



## Understanding communication and influence in a defense context

— a review of relevant research from the field of psychology

Anne Lise Bjørnstad



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## Summary

In order to improve our understanding of factors relevant to communication and influence in a defense context, this report delves into the field of psychology. Understanding the psychological processes at the basis of human communication and influence may help the Norwegian government and Armed Forces in their effort, both to protect the nation and its inhabitants against potential enemy activity with the goal of gaining influence, and to communicate with the population in manners that increase the probability of the message being understood by its recipients in line with what was intended. The research presented also seeks to increase the understanding of psychological factors that may influence Norway's international relations, both at military and at political levels. Being able to understand what influences Norway and the Norwegian Armed Forces may be facing, and being able to both prepare and respond to these in an adequate manner, are deemed important aspects of the country's ability to defend itself.

The report focuses on both the communicator and the audience/recipients, on the message, and on the medium in which it is communicated, as well as on the group, organizational, and cultural contexts. The themes presented include attitudes, persuasion, cognitive models, technology-mediated influence, priming and framing, the base-rate fallacy, attribution, group effects, social identity theory, organizational effects, job involvement, erroneous decision making, and cross-cultural issues.

This report also examines how issues at the individual, group, organizational, and cultural levels are interrelated. For instance, it is described how cultural differences may modify the effect of the persuasion principles. It is furthermore pointed to how attributional errors are found at both individual and group levels, but may differ across cultures. Finally, it is elaborated upon how the organizational context may interact with the individual level aspects in creating more or less robustness towards hostile attempts at influence. Implications of the research findings for the Norwegian government and defense organization in both national and international contexts are discussed. For instance, it is discussed how understanding the principles of persuasion, the impact of different group belonging, the consequences of different forms of organizing, and the effect of technologically mediated communication may aid the population, government, and armed forces to protect themselves against hostile influence attempts as well as successfully communicate with the population in peace, crisis, and conflict.

The psychological research and implications presented in this report may be used both to guide the nation's current and future efforts to prepare for and counter influence operations aimed at harming our society, and to give the Norwegian government and Armed Forces a baseline study from which evaluation tools and further research may be defined and launched. This report may be seen as a starting point from which to understand our vulnerabilities and our possibilities in regard to the psychological sides of securing the Norwegian population - including also increasingly more technologically mediated communication.

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## Sammendrag

For å øke vår forståelse for faktorer som er relevante for kommunikasjon og påvirkning i en forsvarskontekst, tar denne rapporten for seg relevant forskning fra psykologifeltet. En bedre forståelse av de psykologiske prosessene i menneskelig kommunikasjon og påvirkning kan hjelpe norske myndigheter og Forsvaret med å beskytte nasjonen og befolkningen mot potensiell fiendtlig påvirkningsaktivitet. Det vil også kunne hjelpe norske myndigheter og Forsvaret med å kommunisere med befolkningen på måter som øker sannsynligheten for at innholdet blir tolket i tråd med hensikten. Det er videre en målsetting at den presenterte forskningen skal gi bedre innsikt i psykologiske faktorer som kan påvirke Norges internasjonale relasjoner både i politisk og militær sammenheng. Å forstå hva slags påvirkning Norge og Forsvaret kan møte og være i stand til å respondere tilfredsstillende er viktige aspekter ved landets evne til å forsvare seg.

Rapporten fokuserer på både avsender og mottaker, budskapet og mediet det er kommunisert i, i tillegg til gruppekontekst, organisasjonskontekst og kulturell kontekst. Dette innbefatter emner som holdninger, persuasjon, kognitive modeller og effekter, teknologimediert påvirkning, priming, framing, gruppetilhørighet, sosial identitetsteori, organisasjonseffekter, jobbinvolvering («job involvement»), feilbeslutninger og krysskulturelle problemstillinger.

Rapporten synliggjør også hvordan temaer på individ-, gruppe-, organisasjons-, og kulturelt nivå er relaterte. For eksempel beskrives det hvordan kulturelle forskjeller kan modifisere effekten av overtalelsesprinsippene. Det pekes videre på hvordan attribusjonsfeil finnes på både individ- og gruppenivå, men at de kan variere på tvers av kulturer. Rapporten utdyper også hvordan organisasjonskonteksten kan interagere med aspekter på individnivået og gjøre individene og organisasjonen mer eller mindre robuste mot uønskede påvirkningsforsøk. Implikasjoner av forskningsfunnene for forsvarsorganisasjonen både i nasjonale og internasjonale sammenhenger er diskutert. Blant annet er det diskutert hvordan forståelse av persuasjonsprinsippene, betydningen av forskjeller i gruppetilhørighet, konsekvensene av ulike organisasjonsformer og effekten av teknologimediert kommunikasjon, kan hjelpe befolkningen, myndigheter og Forsvaret med å beskytte seg selv mot fiendtlige påvirkningsforsøk og å kommunisere med befolkningen i fred, krise og konflikt.

Den psykologiske forskningen og implikasjonene presentert i denne rapporten kan brukes til å veilede nasjonens nåværende og fremtidige innsats for å forberede seg på og forsvare seg mot påvirkningssoperasjoner som har til hensikt å skade samfunnet. Rapporten gir norske myndigheter og Forsvaret en grunnlagsstudie som videre forskning og evalueringsverktøy kan defineres og settes i gang ut fra. Den kan være et startpunkt for bedre innsikt i de psykologiske sidene av våre sårbarheter og muligheter til å sikre den norske befolkningen, gitt også den økende bruken av teknologimediert kommunikasjon.

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## Preface

This report has been written in the context of the FFI project *Bistand til Forsvaret og Forsvarsdepartementet innen strategisk kommunikasjon* (BISK), and is best understood together with the other reports produced under this project (by Torbjørn Kveberg, Arild Bergh, Vårin Alme, and Sverre Diesen). The reports come from different fields and offer complementary viewpoints, ranging from political science and sociology, to psychology, technology, and military science. Read together, the reports offer a more complete understanding of the issue of influence in a defense context.

This report alongside the other reports conclude the work of BISK, which is the third project in a series of FFI projects that have focused on strategic communication (FFI project *Strategisk kommunikasjon og cyberforsvar i et hybrid trusselbilde*, STRICT) and influence operations (FFI project *Cybermakt og informasjonsoperasjoner i et nytt trusselbilde* CITRUS).

I would like to thank the project advisory board (prosjektrådet), headed by Kåre Helland-Olsen, for valuable input and interesting discussions adding to the relevance and quality of the work presented in this report. I would also like to thank the project members Torbjørn Kveberg, Arild Bergh, Vårin Alme, and Sverre Diesen for good discussions and feed-back on earlier versions of this report.

Kjeller, 20 May 2019

Anne Lise Bjørnstad



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# 1 Introduction

The aim of FFI project *Bistand til Forsvaret og Forsvarsdepartementet innen strategisk kommunikasjon* (BISK) is to provide research that may aid the Norwegian government, Armed Forces, and Ministry of Defense in their effort to understand and handle foreign state influence campaigns and communicate in peace, crisis, and conflict. In order to improve our understanding of factors relevant to communication and influence in a defense context, central to BISK, this report delves into the field of psychology.

Psychological processes are at the heart of human communication and influence. Recognizing these processes may be helpful for the Norwegian government and defense organization in their endeavor to protect the nation and its inhabitants against potential enemy activity with the goal of gaining influence. Similarly, this knowledge of psychological processes may help the Norwegian government and defense organization to communicate with the population in ways that increase the probability of the message being understood by its recipients in line with what was intended.

## 1.1 Issue

The issue concerns how to withstand hostile influence operations towards military and civilian organizations, and our society as a whole, as well as how to be able to reach the population with important information, for instance in a crisis situation after or in the midst of influence operations from foreign states or organizations. Psychological research pertains to the basis of human cognition, understanding, and behavior, and is thus a central part in understanding the issues of human communication and influence, also in a defense context. The term influence is understood in its widest possible terms, indicating some sort of effect on someone by someone or something, including both intended and unintended effects, as well as both information-based and non-information-based effects. Influence operations are understood to indicate any type of campaign launched by foreign states or organizations with the intention to sway, manipulate or change people's attitudes, meanings or understandings of any type of topic, situation or occurrence.

Being able to understand what influences we may be facing and, being able to both prepare and respond to these in an adequate manner, are important aspects of the country's ability to defend itself. As indicated in Diesen (2018), the importance of influence operations, relative to the use of conventional military force, increases in current and future conflicts between nations and other stakeholders. This situation presses the importance of understanding communication and influence in a defense context.

## 1.2 Approach

In order to illuminate the issue of communication and influence in a defense context, this report will present research from the field of psychology. Moreover, this report is a literary review of

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research from the field of psychology relevant for the current topic and context. The theories and research presented are organized according to the level of focus: individual, group, organizational, and national cultural levels. The main emphasis is at the individual level in this report. Themes that will be presented include: attitudes, persuasion, cognitive models, technology-mediated influence, priming and framing, the base-rate fallacy, attribution, group effects, social identity theory, organizational effects, job involvement, erroneous decision making, and cross-cultural issues. The focus will be on both the communicator and the audience/recipients, on the message, and on the medium in which it is communicated, as well as on the group, organizational, and cultural contexts.

### **1.3 Use**

The psychological research and its implications presented in this report, aims to give the Norwegian government and defense organization a baseline study from which further studies and research may be defined and launched. For instance, this report may contribute to a basic understanding, from which new assessment tools can be constructed, tools that aim to evaluate Norway's ability to defend itself against influence operations. The research described here may also contribute to the nation's current and future efforts to prepare for and defend against influence operations aimed at harming our society.

In order to promote the highest possible defense capability of the Norwegian society, the Norwegian defense organization is also dependent upon many civilian actors and organizations such as the police, health services, and central providers of infrastructure, referred to as our Total Defense ("Totalforsvaret"). It is the intention that this report also may be of use for all the actors in a Total Defense context.

The report also aspires to increase the understanding of psychological factors that may influence Norway's international relations, both at military and political levels, in order for us to have the best starting point, if something should occur that may harm our nation's interests (for more on types of harm see Kveberg, Alme, & Diesen, Submitted).

### **1.4 Limitations**

This report is a literary review and does not contain new empirical research. However, as indicated above, it is hoped that this report will inspire future empirical research in a defense context. The report is limited to research from the field of psychology relevant to the topic and context of this report. For a broader understanding of the issues of influence in a defense context please be referred to the other reports produced in the BISK project (by Torbjørn Kveberg, Arild Bergh, Vårin Alme, and Sverre Diesen), which offer complementary viewpoints from different fields.

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## 2 Theories and research at the individual level

From childhood and onwards we are socialized through our parents, families, friends, kindergarten, schools, and so on to become members of society. We are all continuously exposed to influences, some quite obvious, such as commercials for products someone wants to sell us, to more covert forms of influence that we rarely reflect upon in our everyday lives. The sum of the influences and the characteristics of us as individuals interact to form the values and attitudes that we hold and the behaviors in which we engage. The awareness and understanding of the psychological mechanisms behind attitude formation, being influenced, and exerting influence can help make us more robust and more able to defend ourselves as a nation in the information age.

### 2.1 Attitudes, behavior and attitudinal change

Attitudes can be defined as the “psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993; p. 1). Attitudes can affect how people select, perceive, and evaluate attitude-relevant information, particularly if the attitudes are highly accessible in memory, resistant to change, and based on an elaborate knowledge structure (e.g., Stahlberg & Frey, 1996). The reasons for this impact of attitudes are described in theories of consistency, social judgment, and cognitive schemas (for an overview, see e.g., Stahlberg & Frey, 1996). Theories of consistency state that people will strive for consistency in their cognitions (and behavior) in order to avoid cognitive imbalance and tension. Social judgment theories explain how our attitudes guide our judgements of other people’s attitudes, and schemas are cognitive memory structures that help us process information.

There is a considerable amount of research on the relationship between attitudes and behavior. The research indicates that attitudes do influence behavior, as for instance expressed in the theory of planned behavior (Ajzen, 1991), which describes how attitudes influence behavior together with social norms and perceived behavioral control. However, there is also a host of other factors that influence behavior, such as habits, relevance, and moral obligations (e.g., Stahlberg & Frey, 1996), which make behavior far from easily predicted from attitudes. Attitudes that can be described as strong, accessible, embedded (i.e., tied to other beliefs or attitudes the person holds), drawing on expertise, based on direct personal experience, being stable over time, reflecting vested interests, being important, and which have consistent affective and cognitive components will more likely show high attitude-behavior consistency (Fiske & Taylor, 2017).

Due to the link to behavior, attitudes are often sought influenced by governmental campaigns or by companies to serve their commercial interests. Attitudes can also be targeted in a strategic effort by foreign governments, to serve a political agenda. As a nation, we need to be able to protect ourselves against unwanted foreign influence. Also, our government may wish to exert some level of influence on the population. Examples of the latter are campaigns aimed at

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changing people's attitudes towards smoking, drinking and driving, and wearing seat belts. We, as well as other nations, may also wish to influence the attitudes of people in other countries to serve our political needs. For instance, it might be in the country's strategic interest that our closest allies in NATO view us in positive terms (e.g., Alme, 2019).

Attempts to change attitudes and behavior through information campaigns have only been moderately successful though (e.g., Philips, Ulleberg, & Vaa, 2011). Indeed, research indicate that such campaigns have marginal effect, unless combined with behavioral efforts (e.g., Philips, et al., 2011), such as incentives, social norms, or legal sanctions. Indeed, behavioral change often precedes attitudinal change. This process can be explained by the cognitive dissonance theory and research (e.g., Festinger, 1957), which has found that humans, in our effort to make sense out of the world and ourselves, prefer harmony between thought and behavior. Hence, we will change our attitude to fit our actual behavior. For instance, people who start to wear a seat-belt out of fear of being fined tend to also change their attitudes to become more favorable towards wearing a seat-belt in general. In such cases, campaigns can help to provide reasons why, for instance, wearing a seat-belt is a good idea – consequently, making the attitude change more robust through an elaborate knowledge structure.

## 2.2 Persuasion

Persuasion is about influence, especially social influence, and has developed into a field of its own in psychology. Robert Cialdini is the most central researcher in this field. He has summed up the research in six principles of persuasion that are now widely known and used in many fields also outside psychology (e.g., Cialdini, 2001). The six principles are: Liking, Reciprocity, Social Proof, Consistency, Authority, and Scarcity (Cialdini, 2001). The persuasion principles can teach us something about what affects a communicator's ability to successfully communicate with any given audience/recipient.

*Liking* is promoted most notably by similarities and praise, but also by attractiveness. The finding is that people tend to be more persuaded by someone they like. *Reciprocity* refers to people's tendency towards repaying in kind. Thus, creating the feeling that you have been given something will increase the probability of you giving something back. *Social proof* or consensus pertains to people's propensity to follow others' example, especially similar others. This also refers to the tendency of people to do what they expect will be socially approved. *Consistency*, sometimes also referred to as *commitment*, refers to the propensity people have towards wanting to be consistent in their beliefs, attitudes, and behavior. This includes avoiding cognitive dissonance (e.g., difference between attitude and behavior). *Authority* refers to people's tendency to defer to experts or people in high power. *Scarcity* refers to the tendency to want more of something of which there is less to be had. In other words, people tend to put more value on things that are in short supply.

