

Extreme Political Attitudes and Emotionally Based Strategic Communications (EBSC)

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Collective and negatively valenced emotions, such as fear, anger, hatred or humiliation, may contribute to the emergence of extreme political attitudes and behaviours. We refer to the impact of negatively valenced emotions on political attitudes and (in)tolerance as the “toxic power of negatively valenced emotions”. The neural mechanisms and neural characteristics of extreme political attitudes and related negatively valenced discrete emotions are represented in changes at the biochemical and molecular levels of related limbic and prefrontal cortical structures of affected brains. We propose “dominant emotional maps” as a particular form of representing dominant emotions within a group or a population. The toxic power of extreme political mental states might be reduced by Emotionally Based Strategic Communications (EBSC) as a communication method for transforming negative dominant emotional maps into more positive ones. EBSC are conceptualized as the “positively valenced stimulation” of a negatively emotionally affected group by an appropriate communications strategy in order to influence perceptions, attitudes and behaviour of targeted group. We regard EBSC as potential contribution to a “soft power” approach to security policy and prevention of radicalized behaviours and action tendencies in afflicted societies. EBSC can also be viewed as a large-scale strategy of emotion regulation that might decrease destructive power of extreme political attitudes.

Keywords: political psychology, radicalized behaviours, dominant emotional maps, strategic communications, neuroscience

The Role of Group and Mass Effects in the Formation of Extreme Political Attitudes

Individuals make up groups. However, groups may heavily impact on their members in different manners, such as:

- (1) Group’s attitudes and opinions: individual opinions and attitudes typically become more extreme in a

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group context;

(2) Group's decision-making: "group-thinking" is characterized by a strong propensity to reach group agreement and a group consensus;

(3) Group's attributional style: known as "in-group/out-group bias", attributes positive traits and behaviours internally to the group, and negative traits and behaviours externally to others who do not belong to the group;

(4) Group's responsibility: personal responsibility and accountability of group members are diminished and diffused (Reddy Pynchon & Borum, 1999).

Groups also influence emotions, feelings, sentiments, and moods of their members through processes such as increasing impulsiveness, mass infections, normative control, cohesiveness, and temporal staging of group development (Barsade & Gibson, 1998).

Yet, individuals are not merely passive adherents to groups. Individual actions and inter-individual interactions can also change attitudes, decision-making styles, motivations, norms and affective states prevailing in a group. Certain individuals play a particularly important role in this respect. For example, "[a]s long as there is at least one other person in the group who disagrees with the group consensus, it becomes easier for the individual to defy or leave the group" (Reddy Pynchon & Borum, 1999, p. 351). Such individuals who first start to deviate from an established pattern of behaviour are called "change agents" (Ellickson, 2001).

Psycho- and socio-dynamics at both the individual and the group levels are involved in the formation of extreme political attitudes, development of fanaticism and radicalism (Gambetta, 2005; Kruglanski, Chen, Dechesne, Fishman, & Orehek, 2009; Post, 2006; Sageman, 2004; Victoroff, 2005). One of the most comprehensive overviews, which tried to carefully distinguish between the individual-level and group- and mass-level mechanisms of radicalization, has been provided by McCauley and Moskaleiko (2011). They identified 12 mechanisms of political radicalization: six of them operating at the level of an individual actor, three mechanisms operating at a group level, and three mechanisms operating at a mass level. Yet, most of the studies mentioned so far paid only casual attention to the role of emotions and other affective states in the formation and unfolding of these mechanisms.¹

We have examined group- and mass-level radicalization mechanisms identified by McCauley and Moskaleiko with the intention to identify effects—both short-term emotions and longer-term sentiments and moods—contributing to the operation of those mechanisms. The results of such an examination are summarized in Table 1.

Table 1 indicates that effects do play a significant role in mechanisms of political radicalization, and that most of the effects involved are negative. Consistent with the earlier mentioned in-group/out-group attributional bias, negative effects are most often directed toward the out-group. Even in some cases of Table 1, where negative effects are not explicitly asserted, their role may in fact be more pronounced than positive ones. For example, if group isolation amplifies any group-level effect, as indicated in Table 1, and if negative effects predominate over positive ones, as it has just been argued, it is to be expected that negative effects will be particularly amplified in isolated groups. Moreover, a combination of two or more mechanisms, such as group grievance and group isolation, may produce negative effect even when only one of the mechanisms involved (group grievance, in this case) produces a negative effect (anger).

¹ We shall review a number of studies linking more explicitly effects with radicalization in the next section.

Table 1

Group and Mass Radicalization Mechanisms and Effects Involved

Level	Mechanism	Effects involved
Group	Group grievance	In-group empathy, anger toward the out-group
	Polarization	In-group self-confidence
	Competition	Fear, anger toward the out-group
	Isolation	Amplification of any group-level effect
Mass	Jujitsu politics	Anger, outrage toward the out-group; humiliation on behalf of the in-group
	Hatred	Hatred toward the out-group
	Martyrdom	Awe toward martyrs and the in-group shame toward self

Notes. We include here group grievance, which has been classified as an individual-level mechanism by McCauley and Moskaleiko. They also consider personal grievance, slippery slope, love, risk/status, and unfreezing as individual-level mechanisms.

