true especially for today's COVID-19 pandemic. A comparative overview of all these governmental strategies to manage the COVID-19 crisis in 21 countries by Meijer & Webster (2020) [66] summarizes six mostly used communicative strategies: 1) management of information for crisis management, 2) publishing public information for citizens, 3) providing digital services to citizens, 4) monitoring citizens in public space, 5) facilitating information exchange between citizens, and 6) developing innovative responses to COVID-19.

Internal Distinctions. In addition, public communication campaigns have to be distinguished from other types of communicative strategies [116] like a) *advertising and marketing* for commercial products, and b) *public relations* for commercial or non-profit organizations as *image-campaigns* that intend to enhance the appearance of an organization. *Issue-campaigns* in contrast communicate topics like public communication campaigns, not in the public interest but mostly in the concern of its principal, e.g. the British American Tobacco Industry communicating 2005 in Germany that they would respect the protection of young people. c) *Mass media* also inform the public about new campaigns and generally support its goals, but the media reporting, e.g. of governmental strategies against COVID-19, is not done in the same systematic way by underlying explicit goals and intending to influence its publics like public communication campaigns. And media coverage is criticized to give false information primarily by Corona liars. As a consequence, reliable information is vital for designing and implementing preventive health awareness in the fight against COVID-19 [68].

## 3. Process and System Models of Communication Campaigns

There are process and system models of communication campaigns. *Process models* focus on the different process stages of a campaign like the so called *"health wheel"* or *"public health action cycle"*: definition of the problem → formulation of a strategy → implementation & realization → identification of its effectiveness by evaluation. S*ystem models* incorporate similar elements but integrate them und focus more on the interrelations between the different elements of a campaign: see Figure 1.

1) *Campaign Input*. The system model by Bonfadelli &

Friemel (2020: 33) [16] starts with the *input of a campaign* by an existing social problem in a society and its affected parties. The concrete problem like the spread of the COVID-19 pandemic must be recognized and assessed as severe by the involved stakeholders from politics, together with the epidemiologists as medical experts. If the underlying values, the goals of the campaign, the collective benefits or the chosen message strategy are contested, a campaign success is often unlikely [91]. *Threats* are possible so far, as there exists dissent between the campaign planning organization and the involved stakeholders. It is also problematic, if campaign planners overestimate the existing level of consensus. In 2020 at the beginning of the spread of the COVID-19 virus, there was almost no public critique of the rapidly planned and implemented COVID-19 campaigns. More controversially discussed were the diverse technical and legal measures by the various governments, e.g. the shot down of restaurants, and in 2021 the ongoing discussion about mandatory vaccination, stimulating public protests by vaccination opponents.

2) The *problem underlying a campaign,* like the COVID-19 pandemic, should be analyzed theory-oriented in a systematic way and based on empirical data by document analysis and explorative research, explaining underlying key factors. Threats exist if the problem analysis is biased, insofar as the perspective of the health organization dominates or if only an individual level is used, and structural constraints are neglected. In the case of COVID-19, main questions are: What are the most important factors that influence the spread of the virus? And what measures are best able to inhibit its societal diffusion?
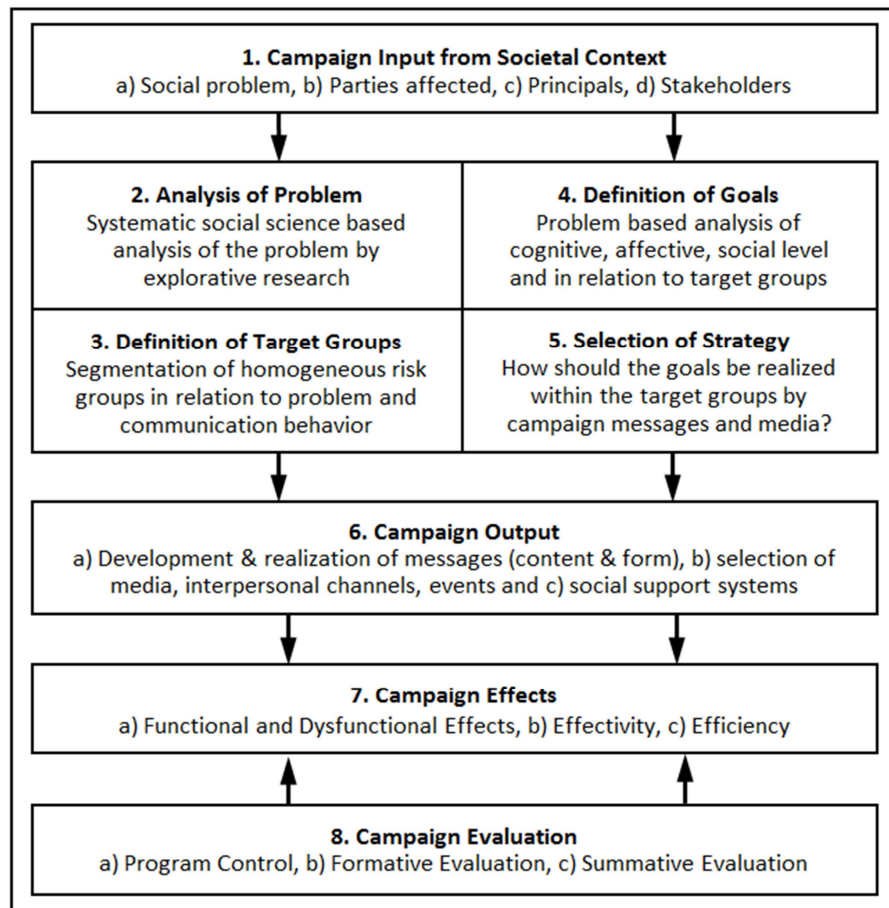
Source: Bonfadelli & Friemel 2020: 33 [16].