Comparing the importance of these six principles, Orji, Mandryk, and Vassileva (2015) found consistency/commitment, reciprocity, and liking to have the biggest effects on persuasion.

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### 2.2.1 Moderating factors

Orji et al. (2015) found gender differences in the effectiveness of the persuasion principles. Most notably they found that females, relative to men, tended to be more affected by consensus, while males tended to be more affected by scarcity. Orji et al. also found some dissimilarities between people of various ages; younger adults (18 – 25), relative to older adults (26 –) were more likely to be influenced by scarcity while older adults were more likely to be influenced by authority.

Subsequent research by Orji (2016) and Ojibo, Adaji, Orji, and Vassileva (2018) have furthermore documented that there are cultural variations in the effectiveness of the persuasive principles. Nonetheless, consistency/commitment, reciprocity, and liking prevailed as the three most important principles in Orji's study of individualistic (North American) and collectivistic (Asian) cultures, and consistency/commitment and reciprocity prevailed as the two most important principles in Ojibo et al.'s study from Nigeria (for more on culture, see Chapter 5).

Guadagno & Cialdini (2010) found that individual differences in preference for consistency (PFC) affected the degree to which consistency-based phenomena have a persuasive effect on people. Moreover, people differ in their preference for consistency. Indeed, low PFC could make the persuasive effect of consistency disappear in the sub-categories of *balance* and *foot-in-the-door* effect. Balance refers to the tendency to be more positive towards someone you are liable to meet than someone you are not liable to meet, and foot-in-the-door refers to the tendency to agree with a second request after having agreed to a smaller initial request. As for the sub-category of *cognitive dissonance*, the tendency to avoid dissonance between attitudes and behavior, it was found that low PFC could turn this effect around. Meaning, people low in PFC seem to strive *for* dissonance rather than to avoid it, so that they are not easily pigeonholed. This can for instance be done by taking the opposite stance of what they did yesterday. There are reasons to believe that cultures may vary in their PFC -levels, making persuasion using the consistency principle liable to falter in cultures and subcultures that value more dissonance.

Finally, research by Griskevicius et al. (2009) indicated that various types of arousal also have the potential to turn the effects of the persuasive principles around. For instance, fear was found to make scarcity appeals counter persuasive.

In sum, there is a substantial amount of research on Cialdini's six persuasive strategies. Evidence also indicate that a variety of factors may modify or eliminate the effects of the persuasive principles – indeed, some factors may even make the use of certain principles backfire. This should caution the user not to employ the principles generally without carefully considering the audience and the context.

### 2.2.2 Implications

What are the implications of the findings from the persuasion research for the communication strategies of the Norwegian government and defense organization? As presented introductorily, the persuasion principles say something about what affects a communicator's ability to

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successfully communicate with an audience/recipient. The research on persuasion indicate that it is advantageous if the population likes the government and defense organization, feels that the government/defense organization are doing a good job for them (reciprocity), and that there is consistency between what the government/defense organization are doing and what they are saying or between various narratives that they provide. Additionally, it is beneficial if the population perceives that the government and defense organization are integral parts of society (social proof and liking). The latter has been an expressed motivation for keeping a system of general conscription in Norway.

Building a reputation of high expertise would also be valuable for making their communication more effective (authority). Relying on high ranking government representatives and military officers in communication efforts may also add to the credibility. On the other hand, there are some aspects that make the authority effect more uncertain. Because the Norwegian culture is defined by, and evidence indicates that we are moving towards even less deference to authority by position (low power distance; e.g., Hofstede, 2001), such an approach could also potentially backfire. Moreover, trends we have seen across many countries and cultures, especially within social media groups, are trends of less deference and more suspicion towards expertise and power in society as a whole. This effect can be understood as a result of a greater divide between groups, and that those in power are being perceived as “them” (outgroup) and not “one of us” (ingroup), i.e., the opposite of what creates liking and social proof/consensus (see Chapter 3 for more on group effects). Consequently, a broad and inclusive communication strategy, including both diverse experts and higher and lower ranking personnel, would probably be a more robust approach than relying on high ranking government and military representatives alone. Such a broad approach would follow the principles of liking and social proof. Scarcity may backfire if used as a communication strategy in a situation where people are already alarmed by high uncertainty or a crisis of some sort.

However, adversaries may also use these strategies of persuasion, for instance with the aim to disinform and create divides between groups. Adversaries may for example attempt to build a narrative of “us” and “them” – where societal subgroups are pitted against each other. One may also imagine an adversary wanting to spread a narrative in which the government or the armed forces may be portrayed as untrustworthy, not like *us* (i.e., the population or societal subgroups), and not serving *us* but exploiting *us*. This could for instance be attempted, not only by construing and disseminating information about untrue incidents (i.e., disinformation and “fake news”; for more about fake news, see Alme, 2019a, and Bergh, 2019), but also by simply leaking information that is unfavorable for the government and armed forces, or leading the attention to unfavorable issues. The government and armed forces may also experience that the media are more eager to tell such stories than to be critical in the best interest of the nation. The media may not intend to act against our nation’s best interests, but may not sufficiently appreciate the consequences over time or in a given situation (for more about “useful idiots”, see Bergh, 2019). If adversaries succeed in discrediting or defining the government and armed forces as outgroups, it may in turn also hamper their ability to successfully communicate with the population when needing it the most, for instance in a crisis situation. Hence, there seems to be important advantages attached to both preparing for adversary attempts at persuasion as well



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as fostering the elements that increase the probability of the government and armed forces being able to successfully communicate with the population – also in a crisis situation.

### **2.3 Cognitive processes and the Elaboration likelihood model (ELM)**

We now turn to research on different cognitive processes. This research provides a more in depth understanding of the attitude formation and persuasion processes presented above and is deemed to further illuminate the issue of influence. There are many different models that seek to explain the different modes of cognitive processing, from the more automatic to the more controlled modes of processing (for an overview, see Fiske & Taylor, 2017). There are both single-mode and dual-mode models, indicating whether the various types of thought processes are understood as merely a difference in degree (single-mode), or as a qualitative distinction in the type of cognitive processing (dual-mode). In the field of persuasion, dual-mode models have been the most influential, notably Chaiken's (1980) *heuristic-systematic* model and Petty & Wegener's (1999) *elaboration likelihood model*. Chaiken's model contrasts systematic processing, which can be understood as analytic and comprehensive thinking, with heuristic processing, which can be understood as previously stored rules of thumb. Petty & Wegener's model builds on the same basic ideas as Chaiken's model, and describes two routes to persuasion; a central route, which is more deliberate and controlled, and a peripheral route, which is more automatic and superficial. The central route is comparable to Chaiken's systematic processing and the peripheral route is comparable to Chaiken's heuristic processing. Cross-cultural research has indicated that the dual-process models are generalizable across cultures (Aaker & Maheswaran, 1997). Based on the similarities pointed to between these two models, this report will henceforth use the expressions *elaboration*, *systematic processing* and *central route* interchangeably, and likewise *heuristics* and *peripheral route*.

It has been found that persuasion by the central route, involving central thought processes or elaboration, is more robust and leads to more long-lasting attitudinal change (e.g., Chaiken, 1980; Petty & Cacioppo, 1986). Additionally, it has been found that persuasion by elaboration has more behavioral consequences (Petty, et al., 2009). However, as described in Chapter 2.1, there are also many other factors influencing behavior; elaboration is just increasing the probability that persuasion will result in behavioral change.

There are a number of factors that affect whether people will tend to use systematic processing/elaboration or revert to more automatic and heuristic processing of information. These can be put into four categories: communicator, message, audience, and individual differences. Some of these interact. For instance, there are individual differences that can reverse the general findings. This will be presented below, in Chapter 2.3.4.

#### **2.3.1 Communicator differences**

The credibility, expertise, and attractiveness of the communicator (i.e., the party presenting a message) influence how people process the information presented (Fiske & Taylor, 2017). These attributes of the communicator are regarded as peripheral or heuristic cues, which are

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typically used more when people do not feel personally involved. Moreover, such cues provide convenient shortcuts when there is low motivation to process the message.

However, low credibility, expertise, and attractiveness of the communicator may also positively influence the motivation of the recipient to carefully review the information presented. In a study of trustworthiness (one element of credibility), Priester and Petty (2003) found that if the source had dubious trustworthiness, the participants more carefully processed the message arguments than when the source was highly trustworthy. Communicator low trustworthiness also made participants demonstrate an elevated recall of the arguments. High trustworthiness of the communicator seems to reduce motivation for elaboration. This effect can be explained by people being cognitive misers (e.g., Schumann, et al., 2012), meaning that we seek to spend as little energy as possible on thought processes, and revert to energy-saving heuristics whenever deemed acceptable in a situation.

### **2.3.2 Message differences**

The message quality, repetition, exposure, difficulty, number of arguments, and the use of rhetorical questions, multiple sources, and environmental distractions influence how people process a message (for an overview, see, Fiske & Taylor, 2017). The central issue is the thoughts produced by the recipient.

Mere exposure (i.e., only exposure and nothing else) and repetition of non-linguistic messages can provide positive persuasion effects given that the stimulus initially is both unfamiliar and is evoking neutral or positive reactions (Fiske & Taylor, 2017). This effect has been shown under circumstances of minimal cognitive processing, indicating a less conscious cognitive process. The effect of repetition of linguistic messages depends on the cognitive responses generated by the recipient. Given that the recipient is motivated to consider the message, hence resulting in a central processing and elaboration of pros and cons, and the message content is cogent, repetition may lead to an initial positive effect due to increased understanding (Petty & Cacioppo, 1986). Although, if the message is repeated beyond the point of understanding, tedium and its consequence, the production of more counterarguments, will lead to less persuasion (Cacioppo & Petty, 1979).

The more difficult a message is, the more the recipient needs to be motivated in order for it to be cognitively considered (Fiske & Taylor, 2017). Uninvolved recipients will not bother to consider difficult messages. Uninvolved recipients may also use the sheer number of arguments as a heuristic to decide whether a message is convincing or not.

The central issue of how a message will be considered is the amount of cognitive elaboration that it yields. In line with this, the use of rhetorical questions and multiple sources may increase elaboration, while any distractions that lower the cognitive capacity of the recipient will have the opposite effect (Fiske & Taylor, 2017).

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### **2.3.3 Audience differences**

The degree of involvement of the recipient will influence how a message is processed. More specifically, personal interest, personal consequences, and personal responsibility increase elaboration/systematic processing, whereas a lack of consensus, low cognitive capacity and low motivation increase heuristic processing (Fiske & Taylor, 2017). In other words, outcome involvement stimulates thought, which leads to lesser reliance on superficial characteristics of the communication. Outcome involvement also moderates the effects of communicator and message differences described above (Fiske & Taylor, 2017).

Outcome involvement guides not only our elaboration, but also our attention (e.g., Fiske & Taylor, 2017; Pomerantz, Chaiken, & Tordesillas, 1995). If the recipient does not even bother to read the information due to its irrelevance, there is not much influence. However, if one reads and checks very carefully, the quality of the arguments will determine the level of influence exerted. For this reason, elaboration will also entail increased robustness against persuasion by poor arguments. In sum, outcome involvement can lead to both greater and lesser influence depending on the quality of arguments.

Low cognitive ability or capacity implies less attention and makes people elaborate less and revert more to peripheral cues and heuristics (e.g., Fiske & Taylor, 2017). Low cognitive ability or capacity can be a personal attribute or situationally induced by stressors like time shortage, multiple tasks or disturbances stealing cognitive capacity. Even high arousal, induced by physical exercise, has been found to lower elaboration and increase the reliance on peripheral cues like source status (Sanbonmatsu & Kardes, 1988).

Emotions have also been found to influence how a message is processed. When motivation to elaborate is low, emotions may serve as peripheral or heuristic cues (Petty, Fabrigar, & Wegener, 2003). Conversely, when motivation to elaborate is high, emotions may serve by way of persuasive arguments (Petty & Cacioppo, 1986). Emotional involvement may also serve both as a motivator to elaborate and as a motivator to avoid all information that may be contra-attitudinal and thereby unpleasant (e.g., Fiske & Taylor, 2017; Pomerantz, et al., 1995). This links to the literature on selective perception, attention, learning, and recall (e.g., Fiske & Taylor, 2017).

### **2.3.4 Individual differences**

The above research pertains to situational circumstances affecting whether people will tend to elaborate on the information/message or choose the effort saving heuristic processing option. Additionally, there are individual variations in the likelihood of elaboration.

Need for cognition (NFC), need to evaluate, and uncertainty orientation are individual differences that will affect whether elaboration or use of heuristics will be more likely (e.g., Fiske & Taylor, 2017). NFC and need to evaluate will increase the likelihood of elaboration. In situations of high involvement, uncertainty orientation increases the likelihood of elaboration,

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whereas certainty orientation increases the use of heuristics. Interestingly, in situations of low involvement, the effects of uncertainty orientation are quite the opposite.

#### ***2.3.4.1 Need for cognition (NFC) and Critical Thinking***

Need for cognition (NFC) refers to individual differences in the tendency towards engaging in and enjoying effortful cognitive endeavors (Cacioppo, Petty & Kao, 1984). NFC has been shown to affect the degree to which, and the manners in which, people are susceptible to persuasion.

For instance, Cacioppo, Petty, and Morris (1983) found that the attitudes of subjects high in NFC were more affected by argument quality than the attitudes of subjects low in NFC. Thus, NFC made persuasion by bad arguments less likely. In line with this research, Haugtvedt, Curtis, Petty, & Richard (1992) demonstrated that the initial experimentally created beliefs of high-NFC individuals were more resistant to change than the experimentally created beliefs of low-NFC individuals. In both these research endeavors, encompassing both existing and experimentally created beliefs and attitudes, results indicate that NFC makes individuals elaborate more and therefore become more robust against influence.

In a similar vein, critical thinking may be seen as vital in terms of withstanding hostile influence. Critical thinking has in research been viewed as both an ability that can be learned and trained and as a personal predisposition, where definitions include such mental processes as reflection, questioning, logic, reasoning, meta-cognition, and making judgements (for an overview, see e.g., Fischer, Spiker, & Riedel, 2009).

NFC has been understood as either a predisposition for, or a central part of critical thinking, as well as being found to predict performance on cognitive tasks (e.g., Fischer, et al., 2009; Heijltjes, van Gog, Leppink, & Paas, 2014; Klaczynski, Fauth, & Swanger, 1998). Critical thinking has furthermore been deemed a pivotal capacity in military leaders and personnel, central to their interpretation of information and decision making (e.g., Fischer, et al., 2009; see also Chapter 4.4 for more on decision making).

NFC has been regarded as a personal trait, that is, a stable personal tendency not subject to situational influences. However, as a trait is formed by an individual's upbringing, education, and societal experiences, there is reason to believe that other life experiences, like the organizational context in which individuals work, also may exert some effect on a person's level of NFC. For instance, one could imagine that authoritarian parenting and a totalitarian educational and political system would be promoting lower NFC in individuals than democratic and participative systems would. For instance, research on "learned helplessness" (e.g., Maier & Seligman, 1976) has taught us that animals and people alike stop trying if they learn that any action they are likely to take will be futile. Learned helplessness has been demonstrated to be transferrable across domains, meaning that if an individual learns that there is no use in pondering to try to solve a problem in one area of life, this learning experience is transferred to other situations and domains of life. Therefore, although considered a personal trait, NFC may

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be affected by a number of life experiences. There is a need for research that further explore the antecedents of NFC and its malleability in terms of situational and contextual influences.