The Power of Negative Effects

Extreme political attitudes can be characterized by dominance of negatively valenced emotions like hatred, anger, fear, frustration or humiliation. The prominent role of negative effects in the mechanisms of political radicalization is in line with the general observation that people react more strongly to negative than to positive stimuli. The origins of such a tendency can be traced to the early history of human evolution:

Because it is more difficult to reverse the consequences of an injurious or fatal assault than those of an opportunity unpursued, the process of natural selection may also have resulted in the propensity to react more strongly to negative than to positive stimuli. (Cacioppo & Gardner, 1999, p. 205)

However, the propensity to react strongly to negative stimuli has become dysfunctional in many contemporary-life contexts. When such maladaptive affective reactions of individuals, groups, and masses lead to the emergence of extreme political attitudes and radicalization, we may speak of the “toxic power of negative effects”. In what follows we briefly describe hatred, fear, anger, and humiliation as four of the effects with supposedly highest toxic power, judged by the frequency of their appearance in the literature on intolerance, extremism, and radicalization.

Hatred is an effect with a particularly strong toxic power. Some authors regard it as sentiment (McCauley & Moskaleiko, 2011), while others view it as an emotion (Halperin, Canetti-Nissim, & Hirsch-Hoefler, 2009). Hatred is generally manifested as feeling about and acting toward specific others as creatures less than humans, possessing a “bad essence” (McCauley & Moskaleiko, 2011). Empirical evidence has been gathered in support of the thesis that group-based hatred is the most important antecedent of political intolerance (Halperin et al., 2009).

Fear and anger are another two negative emotions often associated with political intolerance (Capelos & Van Troost, 2007; Skitka, Bauman, & Mullen, 2004; Van Troost, 2007). However, the effects of both fear and anger on intolerance are shown to be wholly mediated by hatred (Halperin et al., 2009). This might imply that mechanisms of radicalization that involve fear and anger, such as group competition, grievances, and “jujitsu politics”, do not operate independently of hatred-inducing mechanisms, such as essentializing and dehumanizing.

The effects of fear and anger may also differ for different mechanisms of radicalization. Fear may, on the

one hand, stimulate group members to intensify competition with another group and thus increase radicalization. On the other hand, however, fear may inhibit risk-seeking behaviours and therefore actually reduce radicalization through risk and status searches. Empirical findings also indicate that the effects of fear are twofold: It leads to higher levels of threat and increased in-group enhancement, and therefore decreased tolerance, as well as to higher levels of value affirmation, and therefore increased tolerance (Skitka et al., 2004). Anger may as well contribute to radicalization, as part of grievances or oversensitivity to provocations, but it can also decrease radicalization by encouraging risk-seeking behaviours such as looking for possible ways of reconciliation with the opponent (Halperin, 2011). Finally, it is also interesting to note that the level of political sophistication does not seem to moderate the impact of anger on intolerance, while, on the other hand, fearful people are more intolerant if their political sophistication is lower (Halperin et al., 2009).

Humiliation is also often regarded as playing an important role in radicalization processes (Lindner, 2009; Moïsi, 2009). It has been defined as an emotional experience occurring “in reaction to perceiving oneself as being coerced or degraded in a way that violates expectations for fair treatment. It is comprised of a blend of both shame and anger, including a unique combination of self-blame and other-blame” (Goldman, 2008, p. 5). Behavioural consequences of humiliation can lead in several directions, but the one of “attempting to redress humiliation by inflicting humiliation on the supposed humiliators” (Lindner, 2009, p. 84; Saurette, 2006) seems to be particularly related to the development of extreme political attitudes and radicalization. Hitler’s ascend to power in Germany and Rwandan spiral of genocidal violence are among the most extreme examples of mass humiliation dynamics (Lindner, 2009) that lie at the intersection of group competition and “jujitsu politics” of the radicalization-mechanisms framework presented in Table 1.

We use the expression “toxic power” in primarily metaphorical sense. However, since neurobiological processes are involved in the production of human effect, negative emotions and extreme political attitudes may also have “toxic power” in a more literal sense. Therefore we turn to their neurobiological correlates in the next section.

Neural Background and Mechanisms of Extreme Political Attitudes

Neural mental states of extreme political attitudes can be characterized by dominance of negatively valenced emotions like hatred, anger, fear, frustration or humiliation. The more detailed analysis of the most relevant neural mechanisms and processes of extreme political attitudes and behaviours deserves more attention and joint interdisciplinary research efforts.

Extreme political attitudes as specific mental states can be described by the appropriate dynamic state variables which represent internal states of prefrontal and limbic neural networks. These tightly inter-coupled dynamic neural structures composed of amygdala circuits and the prefrontal cortex (PFC) characterize specific cognitive, emotional, physiological and behavioural properties of extreme political attitudes. The concept of dynamic mental state variables enables better understanding of interactions between emotion and cognition and is useful theoretical approach to the quantitative metrics for analyzing and better understanding of extreme political attitudes and potential radicalized behaviours. Quantitative description and formal quantitative metrics of extreme political attitudes including individual or group radicalized action tendencies or radicalized action potential might be important step forward in the development of early warning indicators in identification and prevention of radicalized behaviours. The concept of mental states may include large number of state variables like specific thoughts, feelings, beliefs, intentions, perceptions, semantics, associative and working memory

networking, dominant context, etc.