Figure 1. System Model of Communication Campaigns.

3) The *determination of the target group* has to be based on a homogeneous segmentation of the involved risk groups according to its problem and the corresponding communication behaviors [99]. Target groups should not only be defined by demographic indicators but in relation to lifestyles, types of risky behaviors and media usage pattern. Threats exist if there are no explicit defined target groups. In the case of COVID-19, the whole population and especially older people seem to be target groups in most countries. Only in a later phase, younger people as possible target group have been discussed as well.

4) *Definition of campaign goals* should be formulated in an explicit way on the cognitive, affective and social level

of the relevant target group. Campaign goals should be defined explicitly and linked to specific behaviors. Furthermore, goals should be formulated in a positive way and should positively stress gratifications as opposed to sanctions like fear. *Threats* exist if the behavioral possibilities of the target group are overestimated or if there is a conflict between campaign goals and the social norms and cultural values of the target group. In the case of COVID-19, campaign goals have been defined mostly on the level of the concrete behavior of people.

5) *Selection of an optimal strategy* should permit the realization of the campaign goals by the chosen messages within the target group. *Threats* exist if campaign messages are based on strong fear appeals that may result in a so-called *boomerang effect* [18] like selective interpretation or reactance in form of avoidance. In the case of the COVID-19 pandemic, almost all campaigns did not use fear appeals, but linked the proposed and positively assessed behavior by the campaigns mostly to the goal of recommended self-protection.

Figure 2. Campaign Output: Country-specific Posters of COVID-19 Campaigns in 2020.

Figure 3. Humorous and Person- / Expert-Centered Campaign Messages in 2021.

6) The *campaign output* consists of the development and realization of its *messages* on the one hand [21], and the selection of a mix of appropriate *media channels,* including the Internet [9, 112] and Social Media [64, 95, 102, 120], together with *interpersonal channels* [115], and *social support systems* like local communities or national institutions and policy [58]. *C*lear, simple and concrete messages that are based on common experiences but also contain doses of novel knowledge should be used, and campaign messages may incorporate emotional

elements like surprise and humor in the form of edu-tainment. Furthermore, a mix of mass media and inter-personal channels, supported by campaign related *media events*, are effective. Most COVID-19 campaigns in 2020 used an informative strategy with messages specifying proposed behaviors, displayed by pictograms (Figure 2). Emotionalization, e.g. by humor, or trustworthy persona-lized messages have been seldom even in 2021 (Figure 3). Similar to other campaigns, public posters and advertisements in newspapers are used as media channels

together with videos in television and YouTube. And almost daily media conferences by departments of health have been organized, to inform the public about the development of COVID-19 with further information on corresponding *websites* (e.g. in Germany: www.bundesgesundheitsministerium.de/ coronavirus.html or in Switzerland www.bag.admin.ch/bag/de/home/krankheiten/ausbrueche -epidemien-pandemien/aktuelle-ausbrueche-epidemien/n ovel-cov.html) or by WhatsApp-Information.