#### **2.3.4.2 *Need to evaluate***

Need to evaluate (Jarvis & Petty, 1996), pertains to the degree to which people tend to have many or few pro and con thoughts in response to a persuasive message. This dimension correlates moderately with NFC, indicating some overlap in meaning (Fiske & Taylor, 2017); need to evaluate makes people more prone to gathering information, forming strong opinions, and being more politically active.

#### **2.3.4.3 *Uncertainty orientation***

Uncertainty orientation (Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988) has also been found to affect persuasion. It can be defined as the degree to which people tend to stay with the familiar and predictable or seek out novel situations or explanations. In the former category, high certainty orientation, people seek to avoid threats to their current understanding of the world, whereas in the latter category, high uncertainty orientation, people primarily seek to make sense of their environment. The standard finding that personal relevance or outcome involvement leads to more elaboration/central processing, has been found not to hold true for those people high in certainty orientation (Sorrentino, et al., 1988). Indeed, it seems that in matters of high consequence, certainty-oriented people tend to revert *more* to heuristics, not less, presumably because they trust heuristic cues like experts, tradition, and stereotypes more than their own analytic thinking (Sorrentino, et al., 1988). The authors explained this finding as due to a difference in upbringing, where the rewarding of autonomous thinking and exploratory behavior leads to uncertainty orientation and a punishing of autonomous thinking and exploratory behavior leads to certainty orientation. The authors also proposed that this may be a systematic difference between individuals in different organizations, so that people high in uncertainty orientation work where autonomous thinking and exploratory behavior are rewarded and vice versa (for more on the organizational and cultural contexts, please see Chapters 4 & 5).

#### **2.3.5 *ELM and the test of time***

In a recent review of the ELM model, Kitchen, Kerr, Schultz, McColl, and Pals (2014), raised concern about the degree to which the model is applicable today in the age of digital communication and social media. Kitchen and colleagues also criticized the model for being primarily descriptive and lacking predictive power. Schumann, Kotowski, Ahn, and Haugtvedt (2012), on the other hand, argued that the ELM model has stood, and still stands the test of time and different contexts. Furthermore, Schumann and colleagues pointed to how the model's extensive use has benefitted many applied settings.

#### **2.3.6 *Implications and concluding remarks***

In a defense context, individual differences in NFC is deemed important in many contexts and on many levels – on a societal level, on an international political level, on an individual level, and on an organizational level. For example, a population high in NFC would be more resilient

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to enemy attempts at influence and destabilization by for instance disinformation, because they will tend to seek out information from more sources and more closely evaluate the truth in the messages sent out relative to those lower on NFC. At an organizational level, this tendency may be demonstrated by a similar robustness towards for instance disinformation. Disinformation is in this report understood in broad terms - as information that may be anything from unfortunate to inaccurate to blatantly untrue. High NFC may even entail a human aid in the work against cyberattacks (i.e., hostile attempts towards technologically based information and information systems) because the tendency of individuals high in NFC to think and check more thoroughly may lead them to more easily both prevent and reveal that something goes amiss in the computer system. In order to promote the highest possible defense capability of the Norwegian society in a Total Defense context, the qualities associated with NFC should thus be important to foster within the Norwegian defense organization as well as by other organizations central in a civilian defense context such as the police, health services as well as the central providers of infrastructure. At an international political level, a high level of NFC may make it more difficult to destabilize international relations by for instance the systematic spreading of inaccurate information about other states' affaires. Hence, it would seem advantageous to foster a society and organizations where the qualities of NFC are boosted rather than subdued (for more on the organizational and cultural contexts, please see Chapters 4 & 5).

If we want personnel in the Norwegian Armed Forces that do not revert to heuristics when the stakes are high, following the research on uncertainty orientation, we should foster the value of autonomy in the organization, both in order to attract uncertainty-oriented people as well as cultivate this characteristic. In a similar vein, the research on learned helplessness (e.g., Maier & Seligman, 1976) indicates that it is important to foster individual autonomy in order to motivate personnel for speaking up, taking initiative, and assuming responsibility. In a cross-cultural perspective, one may expect that people in cultures that are high in power distance (cultures where a difference in actual and experienced power between individuals in a hierarchy is more important; Hofstede, 2001) and/or high in uncertainty avoidance (cultures where ambiguity is avoided and rules play a more important role; Hofstede, 2001), are also more certainty oriented. Indeed, Shuper, Sorrentino, & Otsubo (2004) found a relationship between uncertainty avoidance at the cultural level and certainty orientation at the individual level of analysis (see Chapter 5 for more on cross-cultural issues). Norwegian culture, defined as low on both power distance and uncertainty avoidance (e.g., Hofstede, 2001), may be seen as advantageous, in terms of making people more uncertainty oriented and thus, less prone to heuristic processing in situations with high stakes and high relevance.

On the other hand, Soeters (1997) found that military personnel generally tended to score higher on power distance and uncertainty avoidance relative to the civilian population. This was attributed to military organizations traditionally being more hierarchic and rule-based than the average civilian organizations. The research on certainty orientation indicates that this trend for military organizations may not be the most advantageous in terms of attracting and developing personnel that are most likely to have high cognitive elaboration in high stake situations. In the context of increased use of influence operations in international conflicts (Diesen, 2018), having personnel with a high probability of elaboration would be deemed advantageous. However, in

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Soeters' research Norway proved to be an exception, in terms of military personnel not scoring higher on power distance and uncertainty avoidance relative to the civilian population. Also, military personnel from Canada, France, Belgium, and the Netherlands were exceptions in regard to uncertainty avoidance. If this research holds true, it indicates an advantage for some of the NATO countries' armed forces, but a disadvantage for others (i.e., the USA, the UK, Germany, Italy, Spain, and Hungary). It should be noted that Soeters' research remains to be confirmed by subsequent studies. See also Chapters 4 and 5 for more on organizational and cultural issues.

This chapter has reviewed research indicating how and when a person is likely to elaborate/use central processing strategies and when a person is likely to use more heuristic strategies of cognitive processing. Many situational, message, and receiver differences interact to determine the degree to which a message is elaborated upon. Heuristic cues and message quality may interact and determine whether and in what way any influence is exerted. The general thought is that central processing strategies are advantageous because it means a thorough evaluation of the information or message confronted with rather than a mere reliance upon heuristic cues.

In a defense context, understanding both how to exert influence, in terms of reaching the military organization and the civilian population with important information, and how to avoid being influenced by hostile influence attempts from adversaries, constitute important bases for dealing with information and communication. In general, the literature focus is on how people are influenced. How to withstand attempts at influence has not been the main issue in the literature presented. Nevertheless, withstanding attempts at influence requires that people, military or civilian, are able to determine the truthfulness of messages or information they are faced with. This would presumably also require a careful evaluation of the information and the source, meaning that central processing is used. Undoubtedly, though, there is a need for research that takes on the issue of how to avoid being influenced more directly.

As we saw, for instance during the 2016 US presidential election, information that is quite truthful may also be leaked at strategic moments with the aim to gain a certain effect. This type of influence operations is much more demanding to reveal for individuals, organizations, and the population as a whole. Unfavorable yet truthful information about the Norwegian Armed Forces /**defense organization** may also be leaked to the Norwegian population or to our allies at critical moments, which may hamper our ability to defend ourselves. The media may also be played by adversaries if they are not critical to the time, source, and content of new information, as was also exemplified in the US presidential election. These issues raise some important questions. What can we do to prepare ourselves? Can we afford not to prepare? Can we limit ourselves to prepare the military organization or do we need to prepare important civilian institutions like the police, health, and media, or indeed the population as a whole?

## **2.4 Technology-mediated influence: The internet and social media**

McKenna & Bargh (2000) suggested four key distinctions of online interactions: the possibility of greater anonymity, physical appearance being less important, physical distance no longer

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being a barrier for extensive interactions with others, and having greater control over the time and place for interactions. The first point is perhaps the most important, as anonymity has been found to decrease self-focus on internal standards of behavior (e.g., Matheson & Zanna, 1989), as well as remove the possibility of being socially condemned. Internal standards and social settings are important factors in forming and controlling people's behavior (e.g., Hewstone, Stroebe, & Stephenson, 1996). The lack of these control factors may therefore explain a considerable part of what is often labelled trolling behavior (i.e., antisocial behavior that deviates from what is deemed acceptable human behavior; see e.g., Cheng, Bernstein, Danescu-Niculescu-Mizil, & Lescovec 2017), frequently found in net-based communication that allows anonymity. Behind the protective veil of anonymity it appears that a surprisingly large amount of people stop adhering to regular norms of behavior. This trolling behavior can then be exploited by adversaries who wish to exert influence in a society or parts of a society. It can be done in a number of ways. For instance, putting the focus on provoking information, whether blatantly incorrect or partly true, may effectively make predisposed individuals exhibit trolling behavior. Additionally, trolling behavior in the population also works as a camouflage for so-called troll factories, that is, machine or human-based production of trolling communication aiming to exert some kind of influence (e.g., the Internet Research Agency in St. Petersburg, see e.g., Linwill & Warren, 2018). Moreover, it becomes difficult to discern the messages originating from troll factories from the messages originating from real people engaging in trolling behavior. Such troll factories can then also provide the real individuals engaging in trolling behavior with a false impression that their behavior and opinions are representative of a bigger group than the few individuals that they in reality might be. This may in turn both increase the polarization of opinions and further exacerbate the behavior (see Chapter 3 for more on group effects). For more on trolling behavior in social media communications and a more in depth presentation of social media influence, see Bergh (2019).

In online interactions, the meaning of any information on social category (e.g., gender, ethnicity, religion, etc.) may be inflated due to the lack of other information, leading to an intensified social categorization process (i.e., the tendency to perceive differences between categories or groups and similarities within categories or groups as greater than they objectively are; see Chapter 3 for more on this process). In this way, the characteristics of online interactions facilitate more stereotyping. Also, the forming of groups based on common interests or attitudes may lead to an exacerbation of the stereotyping processes; the "we" and the "them" are made very salient as other information is missing. Group conflicts may thereby be aggravated. This links to research at the group level on social categorizations, social identity (e.g., Tajfel & Turner, 1979; see Chapter 3 for more on this), and deindividuation (i.e., loss of self-awareness and self-regulation, and anonymity effects; e.g., Zimbardo, 1969; Reicher, Spears, & Postmes, 1995).

The context of technologically mediated communication has been found to influence people both through cognitive elaboration and through heuristic processing. Information/text messages have been found to elicit more elaboration (e.g., Guadagno & Cialdini, 2005), while films and pictures open for more heuristic processing. Even online ads that frequently disrupt our web browsing, which we do not even pay any attention to, seem to have a persuasive effect.



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Research by Guadagno & Cialdini (2005) and Guadagno, Muscanell, Rice, & Roberts (2013) further indicate that Cialdini's six persuasion principles are not all equally effective in technologically mediated communication, although they are all often used in internet scams (Muscanell, Guadagno, & Murphy, 2014). Consistency/commitment appears to work also in online contexts, whereas authority has been found to result in less persuasion online (Guadagno & Cialdini, 2005). Liking, on the other hand, appears to be effective only in some online contexts (Guadagno & Cialdini, 2005; Guadagno et al., 2013). While there are also indications of persuasive effects of reciprocity and social proof in online situations (Hamari & Koivisto, 2015), the principle of scarcity appears not to have been researched in computer-mediated communication.

Guadagno & Cialdini (2007) found gender differences in the tendency to be affected by the media of communication; males were more susceptible to online persuasion whereas females were more susceptible to face to face persuasion. They also found that if the communicator was perceived to belong to another group than the recipient (outgroup), written online mode (as opposed to face to face) appeared to attain more influence in both genders. This was understood to be because reminders of different group belonging, which is counterproductive for persuasion, are at a minimum in technologically mediated communication. However, this finding is not clear-cut, because, as indicated above, the lack of other information can also make diverging group belonging more salient and rather exacerbate the process of stereotyping. Hence, on the one hand it seems that a lack of information other than group belonging in online interactions may exacerbate the negative effects of stereotyping. On the other hand, online interactions may also serve to decrease the negative effect of different group membership in persuasion by reducing the number and vividness of cues to group belonging. More research is needed to better understand the various effects of technologically mediated communication.

## **2.5 Priming and framing**

Priming and framing are related concepts that concern the message context. Priming is information that increases accessibility of a message at encoding (i.e., during the process of storing something in memory) or information that makes previously encoded information more accessible from memory (e.g., Fiske & Taylor, 2017). For example, asking people about what they deem to be the most problematic crime in the area, may lead them to think about crime and consequently rate crime as a bigger problem relative to other issues than if the question about crime had not been asked. Moreover, the crime question leads to an activation of memories of crime issues which then color the overall evaluation of what issues are important. The most effective primes are given a short time before the message (e.g., Fiske & Taylor, 2017). The longer the time between the prime and the message, the lesser the effect. If, on the other hand, the prime is too blatant and interpreted as an attempt to influence, the effect of the prime can be in the opposite direction of what was intended (Lombardi, Higgins, & Bargh, 1987; Newman & Uleman, 1990). The recipient may in such circumstances take the opposite stance of what is communicated in the prime.

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Priming can be used and abused to influence the general opinion by putting focus on issues which are advantageous for a certain party. This is frequently used in politics, but can also inadvertently be used by the media. For instance, immigration related issues are frequently presented in the media. This may be caused by the media representatives also being victims of the group effects (see Chapter 3), by uncritically reporting what some political parties or interested parties feed them (for more on this, see Bergh, 2019), or because they think such news will sell. The media also feed into stereotypical beliefs rather than challenging them (e.g., Dahlstrøm, Nesheim, & Nyjordet, 2017; Wood, 1994). Such media caused priming has some important side-effects; it can for instance make the population primed to look for a political party that focuses on the issues presented in the prime.

Framing concerns the background context of the message (Kahneman & Tversky, 1984; Tversky & Kahneman, 1981), which may serve to sway an impression or a decision in a wanted direction. For instance, given that the relative probability of losses and gains are equal, people tend to avoid choices that are phrased in terms of possible losses, whereas they are more likely to go for choices that are phrased in terms of possible gains (e.g., Roney, Higgins, & Shah, 1995). The message frame of reference can also serve to make the message stand out as either positive or negative. For instance, informing a stranger of a student's performance, by saying he/she was either among the best or among the poorest in the class will color the interpretation of the actual mark that this student obtained. Framing effects have been found to be pervasive and to occur across settings (Dunning, 2012; Fiske & Taylor, 2017).

Different texts often have characteristics that define the genre they can be put into (for more on genres, see Alme, 2019a). Such genres can function as frames that enable the recipient to interpret a text or message appropriately. However, using a certain genre inappropriately may also serve as a framing technique to gain influence. As described by Alme (2019a), the news genre is used, or more correctly misused, by those construing fake news, in order to deceive the reader or recipient into believing that the news are factual. Consequently, adversaries may exploit the framing function of genres in order to gain influence in a population or organization.