The augmented stimuli-dependent mental state vector of extreme political attitudes might be defined by:

(1) Emotional state subvector described as subjective feelings by dimensional model of emotions with specific valence and arousal, or in the form of discrete model with discrete emotions like anger, hatred, frustration, etc., embedded mainly in the amygdala (AM) and insula (IN);

(2) Cognitive state subvector described by attention, motivation, rule-based decisions, memories, etc., embedded mainly in the PFC and the cingulate cortex (CC);

(3) Physiological state subvector in the form of changes in heart rate, skin conductance, blood pressure, cortisol and adrenaline levels, etc., embedded mainly in hypothalamus (HT) and brainstem (BS);

(4) Behavioural state subvector in the form of potential actions or even terroristic action tendencies, etc., embedded mainly in precuneus (PC), premotor cortex (PMC), mirror neurons, motor cortex (MC) and basal ganglia (BG);

(5) Neural state subvectors which includes internal dynamics of neural state variables like neuron firing rates, synaptic weights, neuronal activation potential, amplitude and duration of long-term potentiation, etc.

The concept of augmented stimuli-dependent mental states which integrates emotion, cognition, physiology and behaviour can be applied in formal modelling of extreme political attitudes. It is based on neural anatomical interconnectivity of the amygdala and prefrontal circuits as neural fundament of strong correlation between cognition and emotion (Salzman & Fusi, 2010).

Real-life stressful events and related emotions elicit various responses in the affected brain regions of individuals and entire groups, ranging from changes in brain biochemical parameters to a decrease in a number of neurons, particularly in hippocampal structures, and may result in severe anatomical and physiological changes with serious long-term consequences. These neural changes that result from almost daily exposure to stressful living environment, particularly among youth population, should be analyzed more closely to be able to develop right countermeasures to prevent growth of undesirable action tendencies with broader impact on the entire societies.

The more detailed analysis of the most relevant neural mechanisms and processes of extreme political attitudes and behaviours deserves more attention. It is well-known that the amygdala plays a vital role in many highly emotional processes and its interconnections with the PFC mediate cognitive, emotional, physiological, and behavioural responses. The amygdala has a prominent role in fear conditioning and aversive processing, but a number of scientists have recognized that the amygdala also plays a role in appetitive processing (Salzman & Fusi, 2010). Complex set of cognitive-emotional processes important for analysis of extreme political attitudes is associated with: the medial PFC (mPFC), the anterior cingulate cortex (ACC), the temporoparietal junction (TPJ), the superior temporal sulcus (STS) and the temporal poles (TP). While the mPFC has a special role in political and social cognitive processes, amygdala activities are connected to extreme political attitudes and are crucial in shaping responses to socially threatening images and life-threatening situations (Amodio & Frith, 2006). These findings suggest that extreme political attitudes may strongly impact amygdala and the PFC neural networks, providing an explanation for the lack of flexibility and adaptability in rigid extreme political attitudes and persistence of political terrorism and political conflicts (Oxley et al., 2008). The degree to which a political statement is regarded as radical or moderate is associated with activation in the anteroventral striatum (AS) and posterior cingulate cortex/precuneus (PCC/PC), the degree of individualism of political beliefs with activation in the mPFC and TPJ, and the degree of conservatism with activation in the dorsolateral PFC (dlPFC) (Zamboni et

al., 2009). Majority of discussed neuroanatomical structures are illustrated in Figure 1.

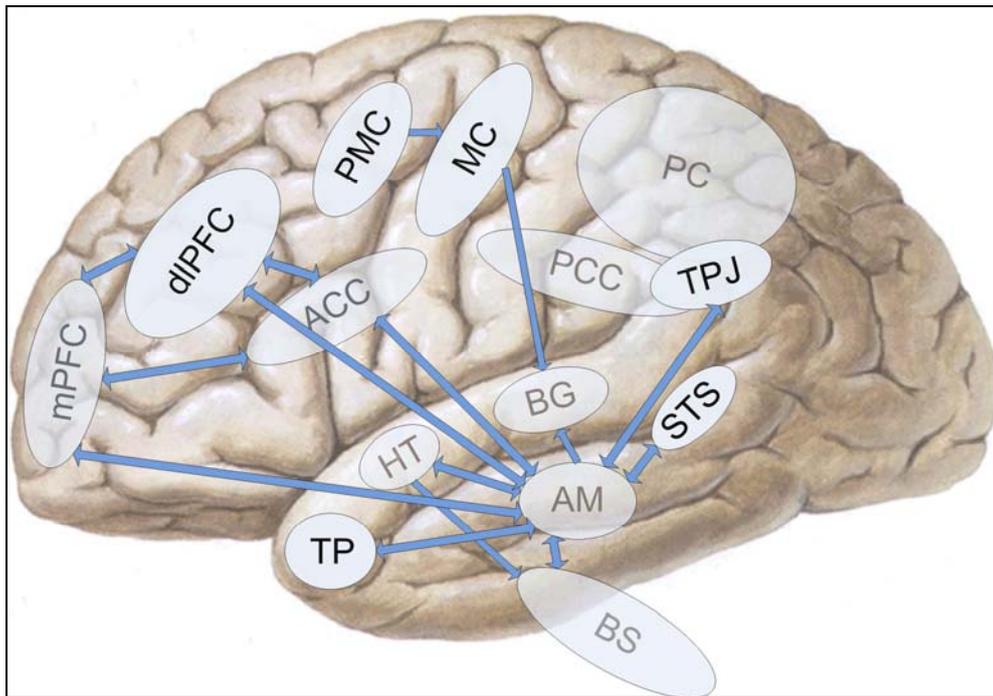


Figure 1. Neuroanatomical structures discussed in relation to extreme political attitudes.