7) *Campaign effects* include both the intended functional effects, but as well possible non-intended dysfunctional effects. *Effectivity* means, how well the campaign reached its goals by the target group. *Efficiency* includes further the effectivity of a campaign in relation to its costs. – At the moment without available evaluation results, it can be said at least that the strong media coverage of the COVID-19 pandemic has increased media exposure and information seeking of most people in most countries, for Switzerland [47]. This is not surprising, since the corona pandemic was the leading topic in all media during 2020 and still in 2021.

8) *Evaluation of the campaign* [73, 93, 106] incorporates the control of the planning and realization phases of a campaign in form of *program control*, the *formative evaluation* of the production of the campaign messages, and the *summative evaluation* of its effects and efficacy. Campaigns should include empirically based evaluation as an integral part from the beginning of the planning process. Only on the basis of not only impact but as well formative evaluation, the effects of a campaign can be estimated, and the campaign's efficiency may be improved. Since COVID-19 health campaigns started only in 2020, results of evaluation research not have been published so far. But e.g. in Switzerland, the department of health is planning an evaluation [11]. Research questions will be the crisis preparation as process evaluation, and the usefulness and effectivity of the realized (communication) measures in form of a summative evaluation.

4. Media Effect Theories to Optimize Health and COVID-19 Campaigns

Whereas for a long time, communication campaigns have been developed and implemented by practitioners of advertising companies, today there is a consensus about the necessary and beneficial functions of *theory- and evidence-based* development of (health) campaigns [1, 5, 37, 38, 39, 72, 82, 88, 117]. Therefore, some of the theoretically relevant and most used perspectives in health campaigns are subsequently summarized and structured in a process-oriented way, starting with 1) campaign messages as input, followed by 2) exposure & use, 3) reception and 4) effects on cognition, attitudes, and behavior of target groups and differentiating between the *micro level* of single persons, and the *meso & macro level* of society (see Figure 4). The following objective is to analyze and illustrate, how these approaches have been used in COVID-19 health campaigns.
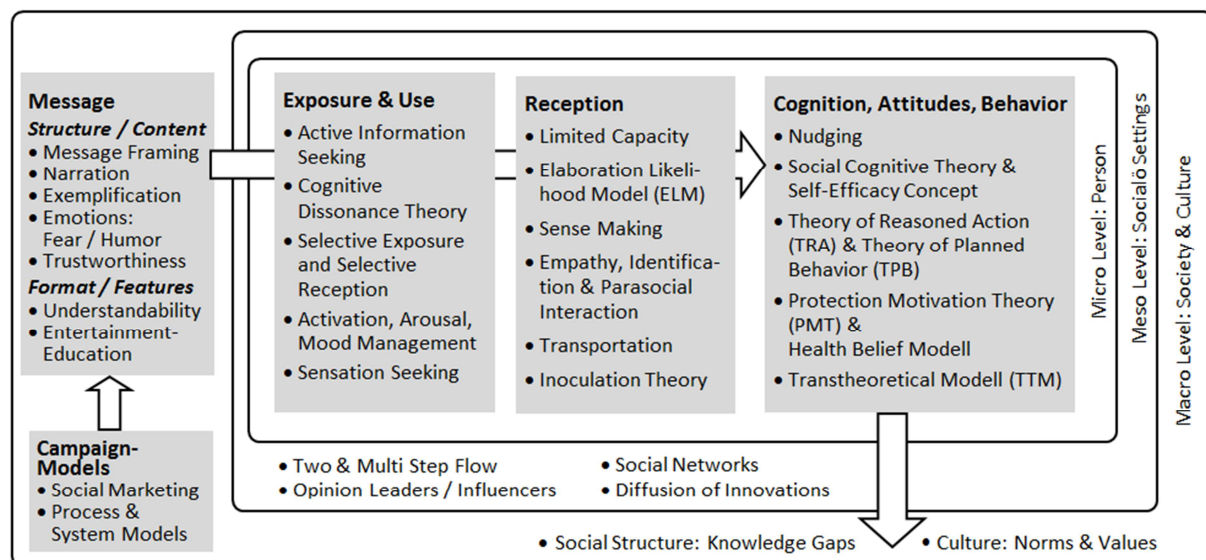
Source: Modified after Bonfadelli & Friemel 2020: 67 [16].

Figure 4. Relevant Communication Theories for Campaign Planning.