## **2.6 Statistics versus case histories: The base-rate fallacy**

Research has also looked into how people weigh or interpret base-rate information (i.e., general and statistical information about the occurrence of a phenomenon) versus case histories. People tend to exaggerate the importance of case histories relative to base-rate information, referred to as the base-rate fallacy (e.g., Fiske & Taylor, 2017). The base-rate fallacy can explain why people often tend to build their attitudes or make their choices based on case histories rather than information in the form of statistics, research, or general information. This effect can be attributed to the vividness of case histories, its ability to evoke emotions, and hence, being more easily encoded and retrieved from memory (Fiske & Taylor, 2017).

The media often use case histories that make the news vivid and evoke emotions. This may for instance be done to increase the sales of newspapers, increase the number of viewers, or gain clicks. The down side of the media's use of case histories is that it may lead to skewed

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impressions about what is really going on. Actors in the media may not always be conscious of or concerned with their influence on how people see the world. The reports of how blatantly untrue news spread much faster on the internet than factual news are examples of how vividness and case histories catch our attention (Vosoughi, Roy, & Aral, 2018). This can easily be played by an adversary wishing to gain influence over the population. The stories leaked need not be untrue though, it is enough that they are vivid. For instance, case histories can be leaked to influence the general opinion in a wanted direction. Governmental attempts at countering with more general information about the issues, may then fail. The belief that one may successfully counter vivid case stories with facts and general information is naive when considering the research in this area.

However, making the diagnosticity of the base-rate information clear or highlighting it can induce people to use the base-rate information more actively (Ginossar & Trope, 1980). Moreover, in order to increase the probability that general information is considered and used by an audience it needs to be perceived as salient. It also helps if the information is brief and clear and presented at an early stage, rather than after an opinion has been formed (Chun & Kruglanski, 2006).

This research also indicates that, ideally, important factual information should be disseminated in advance of an influence attempt, or at least at an early stage. This would demand a vigilance towards what issues may become important and which topics are discussed in the different media, as well as doing preparatory information work that may help prepare for and create a robustness towards influence attempts. For instance, if people in Norway and leaders in our partner/allied nations (that we depend on militarily to defend the country), are generally well informed about the work of the Norwegian Armed Forces, they may be less prone to exaggerating the importance of unfavorable (but true) case histories or believing untrue case histories spread by adversaries. This links back to the chapter on attitudes (Chapter 2.1), concerning how well founded attitudes are more robust towards influence.

## **2.7 Attribution**

Attribution in psychological research is about how people understand the social world by inferring causal relations and dispositional characteristics of other people (e.g., Fiske & Taylor, 2017). For instance, making sense of other people's behavior, involves attributing causes to the behavior observed. Some of inferences made are near to automatic while others are the fruit of extensive cognitive elaboration.

People more or less automatically make attributions about other people's dispositions based on information about their behavior. Situational information may subsequently be used to qualify this first impression, but only if their motivation to do so is high, and/or the situational information is compelling or salient. This is considered a source of attributional bias. People tend to be biased in terms of attributing others' behavior to dispositions rather than situational factors – called the fundamental attribution error (Heider, 1958; Ross, 1977). This finding has been found to be stronger in Western cultures higher on individualism relative to East Asian

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countries higher on collectivism (Miyamoto & Kitayama, 2002; Morris & Peng, 1994). Stronger ties to the ingroup in collectivist societies may explain this variation; the difference in bias may be due to real differences in situational pressures on behavior in the cultures referred to.

Research has found that people also make other errors when inferring causal relations. Notably, people will tend to make attributions that are both self-serving and self-centered (Miller & Ross, 1975; Ross & Sicoly, 1979). This means that people tend to taking credit for success, denying responsibility for failures, and taking credit for more than one's share of a collaborative effort. In line with this, people also make defensive attributions (Burger, 1981), which means that responsibility for negative outcomes is attributed to others. There is also a tendency for people to perceiving one's own interpretations as correct – called naive realism (Pronin, Gilovich, & Ross, 2004). On the positive side, the biases contribute to keeping up a positive image of oneself, provide self-confidence and a positive outlook on the future, and motivate for future behavior – all of which in turn also protects the individual from depression (e.g., Fiske & Taylor, 2017; Peterson & Seligman, 1984; Rosenhan & Seligman, 1995).

Combining naive realism with self-serving attributions and the fundamental attribution error, it is easy to see how conflicts arise between individuals, groups or societies. People will tend to blame others if something negative happens, attribute it to their dispositions rather than to the situation, and believe that their own way of interpreting the world is the correct one. Adding this to the insights that the next chapter will bring on group conflict, group identity, and stereotyping will further explain some of psychological basis for human conflict. Conflict is in this report and in line with its use in psychological research understood in broad terms, from lesser disagreements between individuals to major crises and war between nations.

Attributional biases may furthermore contribute to the negative effects of the base-rate fallacy described above (Chapter 2.6). People's tendency to exaggerate the importance of case histories relative to base-rate information combined with the tendency to attribute cause to dispositions rather than to situational constraints can give singular negative case stories great power to sway the attitudes of a population towards individuals, groups, organizations or nations. As the next chapter will delve further into, differences in group belonging can further exacerbate these effects.

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## 3 Theories and research at the group level

Belonging to a group or identifying with a group has effects on how we perceive the world, on our attitudes, on what we remember, on who we trust, as well as on how we behave (e.g., Bjørnstad, Ulleberg, & Fostervold; 2013; Brown, 1988; Fiske & Taylor, 2017; Hogg & Abrams, 1996). As we all exist in a social reality, group identities and processes are essential to understanding influence at individual, group, organizational or societal levels.

### 3.1 Social categorization, stereotyping, and Social Identity Theory

Categorical perception and memory is at the basis of group psychology; people tend to perceive and store information in categories, including social information (e.g., Fiske & Taylor, 2017). Social categories into which people put other people and their behavior can be based on previously encountered examples, general information, and/or prototypes generated by the available information in memory (e.g., Fiske & Taylor, 2017).

A number of cognitive biases can be explained by the categorization process: categorical differentiation, stereotyping, illusory correlation, memory distortion, and attributional errors (for an overview, see e.g., Brown, 1988). Categorical differentiation is the cognitive process in which the differences between groups or categories are exaggerated and the similarities within them are enhanced (e.g., Tajfel, 1981; Mullen & Hu, 1989). This process helps to simplify and systematize the individual's social world and is as such functional. Stereotyping is a type of categorical differentiation; it is the process in which similarities between members of other groups are exaggerated. Simply assigning people a group identity, makes us view them in simpler terms, that is, more similar to each other (Tajfel, 1981; Tajfel, Billig, Bundy, & Flament, 1971; Tajfel & Turner, 1979). Moreover, Tajfel suggested that stereotyping can be viewed as negative categorization of people (1981). The process of categorization also entails illusory correlation, where we mistakenly believe that for instance characteristics of members of other groups (i.e., *outgroups*) are correlated when they in fact are not (e.g., Hamilton, 1981). We also see a distortion of memory, where what is understood to be typical of a category is more easily remembered than what is not typical for the category, and where unfavorable information about one's own group is more easily forgotten than unfavorable information about another group (Howard & Rothbart, 1980; Taylor, Fiske, Etcoff, & Ruderman, 1978). This means that behavior seen as stereotypical for a group will be more easily remembered than what is perceived as less typical. Stereotypes can also lead to false memories about other group members' behavior (Hamilton & Rose, 1980).

Negative stereotyping is closely related to self-serving and self-centered biased attributions, presented above (Chapter 2.7). These biases have also been found to apply to the group level (e.g., Brewer & Brown, 1998; Pettigrew, 1979). This means for instance that there is a tendency to attribute positive actions made by members of one's own group (i.e., *ingroup*) to the ingroup's qualities and negative actions to external causes, while the reverse tendency applies to the attributions of the actions by outgroup members. Members of outgroups are therefore easily

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attributed unfavorable characteristics rather than seen as acting according to the situation they are in.

Self-categorization is the process which transforms individuals into groups. Social Identity Theory (Tajfel & Turner, 1979) linked the categorization effects to the perception of one's self. The processes of categorical differentiation, stereotyping, illusory correlation, memory distortion, and attributional errors maximize the positive distinctiveness of the ingroup at the expense of the outgroup. These processes thus serve to confer a positive self-evaluation and create feelings of self-worth and self-esteem.

Cultural influences on the categorization processes have also been found; collectivism (as opposed to individualism) makes people think and behave more in line with their group/social belongings than their individual needs and desires, and have been found to make people differentiate more between ingroups and outgroups (e.g., Earley, 1989; Gudykunst et al., 1992; Hofstede, 2001; Triandis, 1995; Veiga & Yanouzas, 1991). Moreover, cultural differences can impact the degree to which people tend to categorize (for more on this and other cultural influences, see Chapter 5).

### **3.2 Group conflict**

Tajfel (1970) and Billig & Tajfel (1973) found that experimentally created groups who only differ in name, who have no interaction, and who are not in a competitive situation, so-called *minimal groups*, still demonstrate ingroup favoritism. Minimal groups are viewed as groups only in cognitive terms. Simply categorizing oneself and other people as belonging to different groups is enough to cause stereotyping, biased attributions, and in turn, group conflict.

Furthermore, being part of a group tends to make us more extreme in our opinions and actions, known as the group polarization effect (for an overview, see e.g., Brown, 1988). Adding to this is also the anonymity that a group can provide. As indicated in Chapter 2.4, anonymity has been found to decrease self-focus on internal standards of behavior. Both group polarization and personal anonymity may thus also explain behavior committed within a group context that one would not see from the same individuals acting outside a group context.

Real dissimilarities between groups, scarce resources, and competing goals are elements that may further exaggerate the effect of belonging to different groups (Brown, 1988; Hogg & Abrams, 1988; Sherif, 1966; Sherif & Sherif, 1969). Context specific elements such as competition also have the effect of making the social categories more salient and thereby cause an increase in the intergroup differentiation (e.g., Doise & Sinclair, 1973). Hence, there are interaction effects between the situational and the cognitive/emotional influences, which can make the group effects surprisingly strong. It has further been found that people act more competitively when they are in a group context than when they act as individuals (e.g., Schopler et al., 2001), which just adds to the importance of understanding the group context.

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### 3.3 Counteracting group biasing effects and group conflict

Multiple identities/group belonging has been found to counteract the negative effects of group belonging (Hogg & Abrams, 1988). This is because having more identities makes people less dependent on one identity and therefore less susceptible to feeling threatened by people from other groups.

Common goals and interdependence across groups have also been found to counteract the negative effects of group belonging and instead promote cooperation (e.g., Sherif, 1966; Sherif & Sherif, 1969).

### 3.4 Implications

In sum, social categorization and differentiation, illusory correlation, stereotyping, distortion of memory, social identity, and biased attributions all add up to produce a strong group biasing effect. Belonging to a group or identifying with a group will consequently influence how we interpret a message, how we may be influenced, and whether and how we may act on it. For example, we see that people are much less critical to news shared on social media by someone from an ingroup than by news presented by someone from an outgroup. On the internet, people also tend to seek out societies that they identify with, which in turn makes people less critical and more positive to the content of any information found there.

Belonging to the same group can provide many of the factors identified to induce persuasion (Chapter 2.2). Most notably, we tend to like members of our ingroup better than those belonging to outgroups (due to familiarity and perceived similarity) and we seek social proof primarily from those similar to ourselves, that is, from our own group. Belonging to the same group may also induce a feeling of reciprocity. Consistency may also apply to the group as a whole, that is, group members may want to think and behave according to group standards. Finally, one may perceive members of one's own group to have more authority, due to the ingroup positive biasing effect.

Whether the communicator is interpreted to belong to our ingroup or to an outgroup thus entails quite different susceptibilities to persuasion. Such group effects on persuasion may also be exploited by an adversary wanting to gain influence in certain parts of the population or in key organizations – both military and civilian. Being perceived as an ingroup member gives a great advantage in terms of persuasion, and infiltration may therefore be used as a means to achieve this. Analogously, it is a great handicap to be perceived as an outgroup member if you want to reach someone with a message.

Increased polarization between groups and a strengthening of group identities through internet based social groups, functioning as echo chambers, augment the described challenges of group effects on persuasion. Group polarization can endanger both the general ability to communicate within a society, as well as the ability of government representatives to communicate with the population. In a national crisis situation involving subgroup conflicts, any action on the one part

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will tend to be attributed to negative characteristics by the other part, which then may lead to more stereotyping, more negative reciprocation, and consequently, an escalation of the conflict between the groups.

International relations entail all the challenges caused by differences in groups (see also Chapter 5). Indeed, nationality is a central part of our identities, and national differences are powerful group divides. Overarching groups, with common goals and identities (like the EU or the UN), are advantageous because they contribute to decreasing the negative effects of belonging to diverse nationalities and having dissimilar cultures, languages, and often also competing goals. Common goals and interdependencies are especially central in the research presented above in reducing group divides and putting a damper on conflicts between groups. Such supra-national groups or entities may thus have contributed to peace between many nations and districts that have historically often been in conflict or at war with each other.

An interesting new development today is the divide within nations between those who have adopted a supra-national identity (e.g., EU or World identity) in addition to their national identity and those who do not identify with the greater international community at all. Such identity differences may underlie many intra-national divides in the Western world, lucidly exemplified in the UK by those for and against Brexit. It seems that the supra-national identity adopted by some, is interpreted as a threat to the national identity of others, who may react by a national protectionist type of response. This may to a certain degree be based on real clashes of interest between the internationalists and the nationalists, however, the distinctions in identity dividing nations internally in ingroups and outgroups will effectively exacerbate any real clashes of interest. Both real and false information about dividing issues may add to the already existing division. Hence, bringing the public attention towards splitting issues, whether based on true or false information, can be an easy way for adversaries to influence a society in a negative direction.

The media can easily and even inadvertently exacerbate any national divides. This can be done simply by putting attention to dividing issues, as well as by describing dividing issues in less than accurate terms. As the media seek to create headlines, presumably in order to sell their news, we quite often see inaccuracies in the presentations of incidents or of research results that nourish subgroup divides. For instance, we could recently read on the first page in one of Norway's biggest newspapers *Aftenposten* that "Lower social layers loose the most on immigration" ("Lavere sosiale lag taper mest på innvandring"; Johansen, 2019). The research that this headline refers to did not even research the issue of whether the Norwegian people have lost or gained on immigration. The real conclusion alluded to only in smaller print at the end of the article was that the relative difference between the lower and middle classes is bigger in areas with relatively more immigration. This inaccurate headline has the power to effectively increase divides between immigrants and locals. The article falsely claims the support of research on an allegation, which is not only fit to sell newspapers, but also to scapegoat all immigrants and consequently worsen divides between groups. The media presenting such inaccuracies will also suffer a loss of trust – especially from the immigrant groups.



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Moreover, the media may often aggravate divides between groups both within and across societies as well as breach the trust by presenting inaccuracies. Various subgroups may therefore turn to alternative sources for news and updates, sources that they feel better represent their group or viewpoint. This move to alternative media may evidently also be caused by other reasons, such as having more extremist attitudes. Whatever the reason for the move to alternative media for news and information, it has several challenges. The news feeds in the alternative media may further exacerbate the divides by each site serving a specific group and by nourishing the “us and them” paradigm. Reaching a common understanding of a situation will be increasingly difficult if subgroups get their news from different sources serving diverging interests. The alternative media may also be sources that the government may find hard to reach and even harder to collaborate with, in a situation of crisis. The alternative media may even be located in other countries that also may be a party in a potential conflict situation. Thus, the challenges described here involving the media and national subgroups also become a challenge for our society in a defense context.