Social psychologists and cognitive neuroscientists have also investigated the psychological and neural mechanisms of inter-group hostility, and have found that only the PC activity correlated strongly with both explicit and implicit behavioural measures of negative attitudes toward the out-group (Bruneau & Saxe, 2010). As the PC is located in the medial parietal cortex, this evidence seems to indicate that, in addition to the amygdala and PFC, the parietal cortex may have important role in the formation and maintenance of extreme political attitudes.

Researchers also strive to better understand the critical periods of brain development and suggest that stress, aggression, and violent behaviour may affect the developmental process. Hostile destructiveness as a form of aggression “is not present at birth”. What produces this type of behaviour is the experience of “excessive displeasure”. This type of aggression is influenced by the relationships that children have within the social environments provided to them (Onwuachi-Saunders et al., 1998). The old debate on the relative contribution of nature versus nurture to the construction and maintenance of brain architecture has led to the widely accepted consensus—genes and environment work in concert in shaping neural circuits and behaviour. Fundamental contributions to the development of the nature-nurture debate came from the experiments by Rosenzweig and colleagues, which introduced environmental (social) enrichment as an experimental protocol specifically devoted to investigate the influence of environment on brain and behaviour, showing that the morphology, chemistry and physiology of the brain can be remarkably altered by modifying the quality and intensity of environmental stimulation. Since then, many studies have shown that environmental enrichment elicits in the brain changes ranging from the molecular to the anatomical and functional level (Sale et al., 2009; Van Praag et al., 2000).

But the main question remains, what society can and should do to nurture children through these periods and to support their continued growth and development. Over the past two centuries, there have been several

accounts of, and claims for, the positive effects of environmental stimulation and enrichment on the brain and brain function. These facts and findings are strong fundament for Emotionally Based Strategic Communications (EBSC) as a communication method for transforming negative dominant emotional maps into more positive ones introduced in this paper.

Dominant Emotional Maps and Their Transformation

Since negative effects play a significant role in processes of political radicalization, better understanding of emotions within a group or a population may help mitigate the toxic power of negative effects. This section is concerned with how to determine which emotions prevail in a collectivity and we propose “dominant emotional maps” as a particular form of representing dominant emotions within a group or a population.² Mitigating the toxic power of negative emotions corresponds to the transformation of negative dominant emotional maps to more positive ones.

The so-called “bottom-up” approach to “group emotion” focuses on “how the combination of individual group member affect shapes the development of group emotion” (Barsade & Gibson, 1998, p. 82). Such an approach, in particular, allows for examination of the mean-level effect of the group, the degree of emotional homogeneity/heterogeneity within the group, and the influence of the most emotionally extreme (minimum and maximum) members of the group (Barsade & Gibson, 1998). Obtaining such statistical measures as subjective feelings using different questionnaires is a necessary prerequisite for a better understanding of group emotion.

In line with the bottom-up approach group dominant emotional maps emerge from aggregation of the emotional maps of individual members of a population. Dominant emotional maps are intended to capture “dominant emotions”, i.e., “publicly expressed feelings perceived by participants and observers as most prominent in an episode of collective behaviour” (Lofland, 1985, p. 39). Dominant emotional maps can also be regarded as representations of collective emotional orientations of a population or a group under consideration.³

We formally represent the concept of a dominant emotional map as a histogram over valence/arousal space, in which valence axis denotes an axis of displeasure-pleasure and arousal axis denotes degrees of arousal from sleepiness to maximum arousal (Russell, 1980). In a dominant emotional map histogram, each valence/arousal pair is assigned a number of individuals from the targeted group who experience this valence/arousal. Valence and arousal of each individual are integers in the range from 1 to 9 (Bradley & Lang, 1994; Lang, Bradley, & Cuthbert, 2005). When calculating the emotional map, each individual in the targeted group may additionally be weighted by an appropriate weighting factor. The weighting factor reflects the position of an individual within the group structure, and it is expected to be larger for individuals holding more

² Our main focus is on “on-line emotion regulation” taking place immediately after the occurrence of triggering events, and encouraging “specific appraisals that correspond with emotions that serve constructive purposes while avoiding the use of appraisals that are associated with destructive emotions” (Halperin, Sharvit, & Gross, 2011, p. 90). However, many small achievements of on-line emotion regulation may accumulate in time and facilitate “prospective emotion regulation” occurring on a longer time scale and affecting the longer-term sentiments and moods.