1) Campaign Messages as Input

Several theoretical concepts provide theory-based and evidence-based advice, how messages of campaigns can be conceptualized and realized to improve campaign effectiveness [21, 108]. These insights are mostly based on experimental designs, comparing the effects of messages, utilizing different contents, and applying varying formative aspects in the same campaign:

Message Framing. This approach, that differentiates between so called gain and loss frames, and used often by

health campaigns, is certainly most prominent [75, 79, 90]. Campaigns using gain-framed messages emphasize positive outcomes when an individual will behave according to the campaign goals, whereas loss-framed messages stress the negative consequences and costs for individuals not cooperating with the campaign goals. Kristel M. Gallagher and John A. Updegraff [43] summarize in their review, that "gain-framed messages were more likely than loss framed messages to encourage prevention behaviors, particularly for skin cancer prevention, smoking cessation, and physical activity." Interestingly COVID-19 campaign messages are mostly framed in a neutral-informative or even requesting way (see Figure 2) like "STAY HOME, SAVE LIVES" in the British campaign by the NHS or "No hand, no fist, no hug: always greet others from a distance" in the Swiss campaign by the Federal Office of Public Health (www.foph-coronavirus.ch) [see as well 29].

Narration, Exemplification by Testimonials, Celebrity Endorsement. The use of narratives is a basic mode in interpersonal but as well media communication and has been rapidly applied in health campaigns. Although the concept has not a shared understanding, it suggests that campaign messages use the form of a cohesive and coherent story by providing personalized information about characters in concrete scenes, often starting with an unresolved conflict and providing a resolution by the campaign message [51]. It is argued that target groups will learn and store campaign messages in the form of narrative exemplars easier in memory, if they are packed in a narrative story format, especially when the reception process is superficial. Narratives are often used in the form of exemplification [70] and as well with testimonials by celebrities or experts to appear trustworthy for their target groups that means, e.g. illustrating smoking cessation by concrete examples in a positive way that facilitates identification and will overcome resistance to persuasion [59, 124]. Or in the Swiss COVID-19 campaign, a medical doctor is telling in the poster: "I will let me vaccinate." (see Figure 3).

And the *Concept of Transportation* designates the reception process in which campaign stories as narratives are transported by the target groups into their own narrative world [46]. In 2021 the Federal Health Department BAG in Switzerland used posters displaying male and female physicians of a hospital as credible experts with the message: "I will let vaccinate me." Narratives are mostly used in COVID-19 YouTube videos like in the Swiss campaign, displaying a girl or a boy sneezing in the elbow or hand washing and vaccinating as exemplification of the desired behavior.

Emotions: Fear & Humor. The use of negatively framed fear appeals [69, 117, 123] dominated for a long time in health campaigns, e.g. against cigarette smoking. But today, positive emotions, e.g. in the form of humor [71], are recommended, not at least because strong fear appeals are often rejected for the reason of selective attention and interpretation to avoid cognitive dissonance. In contrast, positive emotions like humor, can attract attention, increase thrust in the communicator, and enhance acceptance of campaign

messages. But humor must be tested by formative evaluation because there is the risk, that it is misunderstood or may distract attention from the core message of a campaign. In addition, humor is culture relative. Humorous messages cannot simply be translated from one to another language, as the evaluation of health campaigns directed to the German, French or Italian part of Switzerland has indicated. Because of the serious Corona topic, humorous campaign messages are almost not used.

Entertainment-Education is a relative new concept and was first used in Latin American telenovelas to promote family planning, before being adopted globally [97, 98]. It is based on positive emotions in combination with narratives in entertainment formats, attracting target group attention, together with educating information [20]. In doing so, positive role models in soaps or telenovelas are used to transfer health information. A challenge for campaigns planners is to find and realize collaboration with television producers. But today's short health campaign videos on YouTube may be named entertainment-education as well. This also holds true for humorous Corona videos, that can be found on YouTube (e.g. www.youtube.com/watch?v=Mft6VGybfRc), see as well: [83].

To sum up for campaign practice, it can be asserted, that campaign messages should be short and coherent as possible, understood in the sense of the campaign goals, and institutions responsible for a campaign should be perceived as trustworthy.

2) Exposure to Campaign

Exposure to communication campaigns can happen by chance, e.g. if someone comes across a billboard in public space with a Corona message like "Wash your hands", or people are actively seeking Corona information like number of new Corona infections.