Norway has moved from being a homogenous society to a more heterogeneous society on many levels of understanding (e.g., in terms of ethnicity, religion, political preferences, world view, etc.). Based on the research above, this entails a greater potential for intergroup conflicts within a society. In a heterogeneous society, as opposed to a homogenous society, there will also be greater risk that societal subgroups do not perceive governmental institutions and the military as representing their own group’s interests. For this reason, governmental institutions and the military may be perceived as outgroups by a number of citizens. This is exemplified in Ukraine, where the Russian-speaking part of the population seemed to be less than convinced of their Ukraine government representing their interests. In Norway, we may imagine that a refugee crisis could have dividing effects on population subgroups. The crisis may be instigated or aggravated by adversaries aiming to destabilize the country. Along with the challenge of various groups getting their news from different sources, being perceived as an outgroup may make it more difficult for government institutions to inform the whole population in a potentially chaotic situation that may also involve much disinformation. Many questions are pressing. Do we as a nation have a full understanding of our new situation? And how is it affecting our ability to defend ourselves – especially in an information warfare and total defense context? What should be done to prepare both civilian institutions and the military? These are just some examples of questions that there is a need to answer in future research.

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## **4 Theories and research at the organizational level: The organizational context**

Military organizations are facing an increasingly wide spectrum of threats, of which cyber and hybrid threats (i.e., threats to technologically based information systems or computer networks and threats that are not included in the conventional understandings of war, including influence operations) are very central. As the wealth of information and complexity of threats increase, the sharing of information and the awareness and understanding of tasks and responsibilities in the organization is increasingly essential for good decision-making and organizational effectiveness (e.g., Bjørnstad & Ulleberg, submitted; STO-TR-SAS-085, 2014) - in turn also affecting the organization's ability to reach its goals (e.g., Alberts, 2011; Kozlowski & Ilgen, 2005; STO-TR-SAS-085, 2014). This includes the organization's ability to withstand hostile activities aimed at breaking down the defense organizations' ability to communicate, share, and understand information correctly. Such activities may be in the form of intrusions into computer systems that cause them to malfunction or fail, by infiltration in the organization, or by spreading information that may be anything from disadvantageous or ill-timed for the defense organization to inaccurate to blatantly untrue (i.e., disinformation). Based on the research cited above, efficient organizational processes may be understood to be an essential part of the work to protect against cyber and hybrid threats, comprising the threats from adversaries attempting to gain unwanted influence.

### **4.1 Advantages of democratic organization**

Research from military exercises in both national and international contexts at lower (tactical) and higher (operational) hierarchical organizational levels, have linked flatter hierarchies and more decentralized organizational processes (i.e., democratic organization) to better information sharing, higher awareness of tasks and responsibilities and better decision making (Bjørnstad, 2011). More recent survey data from a Norwegian military organization suggests that flat structure, decentralized processes, alignment between structure and processes, flexibility, competence, trust, and few obstacles to information sharing positively influence organizational effectiveness, in terms of better information sharing, higher shared awareness of tasks and responsibilities, and better decision making (Bjørnstad & Ulleberg, submitted).

#### **4.1.1 Organization and need for cognition (NFC)**

Because more responsibility is distributed to the lower levels in the hierarchy in democratic organizational forms, personnel at the lower levels become more involved in the decision-making processes compared to those in more hierarchic and centralized organizational forms. Moreover, there are more factors motivating subordinates to think for themselves in a democratic type of organization. A democratic organization may therefore be understood to promote a culture where there is a high level of need for cognition (NFC; see Chapter 2.3), and hence, high probability of elaboration in the organizational members' cognitive processes. As

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indicated in Chapter 2.3, this may create robustness against enemy influencing attempts, such as disinformation and infiltration.

#### **4.1.2 Organization and knowledge/competence**

With more responsibility comes ideally more knowledge. Responsibility and information usually go hand in hand, as information is crucial to making qualified decisions. In a well-functioning organization at least, access to information follows responsibility and the authority to make decisions. More personnel should thus have thorough insight into relevant issues concerning both the internal organizational functioning (immediate context) and the external situation (wider context) in a democratic as opposed to a hierarchic and centralized type of organization. This knowledge and understanding may make it easier for personnel at all levels to reveal enemy activity aiming to influence the organization, involving for instance the manipulation of information, and/or any infiltration in the defense or collaborating organizations.

#### **4.1.3 Organization and job involvement**

*Job involvement* as a concept was launched by Lodahl & Kejner in 1965, but has since then been both defined and measured in various ways, focusing on the job's influence on a person's self-esteem (Lodahl & Kejner, 1965), identity (Lawler & Hall, 1970), or cognitive identification with work (Kanungo, 1979). Paullay et al. (1994) defined job involvement as the cognitive preoccupation with, engagement with, and concern for one's present job. Related constructs like *work centrality* and *work commitment* refer to attitudes and orientations to work in general (Paullay et al, 1994), while *organizational commitment* refers to the specific commitment or emotional attachment that employees have to their organization (e.g., Mayer & Schoorman, 1998). All these concepts have been found to be highly related but distinct constructs in several studies (Brown, 1996; Cooper-Hakim & Viswesvaran, 2005; Halberg & Schaufeli, 2006; Mathieu & Farr, 1991). Brown (1998), Butts et al. (2009), and Halberg & Schaufeli (2006) furthermore found all these concepts to be positively related to a high degree of autonomy in the workplace - that is, a decentralized organization. Job involvement has been found to influence the effort put into one's job (Brown, 1996), and can as such be understood as a work motivational factor (Moynihan & Pandey, 2007). Because job involvement promotes job effort and motivation, which in turn also promotes cognitive elaboration (Chapter 2.3), job involvement may be understood to promote robustness against enemy activity aiming to gain unwanted influence, involving for instance disinformation and infiltration.

#### **4.1.4 Organization, culture, and erroneous decision making**

Alongside being able to discover enemy activity such as infiltration or manipulation of information within the armed forces or collaborating organizations, the effectiveness of the defense organization is also dependent upon being able to avoid erroneous decision making. Research has shown that distributed leadership and subordinates' propensity to question their superiors' decisions and take responsibility for their own actions to be essential in order to avoid erroneous decision making (e.g., Baran & Scott, 2010; Bienefeld & Grote, 2011, 2011b;

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O'Sullivan, Moneypenney, & McKimm, 2015). In a democratic organization, subordinates are more involved in the decision-making process and there is less distance between the upper and lower levels of the organization, both in terms of fewer levels in the hierarchy as well as in terms of the authority difference between these levels. Democratic organization should consequently make subordinates more motivated to, and less afraid to, question and contradict their superiors. Hence, democratic organization may be seen as an organizational means to minimize erroneous decision making.

Democratic organization may be seen as an organizational means to enable personnel at all levels to reveal potential enemy activity aiming to gain unwanted influence involving for instance the manipulation of information, and/or any infiltration in the organization. As suspicions of such activity may be somewhat uncertain at first, the feeling of being empowered and responsible may stimulate subordinates both to investigate and to inform their superiors of such suspicions at an early stage.

Cultural differences in power distance, that is, variations in how people relate to each other in a hierarchy (e.g., Hofstede, 2001), have been found to influence the organization and decision-making processes (see Chapter 5 for more on cross-cultural issues). Power distance (Pd) is defined as the extent to which the less powerful members of institutions and organizations within a society expect and accept that power is distributed unequally (Hofstede, 2001). High power distance has been linked to erroneous decision making in high-risk environments, exemplified by the crash of Korean Air Flight 801 in 1997, where the co-pilot did not speak out before it was too late (e.g., O'Sullivan, et al., 2015). A high power distance culture makes it less acceptable, and therefore more difficult, for subordinates to question superiors' decisions, which explains the co-pilot's hesitation to question the decisions of the first pilot. Hierarchy plays a more central role in organizations in high power distance cultures, and power distance may as such be understood as a cultural vulnerability to erroneous decision making. Norway and the other Scandinavian countries have been found to have low scores on power distance (e.g., Hofstede, 2001), which may be seen as an advantage in this context.

## **4.2 Organizational model of effectiveness and robustness towards influence**

Building on the research presented above, most notably Bjørnstad (2011) and Bjørnstad & Ulleberg (Submitted), an organizational model has been developed in the context of NATO Human Factors and Medicine (HFM) Research and Technology Group (RTG) - 276 (Bjørnstad, in progress; Lichacz, Valaker, Zelik, Bjørnstad, & Stensrud, in progress). The model depicted in Figure 4.1 attempts to describe some of the relationships between factors presented above in this chapter, factors which are also anticipated to be central in making a military organization efficient in the context of cyber and hybrid threats including adversaries attempting to gain unwanted influence. The literature presented in this chapter suggests that democratic organization, defined as flat structure and decentralized organizational processes, has both direct and indirect effects on organizational effectiveness and robustness towards influence. Organizational effectiveness and robustness towards influence is operationalized as shared awareness, information sharing, and decision making in the model (for more on this, see

Bjørnstad, 2011; Bjørnstad & Ulleberg, Submitted). Job involvement and NFC are the two central individual level factors included in the model, both understood to be mediating factors. power distance (Pd) and uncertainty avoidance (Ua) represent the cultural context factors, which are anticipated to moderate the effects of organizational structure and processes. uncertainty avoidance (Ua) is defined as the extent to which the members of institutions and organizations within a society feel threatened by uncertain, unknown, ambiguous, or unstructured situations (Hofstede, 2001). Research has indicated that power distance and uncertainty avoidance are central constructs and valid measures of national differences also in military settings (Soeters, 1997; Bjørnstad & Ulleberg, 2017).

The model is included in this report primarily to exemplify and visualize the interconnections between some of the individual level factors relevant for influence and the organizational and cultural contexts and how all the factors together interact and are anticipated to be linked to organizational effectiveness and robustness towards influence. For a more in depth description of the model and of the factors less focused on here, please be referred to the above cited research (Bjørnstad, 2011; Bjørnstad & Ulleberg, Submitted; Bjørnstad, in progress; Lichacz et al., in progress).

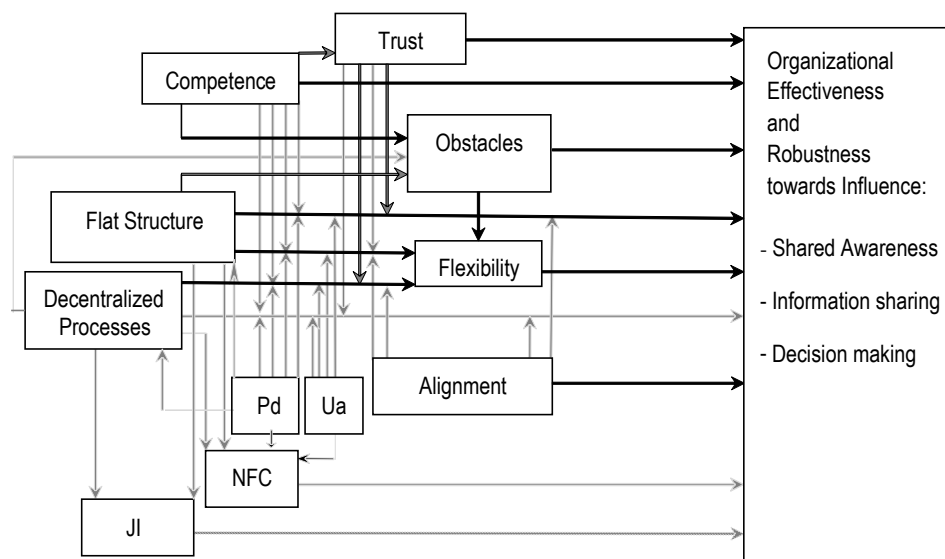


Figure 4.1. Organizational model of effectiveness, including robustness towards influence (JI = Job Involvement, NFC = Need for Cognition, Ua = Uncertainty avoidance, Pd = Power distance, and Alignment = Alignment of Structure and Processes). The grey lines indicate hypothesized relationships, whereas the black lines indicate relationships that have achieved supported in the above cited research. All lines indicate positive relationships except the relationships of Obstacles to information sharing.

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## **5 Theories and research at the national level: The cultural context**

The cultural context referred to in this report concerns cultural differences at the national or societal level, understood as societal differences in values that influence behavior (see e.g., Hofstede, 2001; Triandis 1995). Moreover, this chapter attends to national cultural differences, which means that differences at sub-societal levels are not the focus here. Consequently, there may be many subgroups within the national level cultural description that will be less well represented by the national average. As the preceding chapters have indicated, differences in culture may affect individual-, group-, and organizational-level factors relevant to understand influence.

The scope of this chapter is not to give an inclusive and in depth presentation of all cultural factors - rather, it seeks to give the reader an overall understanding and a few examples. The framework of Hofstede is used in order to give insight into some cultural differences that may have an impact on influence. Hofstede's research is probably the most well known and most influential in cross-cultural psychology, especially in terms of frequency of use (e.g., Adler, 1991; Hoppe, 1990, 1998; Kirkman, Lowe, & Gibson, 2006; Oyserman, Coon, & Kemmelmeier, 2002; Soeters, 1997; Triandis, 1994). There are many other frameworks, but contrasting the frameworks is beyond the scope of this report.

### **5.1 General effects of cultural differences on communication and influence**

Irrespective of the type and direction of the cultural differences, cultural differences per se may serve to exacerbate the effects of variations in national identities on human relations at inter-personal, inter-group, and inter-national levels (Chapter 3). For instance, the differences in culture can cause difficulties in understanding the behavior and the messages from people from other nations, causing both misunderstandings and increased feelings of separateness. Trying to reach people in another culture with a message also demands a thorough understanding of how the cultural context will affect the interpretation of the message. For instance, preaching individual benefits to people in a culture that puts the group first (i.e., collectivist cultures), will probably not be very efficient. Similarly, using authority as a persuasive principle, although quite effective in high power distance cultures, may be quite ineffective in low power distance cultures.

### **5.2 Individualism/collectivism, power distance, and uncertainty avoidance**

Thus far, this report has introduced the cultural dimensions of individualism/collectivism, power distance, and uncertainty avoidance, relating to individual, group, and organizational level factors having an impact on influence. Individualism/collectivism is one of the most researched topics and employed constructs in cross-cultural psychology (Oyserman et al., 2002), and refers to societal differences in group (collectivist) as opposed to individual (individualist) orientation

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(e.g., Hofstede, 2001). Group orientation is linked to close ties between people, whereas individual orientation is linked to loose ties between people. As indicated in Chapter 3, a collectivist culture, as opposed to an individualist culture, has been found to make people differentiate more between ingroups and outgroups, potentially exacerbating group divides. Chapter 2.7 presented research indicating that the fundamental attribution error (i.e., that people tend to over-attribute others' behavior to dispositions relative to situational factors) is stronger in cultures high on individualism relative to cultures high on collectivism. This was explained by stronger ingroup ties and situational pressures on behavior in collectivist societies. This cultural variation in attribution may cancel the cultural diversity in differentiating between groups in collectivist as opposed to individualist societies. Moreover, because collectivists over-attribute others' behavior to dispositions in a lesser degree than individualists, they may not have stronger outgroup biases than individualists, even though their stronger group focus would predict this. In this way, interactions between the effects of cultural differences may also cancel each other's isolated effects. A similar conclusion was made in Bjørnstad (2013), where it was found that collectivists were equally good at cooperating across cultural divides as individualists. The general finding that collectivists were better at cooperating and trusting other people (e.g., Cox et al., 1991) was deemed to cancel their tendency to differentiate more between groups. While Asian countries are typical examples of collectivist cultures, the USA ranges as the most individualist country (Hofstede, 2001). Norway is located in the mid-range, somewhat towards the individualist end of the scale (Hofstede, 2001).