³ Strictly speaking, dominant emotional maps are intended to capture society members’ emotional experience as the foremost of seven criteria for identifying a collective emotional orientation. Other criteria include frequent appearance of a given emotion in public discourse; widely shared beliefs that invoke the given emotion; dissemination of cultural products expressing the emotion; transmission of beliefs that reflect and invoke the given emotion by educational system; embeddedness of the emotion and the beliefs that evoke it in collective memory; and the prominent role of beliefs that invoke the given emotion in institutionalized decision-making (Bar-Tal, 2001). Apart from people’s emotional experience, we do not, as yet, attempt to capture these additional dimensions of a collective emotional orientation by the notion of a dominant emotional map. It is, however, plausible to expect that a change in experienced emotions would facilitate changes in these additional dimensions in generally the same direction.

influential positions in the group. In this way, the concept of weighting factor helps the group-emotion analyst to describe a contribution to the emotional map of the most influential group actors that are considered capable of “feeling on behalf of the entire group”, and thus influencing more the emotional response to a current situation. By setting the weighting factors of the surveyed individuals correctly, the analyst can derive an accurate emotional map of the surveyed sample. If the sample has been chosen representatively for the entire targeted group, this map should be a solid approximation of dominant emotions of the group. Defining dominant emotional map as a histogram provides information about the distribution of emotions within the targeted group.

An illustration of a hypothetical emotional map of a radicalized group is given in Figure 2. The height of the surface over the valence/arousal space is related to the number of individuals who experience a particular valence/arousal. From the contour plots, it is easy to notice that the centre of gravity (CoG), i.e., an average of all valence/arousal values weighted by their corresponding surface heights, is situated in the upper-left quadrant of the valence/arousal space, due to dominant presence of negative and mostly arousing emotions, like anger, humiliation and fear.

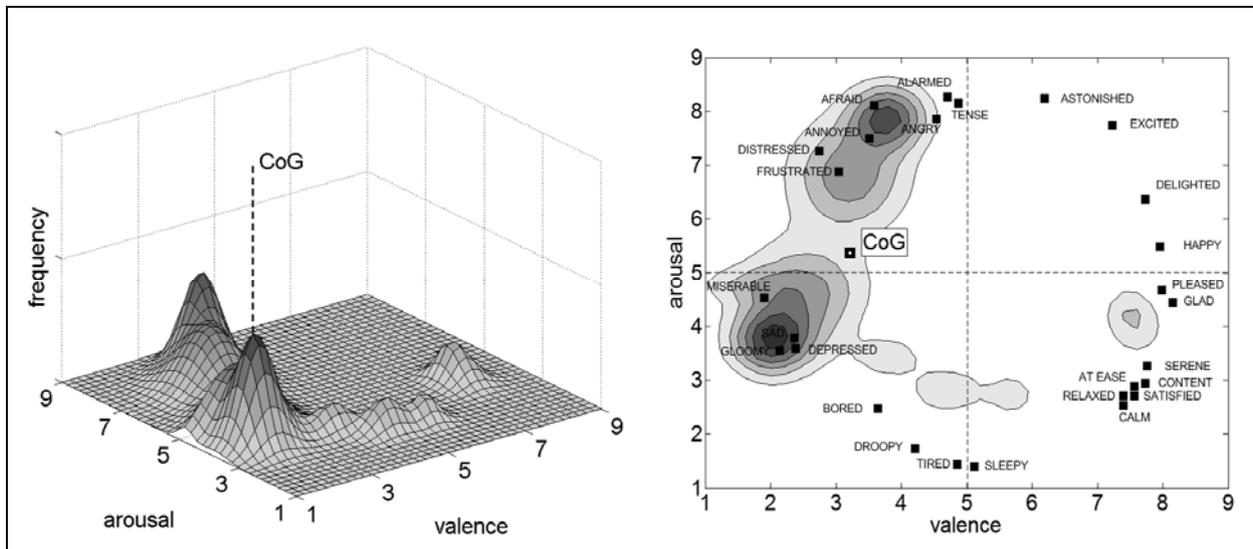


Figure 2. Hypothetical emotional map and the corresponding centre of gravity of a radicalized group: surface plot (left), contour plot (right).

An illustration of a group exhibiting positive collective emotional orientation is shown in Figure 3. From the contour plot, the centre of gravity is visibly situated in the lower-right quadrant of the valence/arousal space, indicating dominance of positive emotions, like hope, optimism, confidence, etc.

Dominant emotional maps over valence/arousal space may be collected by appropriate survey methods, like anonymous distribution of questionnaires. These maps represent only the subjective feelings of group members according to valence/arousal representation, i.e., the group members' emotional state subvectors, not the entire augmented mental state vectors introduced in section 3. More complete insight into group mental state can be obtained by previously mentioned subvectors, like cognitive, physiological, behavioral, and neural, using other measurement methods. The estimation and assessment of augmented mental state of groups and wider populations is extremely important, but at the same time a very challenging and complex task.