Active Information Seeking [111]. Although communication campaigns use so called push media to trigger the attention of a target group, people actively seeking campaign information are an important segment, namely as opinion leaders or influencers, that have the potential to diffuse the campaign messages to a wider range of public by interpersonal communication. The (risk) information seeking approach [5, 120] is analyzing a wide range of underlying factors, that explain why people at risk seek or avoid information. Matthias R. Hastall [49] is summarizing in his informational utility model relevant factors like perceived magnitude of threats and opportunities, perceived likelihood of being hit, perceived immediacy of their materialization, and perceived efficacy to influence the health threat or its outcome. Together as informational utility, these factors influence the selection of the messages used by a health campaign and should be considered in the process of campaign planning. It can be assumed, that anxious people who perceive a high threat and risk being hit by Corona will seek correspondent information actively, e.g. displayed by Corona campaigns.

Selective Exposure and Reception supplement the perspective of active information seeking by not focusing the influencing factors, but analyzing the way, how media and

campaign messages are selectively used and processed [94]. These processes are usually explained by "Cognitive Theories" like the "Dissonance Theory", first formulated by Leon Festinger in 1957 [36]. It explains the selective exposure, reception and interpretation of mass media and campaign messages in relation to the existing knowledge and opinions by a target group. If there will be a dissonance, e.g. between the own behavior – "I am smoking" – and the campaign message – "Smoking is dangerous for your health" –, there may emerge processes of reactance in the form of avoiding or distorted reception of the campaign messages to minimize possible dissonances. The "Cognitive Dissonance Theory" is an application of the more generalized social-psychological "Balance Theory", based on the presumption, that individuals try to maintain a balance in the cognitive system in relation to a topic and to other persons. Applied to COVID-19, it means that people attempt to get a balance between knowledge and emotions towards the Corona pandemic.

Activation, Arousal and Mood Management. Whereas the above discussed approaches analyze exposure and reception processes primarily from a cognitive perspective, the activation, arousal, and mood management perspectives focus and analyze emotional processes that are activated by campaign messages, e.g. by pictures [10]. One basic assumption is, that people use media to optimize mood through selective exposure. The goal is to get a balance between not too much stimulation, but not boredom as well. That means for campaign planners, that their messages should have a sensation value as well by incorporating emotional aspects, attracting the attention of the target group by eliciting sensory, affective and arousal responses [31, 48]. But interestingly, most Corona campaign messages seem to have a cognitive bias, and stimulating emotional elements are often missing.

3) Reception of Campaign

Limited Capacity and Elaboration Likelihood Model. Campaign planners must keep in mind the limited cognitive capacity of their target groups [62]. When people process campaign messages that are too long or too complex on the one hand, and their cognitive reception resources on the other hand are limited, this may detract the encoding, storage, and later retrieval of the campaign information. This holds true especially for target groups with low education and/or being in distracting reception situations. Petty & Cacioppo formulated in 1986 the *Elaboration Likelihood Model* [78]. It postulates two basic kinds of processing persuasive messages like the ones by health campaigns. The *central route* is activated in situations with high attention and/or high motivation, and campaign messages are processed based on issue-relevant thinking. The *peripheral route* instead is activated in situations with low motivation and/or low attention, and therefore the reception process is superficial and based on heuristics. That means, it is primarily influenced by peripheral cues like visuals, the communicator's prominence or apparent credibility. Although persuasive influences by campaigns can be achieved either through central or peripheral routes, the ELM states that central-route information processing is more

enduring over time, more resistant to counter-persuasion and more directive in relation to subsequent behavior [76]. Therefore planners of Corona campaigns should analyze by formative research, what kind of message processing will be dominant, and adapt correspondingly the campaign messages.

The Sense-Making Approach by Brenda Dervin is based on the assumption, that humans are not only passive receivers and learners of "objective" campaign messages as proposed by campaign planners, but make sense of the messages in active processes of *cognitive construction of meaning*. Successful campaign communication is, when a person finds some resonance about where she is and, hopefully, something useful about where she wants to go. This assumption has *methodological implications* [27], insofar campaign planners should ask questions to their target groups like: Where are they coming from? What are they struggling with? Will campaign messages be interpreted as supportive with regard to personal problems, resources and solutions or obstacles, especially for the individual sense making of the perceived risks by COVID-19.

Empathy, Identification and Parasocial Interaction. These concepts have been developed to analyze the reception processes of television characters, but they are helpful as well, by explaining how persons of the target group of a (health) campaign may respond to a figure in a campaign video, take it as symbolic role model, develop identification with it and react in the form of "Parasocial Interaction".