Individualism/collectivism may also modify the effectiveness of the persuasion-principles. For instance, because of the importance of the group in collectivistic cultures, one may expect social proof or consensus to be a relatively more efficient persuasion principle in collectivistic as opposed to individualistic cultures.

As indicated in relation to individual and organizational factors (Chapters 2.3 and 4), societal differences in the tolerance for uncertainty and power differences between levels both in the organizational and societal hierarchies may affect in what degree its members are used to and consequently, are liable to think for themselves, speak up to avoid erroneous decision making, and be high on job involvement, NFC, critical thinking, and uncertainty orientation. The Norwegian culture is classified as low on both power distance and uncertainty avoidance (e.g., Hofstede, 2001), which may indicate a cultural advantage in terms of creating a cultural context that favors NFC, critical thinking, and uncertainty orientation, which in turn may help withstanding attempts at influence. However, as indicated in Chapter 3, increased societal cultural heterogeneity may mean that many subgroups are ill represented by this description. Cultures are also not constant; there will always be a development in either one or the other direction caused by a number of minor and major societal changes – including the effects of new or existing subgroups (e.g., Hofstede, 2001; Inglehardt et al., 2004). We need to be aware of which direction our society and organizations are moving – it may not always be in the direction that would foster robustness towards to unwanted influence. To make our society and organizations, military and civilian, robust against attempts at influence by foreign states or organizations, it may be advantageous to promote values and systems in line with low power distance and uncertainty avoidance.

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Uncertainty avoidance influences a population's tendency to follow rules and tradition ("the safe way") versus a population's tendency to want change – even in good times (e.g., Hofstede, 2001). Norway and Greece are examples of low and high uncertainty avoiding cultures respectively, and Germany is an example of a relatively uncertainty avoiding culture (e.g., Hofstede, 2001). At a political level we see for instance that Norwegian voters often opt for a change – even when the issues are few and the economy is good. In Germany, for instance, we often see the opposite – that even in times with societal difficulties and troubles people tend to choose what is safe, tried, and true. Uncertainty avoidance may also modify the effectiveness of the persuasion-principles. For instance, because of the importance of predictability and unambiguity in high uncertainty avoidance cultures, the consistency principle may be more efficient if used in high Ua cultures relative to low Ua cultures.

### **5.3 Masculinity/femininity**

Masculinity/femininity refers to a difference in whether equality, solidarity, and quality or equity, competition, and performance are the most defining of work and private life, the former referring to a feminine culture, that latter to a masculine culture (Hofstede, 2001). Masculine cultures also have relatively more focus on work careers and advancement, and favor assertiveness and aggressiveness over consensus and compromise. In feminine societies, there is more focus on social security and there is found little or no difference between genders in regard to their scores on this dimension. In masculine societies, men score significantly more masculine than women. On a political level, masculinity is reflected in a more adversarial discourse and a belief in solving national and international conflicts through force or fighting it out using its military capacities. Femininity is reflected in a more moderate political discourse and a belief in solving national and international conflicts through negotiation and compromise (Hofstede, 2001). Norway and the USA are examples of feminine and masculine countries respectively (Hofstede, 2001).

Thus, this cultural dimension affects in what degree the military is seen as a means and actively used as a power to solve international conflicts, attain national goals, and protect national interests. Masculinity indicates a tendency to force ones interests through rather than the feminine way of creating consensus and finding a middle way. It may also be advantageous to bear these things in mind in the context of reaching a population with a message. Using the persuasive principle of social proof/consensus may prove relatively more effective in feminine societies, whereas using authority/status may be more effective in masculine societies. The consequences for persuasion described here have, however, not yet been tested empirically.

### **5.4 Long term versus short term orientation**

Long term versus short term orientation refers to cultural differences in the relationship to time; cultures high on short term orientation are more focused on the present and near future whereas cultures high on long term orientation are more focused on the distant future (Hofstede, 2001). Consequently, long term oriented countries are more focused on working towards long term



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goals than more short term oriented cultures that place more value on demonstrating quick results. China and Taiwan are at the top of the list of the most of long term oriented countries, whereas Nigeria and Pakistan are found at the short term orientation end. Scandinavian countries figure around the middle, a bit towards the short-term end, and the USA is found a bit more towards the short-term end of the dimension (Hofstede, 2001).

A difference in long term/short term orientation has an effect on international politics as well as the ways in which to gain and/or avoid influence in the various cultures. The divergence in focus may affect the focus of both the communicator and the audience/recipients, in terms of people paying more or less attention to issues that are more or less important in a long or short time perspective. Reciprocation has been found to be more important in short term orientated cultures than in long term orientated cultures (Hofstede, 2001). Hence, this cultural dimension may be expected to have an effect on the persuasive principle of reciprocation – indeed, the principle was defined based on data and research from the USA, a relatively short-term oriented culture. Nevertheless, as indicated in Chapter 2.2, reciprocation was found to be amongst the three most important principles of persuasion in an African country (Nigeria), as well as in Asian and North American countries (Orji, 2016; Orji et al., 2015). Orji’s research does, however, not reveal the countries behind the Asian-North American grouping of respondents. There may have been countries at both ends of the long term/short term orientation scale in the Asian sample, which may have confused the results. The authors also focused on a difference in individualism/collectivism, which may be a less relevant cultural variation in relation to the reciprocation principle – at least if basing the research on Hofstede (2001), which in fact Orji also did.

## **5.5 Subgroup variation and the military**

There are also subgroup variations within national cultures, between for instance occupational and organizational divides (e.g., Hofstede, 2001; House, et al., 2004; Soeters, 1997). As indicated in Chapter 2.3.4, Soeters found that the military, as a subgroup (with the exception of Norway), had higher power distance than the population in general (i.e., based on the civilian samples of Hofstede, 2001, and Hoppe, 1990). Half the countries in his 13-country study were also more uncertainty avoiding than the civilian samples of Hofstede and Hoppe. Norway was also here part of the exception, that is, the military sample demonstrated no higher uncertainty avoidance level than the civilian samples. In terms of masculinity/femininity, overall the military sample scored more feminine than their civilian counterparts. Also here Norway proved an exception, in terms of the military sample scoring relatively more masculine than civilian samples. Soeters’ research further indicated that the military sample overall demonstrated more collectivistic values than the civilian samples (with the exceptions of Norway and Spain), although the later research by Bjørnstad & Ulleberg (2017) cast doubt on the validity of Hofstede’s metric used in a military population to measure individualism/collectivism. The Bjørnstad & Ulleberg study demonstrated that the actual behaviors in a military sample were more in line with the results from the civilian surveys (Hofstede, 2001; Hoppe, 1991) than the military surveys by Soeters or Bjørnstad & Ulleberg.

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The research from military subsamples indicates two important things for Norway. First, the relative difference between military personnel in Norway and their partner nations in NATO is larger in regards to power distance and uncertainty avoidance than in the civilian population, whereas the opposite is true for the masculinity/femininity dimension. As a consequence, the Norwegian Armed Forces may find it harder to work and communicate across nations in NATO in regard to the interpretations of the organizational hierarchy and in the need for detailed rules and regulations. Secondly, this research indicates that the relative difference between the military and the civilian population in Norway is smaller than what is the case in our partner countries, which may facilitate communication across the civilian-military divide. This provides an advantage for Norway in all civilian-military communication within the country, while greater challenges may face the military organizations in our partner nations in their efforts to communicate with their civilian populations.

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## 6 Concluding remarks

This report has presented psychological research at individual, group, organizational, and national levels in order to illuminate the issue of communication and influence – both wanted and unwanted – in a defense context. The main focus has been on individual level research, due to the quantity of relevant research at this level. The aim of this report has not only been to view the levels separately, but also to show how issues at the diverse levels are interrelated. For instance, it was described how cultural differences may modify the effect of the persuasion principles. Furthermore, it was pointed to how attributional errors are found at both individual and group levels, but may differ across cultures and cause dissimilar effects at individual and group levels. And finally, it was elaborated upon how the organizational context may interact with the individual level aspects in creating more or less robustness towards unwanted attempts at influence.

### 6.1 Sum, implications, and future research

The research presented indicated that an awareness and understanding of the psychological mechanisms behind attitude formation, being influenced, and exerting influence can make us more robust and more able to defend ourselves as a nation in the information age. Attitudes can affect how people select, perceive and evaluate attitude-relevant information. The research indicated that attitudes influence behavior, which can make attitudes a target for governmental campaigns, commercial advertisements, or foreign influence operations.

The persuasion research deals directly with influence and pointed to six principles that have a positive effect on persuasion: liking, reciprocity, social proof, consistency, authority, and scarcity. Recognizing and understanding these underlying principles of persuasion may aid the population, government, and armed forces to protect themselves against hostile influence attempts. The report also pointed to some implications of the persuasion principles for the communication strategies of the government and defense organization. In order to reach the Norwegian population or our allies with a message, it was deemed advantageous if the Norwegian Armed Forces is liked and being perceived of as doing a good job, being an integral part of society and NATO, having high expertise, and that there is consistency between the various narratives and what the Norwegian Armed Forces is doing. It was recommended to use a broad and inclusive communication strategy, in terms of including diverse experts and both higher and lower ranking personnel. Factors such as age, gender, culture, physical activation, media of communication, and individual differences were found to affect the relative efficiency of the persuasion principles, some even making them contra productive. Hence, using the principles in communication requires a careful consideration of the situational context, which medium to use, and the audience for whom the message is intended. There was pointed to a lack of research that focuses directly on how to *avoid* persuasion (and not only on how to achieve persuasion), a lack of research from military and Norwegian contexts, and still only limited research on the psychological processes and effects within the context of technologically mediated communication.

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Cognitive elaborations and the use of heuristic cues are at the heart of attitude formations, persuasion and influence. Research was presented indicating that persuasion involving central thought processes or elaboration is more robust, leads to more long-lasting attitudinal change, and has more behavioral consequences. Elaboration was also understood to be central in uncovering and guarding against hostile attempts at influence. Moreover, elaboration was thought to be advantageous in terms of increasing the probability of the objective and truthfulness of a message being understood, whether it regards revealing for instance foreign attempts at influence or whether it regards the population being able to understand accurate government communication in a situation of crisis.

Many situational, message, communicator, and receiver differences interact to determine the degree to which a message is elaborated upon. Autonomy, being responsible, and personal involvement were for instance linked to elaboration. The implications of individual differences pointed to was that a population or organization high in need for cognition, need to evaluate, and uncertainty orientation would be more resilient to enemy attempts at influence because they would tend to seek out information from more sources, more closely evaluate the truth in the messages sent out, and not revert to heuristics when the stakes are high. Thus, we would want to foster these individual qualities within the Norwegian defense organization, in other organizations central in a civilian defense context such as the police, health services, central providers of infrastructure, and in the society at large.

Similar to the research on persuasion, the research on cognitive elaboration has generally focused on how to *gain* influence; more research needs to focus directly on how to *avoid* unwanted influence. Here, there is also a need for research that focus on the technological context of communication.

Research on biases in human perception revealed other complicating issues to persuasion and influence, such as priming, framing, the base-rate fallacy, and attribution errors. Priming can be used and abused to influence the general opinion by putting focus on issues which are advantageous for a certain party. This is frequently used in politics, but can also be used by the media, sometimes even inadvertently. Genres such as the news genre can function as frames that enable the recipient to interpret a text or message appropriately. Using a genre inappropriately serves to mislead, and adversaries may use it to gain influence in a population or organization.

A consequence of the base rate-fallacy is that adversaries may leak case stories to influence the general opinion in a wanted direction, and that governmental attempts at countering this with more general correct information about the issues are likely to fail. The implications of attributional errors such as naive realism, self-serving attributions, and the fundamental attribution error, is that people will tend to take credit for more than their own contribution, to blame others for negative outcomes, to attribute actions to the others' dispositions rather than to the situation, and believe that their own way of interpreting the world is the correct one. People's tendency to exaggerate the importance of case histories relative to base-rate information combined with the tendency to attribute cause to dispositions rather than situational constraints can give singular negative case stories great power to sway the attitudes of a

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population towards individuals, groups, organizations or nations. Human biases may therefore help explain the rise of conflicts between individuals, groups, and societies.

Research presented from the group level demonstrated that social categorization and differentiation, illusory correlation, stereotyping, distortion of memory, social identity, and biased attributions all add up to produce a strong group biasing effect. Belonging to a group or identifying with a group consequently influences how we interpret a message, how we may be influenced, and whether and how we may act on it. For example, we see that people are much less critical to news shared on the social media by someone from an ingroup than by news presented by someone from an outgroup. People also tend to seek out net-based societies that they identify with, which in turn makes people less critical and more positive to the content of any information found there. Belonging to the same group can provide many of the factors identified to induce persuasion.

Group effects on persuasion may be exploited by an adversary wanting to gain influence in certain parts of the population or in key organizations – both military and civilian. For instance, infiltration may be used as a means to achieve influence, for instance in social media groups or in organizations. In the same vein, it is a great handicap to be perceived of as an outgroup member if you want to reach someone with a message.

Increased polarization between groups augments the described challenges with group effects on persuasion. Group polarization can endanger both the general ability to communicate in a society, as well as the ability of any governmental representative to communicate with the population.

International relations entail all the challenges caused by differences in groups; nationality is a central part of our identities and national differences are powerful group divides. Overarching groups, with common goals and identities (like the EU or the UN), were understood to be advantageous in terms of reducing the negative effects of belonging to different nationalities and having dissimilar cultures, languages, and often competing goals.

The media can easily and even inadvertently exacerbate any national or subgroup divides. This can be done simply by drawing attention to dividing issues, or by describing dividing issues in less than accurate terms, which often results in a loss of trust – especially from the outgroups that often find themselves the victims of what can be perceived of as media scapegoating. Subgroups may therefore turn to alternatives to the traditional media for news and updates, which may further exacerbate the divides by nourishing the “us and them” paradigm. Reaching subgroups with important information in a crisis situation and attaining a common understanding of a situation will be increasingly difficult if subgroups get their news from different sources that serve divergent interests.

Because Norway has moved from being a homogenous society to a more heterogeneous society, the group research indicates a greater potential for intergroup conflicts, and societal subgroups may not perceive governmental institutions and the military as representing their own group’s interests. It was questioned whether we as a nation have a full understanding of our new

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situation and how it is affecting our ability to defend ourselves – especially in information warfare and total defense contexts. It was acknowledged a need to identify what should to be done to prepare both civilian institutions and the military. There is a need for future research to answer such questions.