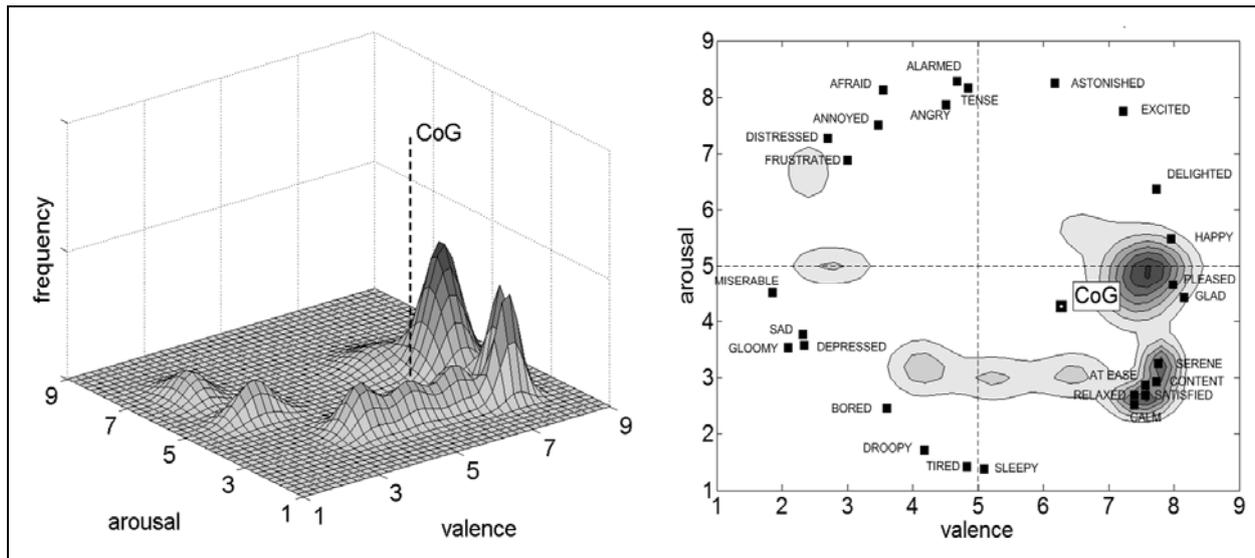


Figure 3. Hypothetical emotional map and the corresponding centre of gravity of a group exhibiting positive collective emotional orientation: surface plot (left), contour plot (right).

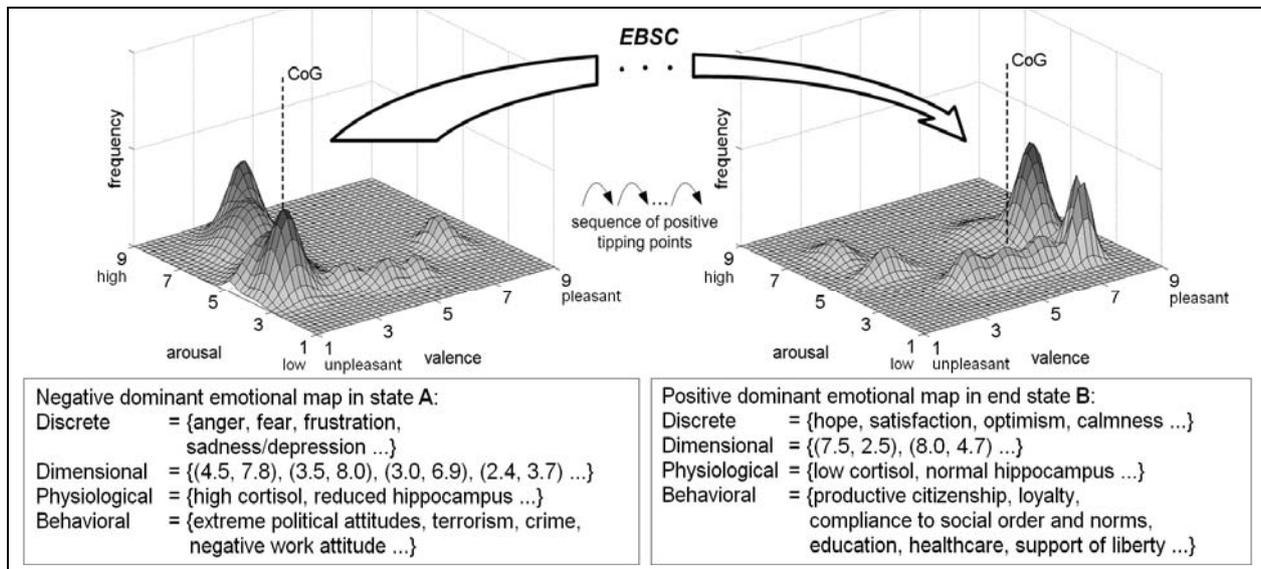


Figure 4. Transformation of a negative dominant emotional map of a group or a population to a desirable positive dominant emotional map.

Transformation of a negative dominant emotional map of a group or a population to a desirable positive dominant emotional map is illustrated in Figure 4. Such a transformation should be facilitated by EBSC—a communication method elaborated in more detail in the next section. The ultimate goal is to change the emotions of a critical mass of individuals within a targeted group or population—the agents of emotional change—so that the dominant emotional map of the group begins to converge, through a series of tipping points, to the map of the desirable end state B. At each tipping point, the emotional transformation that takes place at the neurobiological/brain level of each member of the critical mass shifts the emotional orientation of the group closer to the desirable positive dominant emotional map.