Inoculation Theory was developed by William McGuire in 1964. He named his resistance model with a medical analogy, noting how inoculation to persuasion parallels medical inoculation [24]. The prototype inoculation treatment operates with two-sided messages, that in contrast to an only one-sided supportive persuasion message is added with counter-arguments or arguments that challenge the existing arguments. It has been shown, that these refutational treatments were superior in conferring resistance to later persuasive challenges. The theory may be applied as preventive strategy in health communication, e.g. by inoculation-informed anti-smoking or anti-alcohol use arguments, trying to make young people resistant against cigarette or alcohol advertising [45]. Its application to the Corona pandemic would be useful by stimulating resistance to the persuasion strategies of people denying Corona risks and refusing correspondent orders by health administration like keeping distance, washing hands or stay at home.

4) Cognition, Attitudes and Behavior as Impact of Campaigns

Nudging. Whereas the before presented approaches are based on a conception of social behavior as intended by the individual und performed in social and cultural contexts, the "Theory of Nudging", formulated by Richard H. Thaler and Cass R. Sunstein [103], is based on *behavioral economics*. The central idea is, that people's behavior can be influenced by small and apparently insignificant details, e.g. by placing healthy food in a prominent position at the buffet of a Mensa and in the case of COVID-19, that the location of disinfectant dispensers in stores is enhancing hand hygiene [114] or a

lockdown may led to increases in physical activity [30]. A *critique* of this approach comes from a normative perspective, pointing out, that nudging is a *manipulative technique*, insofar people are influenced without knowing, even if it's done for a good purpose, contrary to communication campaigns that empower people. In addition, the sustainability of this type of intervention is questioned as well.

Social Cognitive Theory and Self-Efficacy. One of the oldest but still most prominent approaches, is Albert Bandura's "Social Learning Theory" [7]. The model integrates determinant factors of the (campaign) messages as environment of a person, the person itself with individual characteristics as a member of the target group, and processes of attention, retention, and reproduction in form of concrete behavior. The social cognitive process of observational learning is initialized in a *first phase of attention* by *characteristics of the model* in general and in particular of the campaign message like salience, affective value, complexity, prevalence, accessibility and its functional value. And the perception and comprehension of the campaign message as the to be learned model is influenced by *attributes* of the individual like perceptual set, cognitive capabilities and preconceptions, arousal level and acquired preferences. The *second phase of retention* concerns the construction of cognitive representations and its rehearsal in the memory of the observer, influenced by observer attributes like cognitive skills. In a *third phase of production processes*, the individual is eventually reproducing the learned model. This will be influenced in the *fourth phase by motivational processes* of external, vicarious and/or self-incentives. Bandura [8] himself has applied his theory, combined with other theoretical approaches, to health promotion and disease prevention.

As an additional factor, he integrated the concept of *"Self-Efficacy"*. Therefore, it is important to communicate and strengthen the self-beliefs of the target group, to be able to produce the behavior as proposed by the campaign, and to communicate that the proposed behaviors like keeping distance or staying at home will reduce the risk of being infected by the Corona virus as promised beneficial outcome.

Theory of Reasoned Action (TRA) & Theory of Planned Behavior (TPB) are general perspectives from social psychology. Because the factual behavior of individuals can be explained seldom by individuals' attitudes alone, the "Theory of Reasoned Action" and its successor the "Theory of Planned Behavior" have been formulated by Icek Ajzen [3] and Marco Yzer [122]. It is relevant for communication campaigns, although it does not consider explicitly the campaign message as input. The "Theory of Planned Behavior" explains the *actual behavior* of a person by the preceding intention to behave, that is influenced by three factors, namely underlying attitude, personal norms, and self-efficacy. Most important for the planning of a campaign are the *normative beliefs* of the target groups, e.g. young people's beliefs that their peers are drinking more than themselves or the perceived non-protective behavior of others against Corona infection. A campaign goal thus can be to communicate this as false belief. Martin Fishbein and Joseph N. Cappella [8] have condensed

these two approaches into an "Integrative Model" and have applied it for developing communication designed to promote healthy and to prevent or alter unhealthy behavior. It seems to be important for Corona campaigns to communicate the recommended behavior as important and shard social norm (e.g. to vaccinate is citizen duty), and self-efficacy (e.g. confidence in preventing the contagion of COVID-19) in the form of easily achievable behavior.