As the wealth of information and complexity of threats increase, the sharing of information and the awareness and understanding of tasks and responsibilities in the organization are increasingly important for good decision-making and the organization's ability to reach its goals. In this lies also the organization's ability to withstand hostile activities aimed at breaking down our defense organizations' ability to communicate, share, and understand information correctly. Research indicated that democratic types of organization, defined by a flatter hierarchy, decentralized processes, and autonomy, may be advantageous. First, more people are given responsibilities and more factors motivate subordinates to think for themselves in a democratic type of organization, understood to promote elaboration. This was perceived to create robustness against enemy influence attempts, such as disinformation and infiltration. Second, enemy activity aiming to gain influence may be more easily revealed because there are more personnel with knowledge and insight into relevant issues concerning the organization and external situation in a democratic as opposed to a hierarchic and centralized type of organization. Third, autonomy in the workplace was found to be positively related to job involvement, which in turn positively impacts the motivation and effort that people put into their job, thus also promoting cognitive elaboration. Fourth, research indicated that distributed leadership and subordinates' subsequent propensity to question their superiors' decisions and take responsibility for their own actions to be essential in order to avoid erroneous decision making. In the same vein, as suspicions of enemy influence activity may be somewhat uncertain at first, the feeling of being empowered and responsible will motivate subordinates both to investigate and to inform their superiors at an early stage.

This report presented effects of cultural differences in individualism/collectivism, power distance, uncertainty avoidance, masculinity/femininity, and long term/short term orientation, relating to individual, group, and organizational level factors having an impact on influence. It was indicated that cultural differences may affect the effectiveness of the persuasion principles, the development of individual characteristics, the attribution processes, the organization, and serve to exacerbate the effects of differences in national identities on human relations at inter-personal, inter-group, and inter-national levels.

In terms of the persuasion principles, it was found that authority may be more effective in high as opposed to low power distance cultures, that consistency may be more efficient in high than in low uncertainty avoidance cultures, that consensus may be more effective in feminine as opposed to masculine cultures, and that reciprocation may be more useful in short than in long term orientated cultures. The need for more research was, nonetheless, indicated to better understand the persuasion principles in a cultural context.

A collectivist culture, as opposed to an individualist culture, was found to make people differentiate more between ingroups and outgroups. But because collectivists seem less prone to over-attribute others' behavior to dispositions than individualists, they may not have stronger

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outgroup biases than individualists. Moreover, interactions between the various effects of the cultural differences were found to potentially cancel each other's isolated effects.

Hierarchy plays a more central role in organizations in high as opposed to low power distance cultures, and such cultures were therefore understood to be more prone to the downsides of hierarchic centralized organization. The Norwegian culture was classified as low on both power distance and uncertainty avoidance, which indicated an advantage in terms of creating a cultural context that promotes individual factors linked to elaboration, which in turn was interpreted to help to withstand attempts at influence.

Masculinity/femininity affects the degree to which the military is seen as a means and actively used as a power to solve international conflicts, attain national goals, and protect national interests. A difference in long term/short term orientation was indicated to affect international politics as well as the ways in which to gain and/or avoid influence in the various cultures. The difference in orientation may influence the focus of both the communicator and the audience/recipients, in terms of people paying more or less attention to issues that are varying in terms of a long or short time perspective.

Because cultures evolve, we need to be aware of which direction our society and organizations are moving – it may not always be in the direction that would foster robustness towards unwanted influence.

The cultural differences research from military subsamples indicated two important consequences for Norway. First, the Norwegian Armed Forces face some extra challenges when working and communicating across nations in NATO in regard to interpreting the organizational hierarchy, rules, and regulations. Second, research indicated that the relative difference between the military and the civilian population in Norway is smaller than what is the case in our partner countries, suggesting an advantage for Norway in regards to communication across the civilian-military divide. This research is, however, scarce; there is a need for more research on cross-cultural differences in military contexts.

The research and implications presented in this report point to many areas in which there are many unanswered questions, indicating a need for further research, especially as regards the contexts of the Norwegian Armed Forces and our society as a whole.

## **6.2 Conclusion**

This report has presented various aspects of psychological research in an attempt to start disentangle the issue of communication and influence in a defense context. The issue concerns how to withstand hostile influence operations in military and civilian organizations, and in our society as a whole, as well as how to be able to get through to the population with important information, for instance in a crisis situation after or in the midst of adversarial attempts at influence. The presentation also touched upon the issue of communication across the military-civilian divide and between Norway and our allied nations.

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Research from the psychological discipline presented here provides a good start, but we need more research on many central issues, especially from relevant contexts. Research on technologically mediated communication, including the use of social media platforms, is still in its infancy, highlighting the need for more research to delve into how this context affects what we think we know from research on psychological effects. The main part of the research on influence, mainly focused on the individual level of analysis, is also focused on how to *achieve* influence. Hence, to serve a defense context, we also need more research that directly tests the means how to *avoid* influence and restore stability in the population or in the defense organization after for instance having been the victim of influence operations.

In conclusion, this report has drawn up a starting point from which to understand our vulnerabilities and our possibilities in regards to securing the Norwegian population now and in the future - involving increasingly more technologically mediated communication. The research presented here aimed both to give a basic understanding and to inspire future research in the area of communication and influence in a defense context. As indicated in Kveberg et al. (Submitted) and Bergh (2019), influence operations is understood to be a low budget, high impact “weapon”, but also one which may prove very costly not to prepare for.



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## References

- Aaker, J., & Maheswaran, D. (1997). The effect of cultural orientation on persuasion. *Journal of consumer research*, 24 (3), 315–328.
- Adler, N. J. (1991). *International dimensions of organizational behavior*. 2nd ed. Boston: Kent.
- Johansen, P. A. (2019, January 17). Lavere sosiale lag taper mest på innvandring. [Lower social layers loose the most on immigration.] *Aftenposten*, pp. A6-7.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50, 179–211.
- Alberts, D. S. (2011). *The agility advantage: A survival guide for complex enterprises and endeavors*. Washington, DC: Department of Defense. (ISBN 978-1-893723-23-8)
- Alberts, D. S., & Hayes, R. E. (2003). *Power to the edge: Command and control in the information age*. Washington, D.C.: DoD CCRP publication series.
- Alme, V. (2019a). *Falske nyheter som sjanger*. FFI-RAPPORT 19/00660.
- Alme, V. (2019). *Det norske narrative om Afghanistan: Sikkerhetspolitiske rammebetingelser for en småstat i operasjon*. FFI-RAPPORT 18/00223.
- Baran, B. E., & Scott, C. W. (2010). Organizing Ambiguity: A Grounded Theory of Leadership and Sensemaking within Dangerous Contexts. *Military Psychology*, 22(1), 42–69.
- Bergh, A. (Submitted). *Social network centric warfare: Understanding influence operations in social media*. FFI-RAPPORT 19/01194.
- Billig, M. G., & Tajfel, H. (1973). Social categorization and similarity in intergroup behavior. *European Journal of Social Psychology*, 3 (1), 27–52.
- Bienefeld, N., & Grote, G. (2011). Emergency at 35'000 Ft.: How Cockpit and Cabin Crews Lead Each Other to Safety. *16th International Symposium on Aviation Psychology, USA*, 130–135.
- Bienefeld, N., & Gudela, G. (2011b). Teamwork in an emergency: How distributed leadership improves decision making. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 55 (1), 110–114.
- Bjørnstad, A. L. (in progress). Organizational issues relevant to Joint Intelligence, Surveillance and Reconnaissance (JISR). In F. Lichacz, S. Valaker, D. J. Zelik, A. L. Bjørnstad, & R.

---

---

Stensrud. *NATO Human Factors and Medicine (HFM) Research and Technology Group (RTG) – 276: Human Factors and ISR Concept Development and Evaluation. Final report.*

Bjørnstad, A. L. (2011). Exploring network organization in military contexts – effects of flatter structure and more decentralized processes. *Military Psychology, 23* (3), 315–331.

Bjørnstad, A. L., & Ulleberg, P. (2017). Is established knowledge about cross-cultural differences in individualism-collectivism not applicable to the military? A multi-method study of cross-cultural differences in behavior. *Military Psychology, 29* (6), 477–490.

Bjørnstad, A. L., & Ulleberg, P. (Submitted). An empirical study of an integrative model of organizational effectiveness: The effects of structure, processes, obstacles to information sharing, competence, and trust.

Bjørnstad, A. L., Fostervold, K. I., & Ulleberg, P. (2013). Effects of cultural diversity on trust and its consequences for team processes and outcomes in ad hoc distributed teams. *Scandinavian Journal of Organizational Psychology, 5* (1), 3–15.

Brewer, M. B., & Brown, R. J. (1998). Intergroup relations. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of Social Psychology* (4th ed., Vol. 2, pp. 554–594). New York: McGraw-Hill.

Brown, R. (1988). *Group processes: Dynamics within and between groups*. Oxford, UK: Blackwell Publishers Ltd.

Brown, S. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin, 120* (2), 235–255.

Burger, J. M. (1981). Motivational biases in the attribution of responsibility for an accident: A meta-analysis of the defensive-attribution hypothesis. *Psychological Bulletin, 90*, 496–512.

Butts, M. M., Vandenberg, R. J., DeJoy, D. M., Schaffer, B. S., & Wilson, M. G. (2009). Individual reactions to high involvement work processes: Investigating the role of empowerment and perceived organizational support. *Journal of Occupational Health Psychology, 14* (2), 122–136.

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of Need for Cognition. *Journal of Personality Assessment, 48* (3), 306–307.

Cacioppo, J. T., Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology, 45*(4), 805–818.

Cacioppo, J. T., & Petty, R. E. (1979). Effects of message repetition and position on cognitive response, *Journal of Personality and Social Psychology, 37*, 97–109.

- 
- 
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*, 752–766.
- Cheng, J., Bernstein, M., Danescu-Niculescu-Mizil, C., & Lescovec, J. (2017). Anyone Can Become a Troll: Causes of Trolling Behavior in Online Discussions. *Proceedings of the 20<sup>th</sup> ACM Conference on Computer-Supported Cooperative Work and Social Computing*, USA, 1217–1230.
- Chun, W., & Kruglanski, A. W. (2006). The role of task demands and processing resources in the use of base-rate and individuating information. *Journal of Personality and Social Psychology*, *91*, 205–217.
- Cialdini, R. B. (2001). Harnessing the science of persuasion. *Harvard Business Review*, *October* (R0109D), 72–79.
- Cooper-Hakim, A., & Viswesvaran, C. (2005). The construct of work commitment: Testing an integrative framework. *Psychological Bulletin*, *131* (2), 241–259.
- Dahlstrøm, H. K., Nesheim, N. S., & Nyjordet, B. M. (2017). Barn og eldre marginaliseres som kilder i mediene: Kildebruk i norske nyhetsmedier 2015. *Norsk medietidsskrift*, *04* (24). Retrieved May 14, 2019, from [https://www.idunn.no/nmt/2017/04/barn\\_og\\_eldre\\_marginaliseres\\_som\\_kilder\\_i\\_mediene](https://www.idunn.no/nmt/2017/04/barn_og_eldre_marginaliseres_som_kilder_i_mediene).
- Diesen, S. (2018). Lavintensivt hybridangrep på Norge i en fremtidig konflikt. FFI-RAPPORT 18/00080.
- Doise, W., & Sinclair, A., (1973). The categorization process in intergroup relations. *European Journal of Social Psychology*, *3*, 145–157.
- Dunning, D. (2012). Judgment and decision-making. In S. T. Fiske & C. N. Macrae (Eds.) *Sage handbook of social cognition* (pp. 251–272). Thousand Oaks, CA: Sage.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. San Diego, CA: Harcourt Brace Janovich.
- Earley, P. C. (1989). Social loafing and collectivism: A comparison of the United States and the People's Republic of China. *Administrative science quarterly*, *34*, 565–581.
- Fischer, S. C., Spiker, V. A., & Riedel, S. L. (2009). *Critical thinking training for army officers volume two: A model of critical thinking*. U.S. Army Research Institute for the Behavioral and Social Sciences: Research Report 1882.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

---

---

Fiske, S. T., & Taylor, S. E. (2017). *Social cognition: From brains to culture (3<sup>rd</sup> Ed)*. London: Sage.

Ginossar, Z., & Trope, Y. (1980). The effects of base rates and individuating information on judgments about another person. *Journal of experimental social psychology*, *16*, 228–242.

Griskevicius, V., Goldstein, N. J., Mortensen, C. R., Sundie, J. M., Cialdini, R. B., Kenrick, D. T. (2009). Fear and loving in Las Vegas: Evolution, emotion and persuasion. *Journal of Marketing Research*, *46* (3), 384–395.

Guadagno, R. E., & Cialdini, R. B. (2010). Preference for consistency and social influence: A review of current research findings. *Social influence*, *5* (3), 152–163.

Guadagno, R. E., & Cialdini, R. B. (2007). Persuade him by e-mail, but see her in person: Online persuasion revisited. *Computers in Human Behavior*, *23*, 999–1015.

Guadagno, R. E., & Cialdini, R. B. (2005). Online persuasion and compliance: Social influence on the internet and beyond. In Y. Amichai-Hamburger (Ed.), *The Social Net: The Social Psychology of the Internet* (pp. 91–113). New York: Oxford University Press.

Gudykunst, W., Gao, G., Schmidt, K., Nishida, T., Bond, M. H., Leung, K., Wang, G., & Barracough, R. A. (1992). The influence of individualism-collectivism, self-monitoring, and predicted-outcome value on communication in ingroup and outgroup relationships. *Journal of cross-cultural psychology*, *23* (2), 196–213.

Halberg, U. E., & Schaufeli, W. B. (2006). Can work engagement be discriminated from job involvement and organizational commitment. *European Psychologist*, *11* (2), 119–127.

Hamari, J. & Koivisto, J. (2015). “Working out for likes”: An empirical study on social influence in exercise gamification. *Computers in Human Behavior*, *50*, 333–347

Hamilton, D. L. (1981). Illusory correlation as a basis for stereotyping. In D. L. Hamilton (Ed.) *Cognitive Processes in Stereotyping and Intergroup Behavior*. New York: Lawrence Erlbaum.

Hamilton, D. L., & Rose, T. L. (1980). Illusory correlation and the maintenance of stereotypic beliefs. *Journal of Personality and Social Psychology*, *39*, 832–845.

Haugtvedt, C. P., & Petty, R. E. (1992). Personality and persuasion: Need for cognition moderates the persistence and resistance of attitude changes. *Journal of Personality and Social Psychology*, Vol 63(2), 308–319.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

- 
- 
- Heijltjes, A., van Gog, T., Leppink, J., & Paas, F. (2014). Improving critical thinking: Effects of dispositions and instructions on economics students' reasoning skills. *Learning and Instruction*, 29, 31–42.
- Hewstone, M., Stroebe, W., & Stephenson, G. M. (1996). *Introduction to social psychology*. Oxford: Blackwell Publishers Ltd.
- Hodson, G., & Sorrentino, R. M. (1999). Uncertainty orientation and the Big Five personality structure. *Journal of Research in Personality*, 33, 253–261.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. 2nd ed. Thousand Oaks, CA: Sage.
- Hogg, M. A., & Abrams, D. (1988). *Social Identifications: A social psychology of intergroup relations and group processes*. London: Routledge.
- Hoppe, M. H. (1990). *A comparative study of country elites: international differences in work-related values and learning and their implications for management training and development*. Doctoral dissertation, University of North Carolina at Chapel Hill.
- Hoppe, M. H. (1998). Validating the masculinity/femininity dimension on elites from 19 countries. In G. Hofstede (Ed.), *Masculinity and femininity: the taboo dimension of national cultures* (pp.29–43). Thousand Oaks, CA Sage Publications.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, Leadership and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage Publications.
- Howard, J. W., & Rothbart, M. (1980). Social categorization and memory for ingroup and outgroup behavior. *Journal of Personality and Social Psychology*, 38, 301–310.
- Inglehart, R., Basanez, M., Diez-Medrano, J., Halman, L., & Luijkx, L. (2004). *Human values and beliefs: A cross-cultural sourcebook based on the 1999-2002 values surveys*. Delegacion Coyoacan, Mexico: Siglo XXI Editores.
- Jarvis, W. G. G., & Petty, R. E. (1996). The need to evaluate. *Journal of Personality and Social Psychology*, 70, 172–194.
- Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, 39, 341–350.
- Kanungo, R. N. (1979). The concepts of alienation and involvement revisited. *Psychological Bulletin*, 86, 119–138.