EBSC and Neural Enrichments

The concept of EBSC is an extension of our previous research (Ćosić, Popović, Kostović, & Judaš, 2010; Ćosić, Popović, Kukulja, Horvat, & Dropuljić, 2010) regarding semantically and emotionally controllable stimulation of individual “emotional brain” (LeDoux, 1996) in prevention and treatment of posttraumatic stress disorder. In line with this extension from an individual to a group level, we are introducing the notion of EBSC as a modification of the traditional concept of strategic communications.⁴

Societal and environmental enrichment in the form of positively valenced EBSC might have positive social impact eliciting various positive neuronal responses and changes in a brain of affected people, ranging from different biochemical parameter changes to structural changes like axonal growth, dendritic arborisation, neurogenesis and improved learning. The metrics used to assess positive brain changes of environmental enrichments based on continuous EBSC might be related to the number of positive neural changes like synaptic plasticity, hippocampal neurogenesis, dendrite branching, neurotransmitters increase, increase of amplitudes and duration of long-term potentiation, etc. (Van Praag et al., 2000). Even in 1964, Altman described neurogenesis in adult hippocampus as a result of environmental enrichment in the form of adequate brain training. Neural changes, in anatomical or physiological form, that may result from brain exposures to enriched environmental and social stimulation based on EBSC are real challenge for future joint multidisciplinary research, particularly concerning critical ages when the positive impact of EBSC is more influential than in the others.

Strategic communications, as a means of influencing perceptions, attitudes, beliefs and behaviour of a targeted audience toward some desirable end state, should be strengthened by using positive emotions more explicitly. Indeed, influencing people without touching their emotions is almost impossible, either in individual psychotherapy or in strategic communications addressing a broader population. Taking into consideration a wider social and cultural environment within which communications take place, EBSC are conceptualized as the stimulation of a group “emotional brain” by an appropriate public stimulation strategy in order to influence perceptions, attitudes and behaviour of the targeted group. EBSC also represents a framework for generating fresh attitudes and innovative support systems that may nurture people through the critical periods of their brain development and beyond.

The Origin and Background of EBSC

The idea of EBSC originates from our experience gathered with individual psycho-therapeutic techniques based on virtual reality adaptive stimulation of limbic networks (Ćosić et al., 2010). The technique consists of stimulating an individual’s “emotional brain” in a controlled way by semantically and emotionally annotated multimedia stimuli in various media forms, like real-life video clips, static pictures, sounds, stories, and synthetic images and clips. Such controllable stimulation of an individual “emotional brain” based on its emotional state estimation and adaptive closed-loop control of delivered stimuli can be extended and

⁴ Strategic communications in their entirety encompass various communications activities and capabilities such as public diplomacy, public affairs, military public affairs, information operations, and psychological operations. The psychological operations’ component of strategic communications, which is at the focus of this work, can be defined as “planned psychological activities using methods of communications and other means directed to approved audiences in order to influence perceptions, attitudes and behavior affecting the achievement of political and military objectives” (NATO, 2009, pp. 1-2, 1-3). A similar definition refers to strategic communication (in singular) as “a systematic series of sustained and coherent activities, conducted across strategic, operational and tactical levels,... to promote and sustain particular types of ideas, opinions and behavior” (Tatham, 2008, p. 3).

generalized to a broader societal context.

The move from individual psycho-therapeutic techniques toward psychological operations at a strategic level, based on EBSC, can be partially justified by their common neurobiological underpinnings.⁵ In both cases we are addressing specific neural networks within the “emotional brain”, and neurobiological changes induced in these networks by synaptic reinforcement may cause positive behavioral and cognitive responses and attitudes. In other words, the neurobiological background of the individual therapeutic techniques and EBSC is essentially the same.

There are, however, some important differences between an individual psycho-therapeutic and a collective strategic communication setting that warrant further attention.⁶ In particular, individual psycho-therapeutic treatments are characterized by controllable conditions, under which each particular stimulus is administered to each individual subject. Such a controllable experimental situation is not easily reachable in a strategic communications setting.

The target of EBSC is usually a relatively homogeneous group, to whom a message containing a group-relevant, emotionally charged content should be sent, most often by means of available communication media, such as leaflets, radio, television, etc.

The assumptions that the local group is socially and culturally homogeneous and that the group membership is salient for the members imply that “the group functions as a part of the self” for its members, that group-relevant situations and events are appraised as self-relevant, and that they trigger emotions just as self-relevant situations and events do (Smith, 1993, p. 303). In other words, given the targeted group is relatively homogeneous and the group membership salient, group-relevant situations and events can be assumed self-relevant for the group members, and the triggered emotions can be assumed relatively homogeneous across the group, as well as the behaviours that these emotions induce.

The assumption that all members of the targeted group would receive delivered EBSC messages is not realistic. It is, indeed, more likely that messages will directly reach only a few members of the targeted group, but the internal group hierarchy and dynamics will facilitate dissemination of delivered EBSC messages across the entire group inducing desirable emotional impact on the group as a whole.

Presumably, certain individuals appear to be more emotionally expressive and contagious than others (Hatfield, Cacioppo, & Rapson, 1994). These individuals can act as “agents of positive emotional changes”, resembling the notion of “change agents” in the theory of social norms, where individuals who first start to deviate from an established pattern of behaviour have been called so (Ellickson, 2001). The “change agents” seem to be particularly important in the case of EBSC also, since it is the change of a predominantly negative emotional context that strategic communicators would like to incite with most of their messages.

Normative change agents have been noted to possess distinct cognitive abilities, such as high social intelligence and leadership skills (Ellickson, 2001). Agents of emotional change can be regarded as emotional

⁵ For a general overview of neuroscientific implications for social sciences, see Franks (2010). Moreno (2006, p. 162) used the term “neurosecurity” to refer “both to the ways that science and technology targeted at the brain and nervous system should be managed for the public good, and the means that democratic states must develop to protect themselves from their adversaries”. EBSC can be regarded as an effort toward founding strategic communications based on neurosecurity.