Protection Motivation Theory (PMT) and the *Health Belief Model (HBM)* are the two most used approaches from public health science for campaign planning [17, 19, 40, 56, 85]. They explain how persons react to health threats by motivated protection behavior or more general with preventive behavior. Both theories incorporate factors like the perception of a threat, e.g. by the Corona virus, based on the perceived severity of the threat on the one hand and the own susceptibility on the other hand. These two factors interact with the perceived costs of own actions and the estimation of the own coping behavior, and together they also explain protection behavior against the COVID-19 virus [2], how empirical studies in various countries demonstrate [60, 77, 105, 110, 119].

Transtheoretical Model (TTM) as a situational approach is focusing on the different *stages of change* in which individuals of a target group are situated [80], namely precontemplation, contemplation, preparation, action, maintenance, and termination. As a consequence, campaign planners, e.g. of a smoking cessation campaign, should not only address cigarette smokers as homogeneous target group but should differentiate its messages according to the stages of change, a person is in, and this situation has to be analyzed by evaluation research [74]. As a consequence, people in the precontemplation stage should by informed and sensitized for the problem, whereas persons in the preparation phase need information about how to behave – e.g. to vaccinate – or change behavior, and individuals in the maintenance phase should get support of their behavior change: "Thank You, that you maintain social distancing." Like in the Swiss Corona campaign. Especially in the early stage of the COVID-19 virus diffusion [86], but as well in the later stage of vaccination the model may explain differences in behavior between people.

Societal Approaches. Whereas the above presented approaches focus the individual level of single persons, there are also approaches dealing with the meso level of the socioecological context of people like informal groups, the community and norms and values at the macro level of society. The concepts of *Two-Step-Flow & Functions of Opinion Leaders or Influencers* [121] analyze the interpersonal communication in social networks of the target group of a campaign which may influence compliance behavior. Und the *"Knowledge & Communication Gap"-Perspective* [13, 109] is emphasizing that information by mass media or campaigns as well is diffused and adopted differently according to the socioeconomic status and education level of people. Because high educated persons use the print media more, have more elaborated communication skills, and are more motivated and interested in public affairs, they learn information by media or health campaigns at a faster rate, and that may widen existing

knowledge gaps [63]. This approach was later applied to the Internet as so called *"Digital Divide"* and generalized to *"Communication Effect Gaps"*. Vicky Freimuth (1990) [41] discussed the challenge of communication campaigns reaching target groups of low income and poorly educated people and trying to reduce and not to widen existing knowledge gaps and health disparities [see 33]. She formulated practical tips for campaign planners, like researching underlying motivations of target groups, using simple and concrete messages, adapted to the target groups' cultural beliefs, and emphasizing immediate rather than long-term benefits. In addition, different social *norms and cultural values of a society* [23, 26], guiding the perceptions and behavior of target groups like migrants, should be considered by campaign planners [32]. As an example: Young people as target group of alcohol campaigns often refer in a biased way to the wrongly as excessive perceived alcohol consumption of their peers, and taking it therefore personally as social norm [113].

5. Conclusion: What Have We Learned from Theory to Optimize Health and COVID-19 Campaigns

All of the above presented theories about message effects, information use and processing or behavior change have implications for the planning and implementation of public health campaigns that have been discussed in this contribution. They offer complementary and integrative insights not only on the individual level, but as well including societal and cultural factors about how campaigns with their defined goals, specified messages, and selected communication channels have to be planned and implemented to be effective and efficient as much as possible. It is to hope, that the already realized and planned upcoming COVID-19 interventions will be based on the above discussed theoretical approaches.

Chris Bonell et al. [12], Jay J. Van Bavel et al. [107] and Nour Mheidly & Jawad Fares [68] propose for COVID-19 policy interventions and health campaigns concrete key principles like c*lear* and *make it possible messages* with *concrete examples, emphasizing benefits,* and *specific guidance*, e.g. by promoting social distancing to protect each other, that will benefit all people by providing social and emotional support, foster shared identity and stimulate compliance. Then there is a need for more tailored public health information especially by targeting marginalized groups, but without discrimination. And avoided should be messages based on fear or authoritarian information but preparing people for *fake news* and *misinformation* by conspiracy theories [53]. And not at least, an *empirical evaluation* should be an integral part from the outset of the planning process of any health campaign.

Conflicts of Interest

The author declares that he has no competing interests.

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