- 
- Kirkman B. L., Lowe, K. B., & Gibson, C. B. (2006). A quarter century of Culture's Consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of international business studies*, 37 (5), 285–320.
- Klaczynski, P. A., Fauth, J. M. & Swanger, A. (1998). Adolescent identity: Rational vs. experiential processing, formal operations, and critical thinking beliefs. *Journal of Youth and Adolescence*, 27(2), 185–207.
- Kozlowski, W. J., & Ilgen, D. R. (2005). Enhancing the effectiveness of work groups and teams. *Psychological science in the public interest*, 7 (3), 77–124.
- Kveberg, T., Alme, V., & Diesen, S. (Submitted). *Defence against foreign influence – how to define and assess harm, and to direct defence measures*. FFI-RAPPORT 19/01766.
- Lawler, E. E., & Hall, D. T. (1970). Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, 54, 305–312.
- Lichacz, F., Valaker, S., Zelik, D. J., Bjørnstad, A. L., & Stensrud, R. (in progress). *NATO Human Factors and Medicine (HFM) Research and Technology Group (RTG) – 276: Human Factors and ISR Concept Development and Evaluation. Final report*.
- Linwill, D. L., & Warren, P. L. (2018). *Troll Factories: The Internet Research Agency and State-Sponsored Agenda Building*. Clemson University: SC, USA, Department of Communication and Department of Economics. Retrieved March 13, 2019, from [https://www.davidpuente.it/blog/wp-content/uploads/2018/08/Linwill\\_Warren\\_TrollFactory.pdf](https://www.davidpuente.it/blog/wp-content/uploads/2018/08/Linwill_Warren_TrollFactory.pdf).
- Lodahl, T. M., & Kejner, M. (1965). The definition and measurement of job involvement. *Journal of Applied Psychology*, 49 (1), 24–33.
- Lombardi, W. J., Higgins, E. T., & Bargh, J. A. (1987). The role of consciousness in priming effects on categorization: Assimilation versus contrast as a function of awareness of the priming task. *Personality and Social Psychology Bulletin*, 13, 411–429.
- Maier, S. F., & Seligman, M. E. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General*, 105(1), 3–46.
- Matheson, K., & Zanna, M. P. (1989). Persuasion as a function of self-awareness in computer-mediated communication. *Social behavior*, 4, 99–111.
- Mathieu, J. E., & Farr, J. L. (1991). Further evidence for the discriminant validity of measures of organizational commitment, job involvement, and job satisfaction. *Journal of Applied Psychology*, 76 (1), 127–133.

- 
- 
- Mayer, R. C., & Schoorman, F. D. (1998). Differentiating antecedents of organizational commitment: A test of March and Simmon's model. *Journal of Organizational Behavior, 19*, 15–28.
- McKenna, K. Y. A., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the internet for personality and social psychology. *Personality and Social Psychology Review, 4*, 57–75.
- Miller, D. T., & Ross, M. (1975). Self-serving biases in attribution of causality: Fact or fiction? *Psychological Bulletin, 82*, 213–225.
- Miyamoto, Y., & Kitayama, S. (2002). Cultural variation in correspondence bias: The critical role of attitude diagnosticity of socially constrained behavior. *Journal of Personality and Social Psychology, 83*, 1239–1248.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology, 67*, 949–971.
- Moynihan, D. P., & Pandey, S. K. (2007). Finding workable levers over work motivation: comparing job satisfaction, job motivation, and organizational commitment. *Administration & Society, 39* (7), 803–832.
- Mullen, B., & Hu, L. (1989). Perceptions of ingroup and outgroup variability: A meta-analytic integration. *Basic and Applied Social Psychology, 10*, 233–252.
- Muscanell, N. L., Guadagno, R. E., & Murphy, S. (2014). Weapons of influence misused: A social influence analysis of why people fall prey to internet scams. *Social and Personality Psychology Compass, 8* (7), 388–396.
- Newman, L. S., & Uleman, J. S. (1990). Assimilation and contrast effects in spontaneous trait inference. *Personality and Social Psychology Bulletin, 16*, 224–240.
- Ojibo, K., Adaji, I., Orji, R., & Vassileva, J. (2018). The susceptibility of Africans to persuasive strategies: A case study of Nigeria. In R. Orji, M. Kaptein, J. Ham, K. Oyibo, and J. Nwokeji (Eds.), *Proceedings of the Personalization in Persuasive Technology Workshop, Persuasive Technology 2018* (pp. 8–21). Waterloo, Canada. <http://ceur-ws.org>.
- Orji, R. (2016). Persuasion and culture: Individualism-Collectivism and susceptibility to influence strategies. In R. Orji, M. Reisinger, M. Busch, A. Dijkstra, A. Stibe, and M. Tscheligi (Eds.), *Proceedings of the Personalization in Persuasive Technology Workshop, Persuasive Technology 2016* (pp. 30–39). Salzburg, Austria. <http://ceur-ws.org>
- Orji, R., Mandryk, R. L., & Vassileva, J. (2015). Gender, age, and responsiveness to Cialdini's persuasion strategies. In T. MacTavish, and S. Basapur (Eds.), *Persuasive 2015* (pp. 147–159). Switzerland: Springer International Publishing.

- 
- O'Sullivan, H., Moneypenney, M. J., & McKimm, J. (2015). Leading and working in teams. *British Journal of Hospital Medicine*, 76 (5), 264–269.
- Oyserman, D., Coon, H. M., & Kemmelmeier M. (2002). Rethinking individualism and collectivism: Evaluation of the theoretical assumptions and meta-analyses. *Psychological bulletin*, 128 (1), 3–72.
- Paullay, I. M., Alliger, G. M., & Stone-Romero, E. F. (1994). Construct validation of two instruments designed to measure job involvement and work centrality. *Journal of Applied Psychology*, 79 (2), 224–228.
- Peterson, P., & Seligman, M. E. P. (1984). Explanatory style and depression: Theory and evidence. *Psychological review*, 91(3), 347–374.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (vol. 19, pp.123–205). New York: Academic Press.
- Petty, R. E., Briñol, P. & Priester, J. R. (2009). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In J. Bryant & M. B. Oliver (Eds.), *Media effects: advances in theory and research* (3<sup>rd</sup> ed., pp. 125–164). New York: Routledge.
- Petty, R. E., Fabrigar, L. R., & Wegener, D. T. (2003). Emotional factors in attitudes and persuasion. In R. J. Davidson, K. R. Sherer, and H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp.752–772).Oxford: Oxford University Press.
- Petty, R. E., & Wegener, D. T. (1999). The elaboration likelihood model: Current status and controversies. In S Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 37–72). New York: Guilford Press.
- Pettigrew, T. F. (1979). The ultimate attribution error: Extending Allport's cognitive analysis of prejudice. *Personality and Social Psychology Bulletin*, 5, 461–476.
- Philips, R. O., Ulleberg, P., & Vaa, T. (2001). Meta-analysis of the effect of road safety campaigns on accidents. *Accident Analysis and Prevention*, 43, 1204–1218.
- Pomerantz, E. M., Chaiken, S., & Tordesillas, R. S. (1995). Attitude strength and resistance processes. *Journal of Personality and Social Psychology*, 69(3), 408–419.
- Priester, J. R., & Petty, R. E. (2003). The influence of spokesperson trustworthiness on message elaboration, attitude strength, and advertising effectiveness. *Journal of Consumer Psychology*, 13, 408–421.
- Pronin, E., Gilovich, T., & Ross, L. D. (2004). Objectivity in the eye of the beholder: Divergent perceptions of self versus others. *Psychological Review*, 111, 781–799.



- 
- 
- Reicher, S. D., Spears, R., & Postmes, T. (1995). A social identity model of deindividuation phenomena. *European Review of Social Psychology*, 6 (1), 161–198.
- Ross, L. D. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in Experimental Psychology* (vol.10, pp. 174–221). New York: Academic Press.
- Ross, M., & Sicoly, F. (1979). Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology*, 37, 322–337.
- Sanbonmatsu, D. M., & Kardes, F. R. (1988). The effects of physiological arousal on information processing and persuasion. *Journal of Consumer Research*, 15, 379–385.
- Schumann, D. W., Kotowski, M. R., Ahn, H. (A.), & Haugtvedt, C. P. (2012). The Elaboration Likelihood Model: A 30-Year Review. In S. Rodgers, and E. Thorson, (Eds.), *Advertising Theory* (pp. 51–68). New York: Routledge.
- Shuper, P. A., Sorrentino, R. M., & Otsubo, Y. (2004). A theory of uncertainty orientation: implications for the study of individual differences within and across cultures. *Journal of Cross-Cultural Psychology*, 35 (4), 460–480.
- Sorrentino, R. M., Bobocel, D. R., Gitta, M. Z., Olson, J. M., & Hewitt, E. L. (1988). Uncertainty orientation and persuasion: Individual differences in the effects of personal relevance on social judgments. *Journal of Personality and Social Psychology*, 55, 357–371.
- Stahlberg, D., & Frey, D. (1996). Attitudes: structure, measurement and functions. In M. Hewstone, W., Stroebe, & G. M. Stephenson (Eds.) *Introduction to social psychology* (pp 205–239). Oxford: Blackwell Publishers Ltd.
- Rosenhan, D. L., & Seligman, M. E. P. (1995). *Abnormal Psychology*. 3<sup>rd</sup> edition. New York: W. W. Norton & Company.
- STO-TR-SAS-085 (2014). *C2 Agility: Task Group SAS-085 final report*. (ISBN 978-92-837-0206-1). NATO STO Publisher.
- Schopler, J., Insko, C. A., Wieselquist, J., Pemberton, M., Witcher, B., Kozar, R., Roddenberry, C., & Wildschut, T. (2001). When groups are more competitive than individuals: The domain of the discontinuity effect. *Journal of Personality and Social Psychology*, 80, 632–644.
- Sherif, M. (1966). *In common predicament: Social Psychology of Intergroup Conflict and Cooperation*. Boston: Houghton-Mifflin.
- Sherif, M., & Sherif, C. W., (1969). *Social Psychology*. New York: Harper & Row.

- 
- Soeters, J. L. (1997). Value orientations in military academies: a thirteen country study. *Armed Forces & Society*, 24 (1), 7–31.
- Tajfel, H. (1970). Experiments in intergroup discrimination. *Scientific American*, 223 (5), 96–102.
- Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge: Cambridge University Press.
- Tajfel, H., Billig, M., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behavior. *European Journal of Social Psychology*, 1 (2), 149–177.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- Taylor, S. E., Fiske, S. T., Etcoff, N. L., & Ruderman, A. J. (1978). Categorical and contextual bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, 36, 778–793.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.
- Triandis, H. C. (1994). Cross-cultural industrial and organizational psychology. In H.C. Triandis, M. D. Dunette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp.193–172). Palo Alto, CA: Consulting Psychologists Press, Inc.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211, 453–458.
- Veiga, J. F., & Yanouzas, J. N. (1991). Differences between American and Greek managers in giving up control. *Organization studies*, 12, 95–108.
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359 (6380), 1146–1151. DOI: 10.1126/science.aap9559
- Wood, J. T. (1994). Gendered Media: The Influence of Media on Views of Gender. In J. T. Wood (Ed.), *Gendered Lives: Communication, Gender, and Culture* (pp. 231–244). Belmont, CA: Wadsworth Publishing.
- Zimbardo, P. G. (1969). The human choice: Individuation, reason, and order versus deindividuation, impulse and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska Symposium on Motivation*. Lincoln, NB: University of Nebraska Press.

## About FFI

The Norwegian Defence Research Establishment (FFI) was founded 11th of April 1946. It is organised as an administrative agency subordinate to the Ministry of Defence.

### FFI's MISSION

FFI is the prime institution responsible for defence related research in Norway. Its principal mission is to carry out research and development to meet the requirements of the Armed Forces. FFI has the role of chief adviser to the political and military leadership. In particular, the institute shall focus on aspects of the development in science and technology that can influence our security policy or defence planning.

### FFI's VISION

FFI turns knowledge and ideas into an efficient defence.

### FFI's CHARACTERISTICS

Creative, daring, broad-minded and responsible.

## Om FFI

Forsvarets forskningsinstitutt ble etablert 11. april 1946. Instituttet er organisert som et forvaltningsorgan med særskilte fullmakter underlagt Forsvarsdepartementet.

### FFIs FORMÅL

Forsvarets forskningsinstitutt er Forsvarets sentrale forskningsinstitusjon og har som formål å drive forskning og utvikling for Forsvarets behov. Videre er FFI rådgiver overfor Forsvarets strategiske ledelse. Spesielt skal instituttet følge opp trekk ved vitenskapelig og militærteknisk utvikling som kan påvirke forutsetningene for sikkerhetspolitikken eller forsvarsplanleggingen.

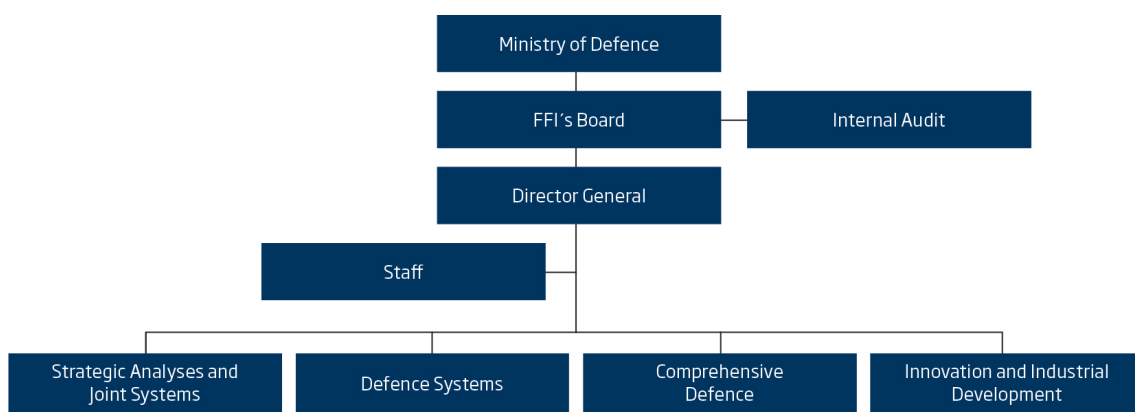
### FFIs VISJON

FFI gjør kunnskap og ideer til et effektivt forsvar.

### FFIs VERDIER

Skapende, drivende, vidsynt og ansvarlig.

## FFI's organisation



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