⁶ “Although the output of a social system is enacted by individuals whose actions are controlled by the brain and nervous system, a complex system of any kind can rarely be understood as a simple extrapolation from the properties of its elementary components” (Cacioppo & Visser, 2003, p. 649).

counterparts of the more cognitively oriented change agents from the emergent norm theory.⁷ If the same person is endowed with both the above highlighted cognitive and emotional skills, that would make them a particularly potent candidate for an agent of positive emotional change.

Since agents of emotional change are more emotionally expressive and transmissive than other individuals, they will play a particularly important role in “the process of dissemination as underlying the formation of the collective emotional orientation” (Jarymowicz & Bar-Tal, 2006, p. 375). Such dissemination may occur via biological, psychological and social processes, at both unconscious and conscious levels (Jarymowicz & Bar-Tal, 2006). The collective emotional orientation results from these processes and presents a “part of the lens” through which group members facilitate and influence perception and interpretation of the surrounding emotional context.

If the emotionally charged strategic communication messages target change agents as their primary recipients, it is to be expected that the heightened emotional expressiveness and contagiousness of change agents will facilitate further propagation of the positive effects of the received messages throughout the entire group, contributing to the group’s more positive collective emotional orientation. Indeed, emotion can be regarded as “that part of the relationship in which the subject of the relationship... is in some way changed, and, in being so changed, is disposed to change the relationship itself” (Barbalet, 2002, p. 4), thereby beginning a possible cascade dynamics of micro-changes at the level of individual interactions leading to an all-pervasive change at the group level.

An important precondition for individuals to be able to act as agents of change and start a cascade of positive emotional changes is that they belong to a network. In the absence of networks, positive emotions are not able to reach out of small and closed cliques, and spread within and across groups. The so-called “positively connected networks” are particularly important in this respect since such networks contain mutually supportive dyadic ties and incentives to interact with other members of the network. Such networks should “promote the diffusion of emotions and feelings from one dyadic exchange relation to another” (Lawler, 2001, p. 344).

How can we assume that the positive emotions will propagate from the group level toward a wider inter-group level? Namely, increasing positive in-group emotions may also increase negative out-group emotions, due to in-group/out-group bias. There are, however, indications that cognitive efforts leading toward the extension of the social categories and inclusion of the out-group members in the common “We” category may mitigate the in-group/out-group bias (Jarymowicz & Bar-Tal, 2006; Lindner, 2009). The narrative content of EBSC messages must therefore be designed with the intent to encourage the recipients’ cognitive efforts aimed at inclusion of wider social categories in an all-encompassing “We” category.

A long enough delivering of EBSC messages focused on selected agents of change within the targeted groups should eventually lead to a transformation of dominant emotional maps. In particular, each successful application of the method might provide an occasion for a “tipping point” (Gladwell, 2000) of the underlying nonlinear emotional dynamics, shifting the centre of gravity of the dominant emotional map toward the lower right quadrant, as represented in Figure 3. The intensity of positive emotional change at each tipping point depends on a multitude of factors, such as prior attitudes of the targeted group, manner of presenting the

⁷ There exists a general logical equivalence between the more cognitively oriented emergent norm theory and the more affectively oriented dominant emotion theory (Lofland, 1985, p. 39), which justifies the use of the change agent’s concept when considering changes of collectively dominant emotions. Finnemore and Sikkink (1998, p. 898) also hinted at a link between social change and emotional factors, noting that “for many of the social norms of interest to political scientists, it is very difficult to explain the motivations of norm entrepreneurs without reference to empathy, altruism, and ideational commitment”.

message to the targeted group, internal-targeted group dynamics, and so on. Relatively short-term, positive shifts in transient emotions, achieved in tipping points, should accumulate in time and lead to longer-lasting positive changes in sentiments and moods.

The Technique of EBSC

The objective of EBSC is to deliver semantically relevant and emotionally appropriate multimedia stimuli from specifically designed emotional databases toward a targeted group. The assessment of the group's dominant emotional maps can be based on appropriate polling techniques, intelligence data, and various open-source information. Emotional state estimation includes aggregated emotional feelings, beliefs, a behavioral component like impulsive or expressive gestures, a cognitive component of appraisal of stimuli and situations, and a motivational component of readiness for action (Scherer, 1984). Questionnaires used in emotional state assessment may include questions on how respondents personally feel, as well as questions on what respondents who believe other group members are feeling (e.g., De Rivera, Kurrien, & Olsen, 2007). Consequently, estimated dominant emotional maps encompass group's emotional experience as well as corresponding behavioral and cognitive components.

On the basis of a comparative analysis between delivered semantically and emotionally annotated stimuli and their impacts on a dominant emotional map of the targeted group, an appropriate emotional adaptive expert system updates the stimulation strategy in order to influence perceptions, attitudes and behaviour of the targeted group. However, one needs to realize that it takes time to receive positive feedback from the group, assuring that the EBSC-based approach is successful indeed.

The emotional adaptive expert system is a "focal point" where all the observable indicators of the targeted group's emotional state are collected, as well as all the relevant information needed for the annotation of generated multimedia stimuli. In order to choose a highly responsive emotional stimulus, the emotional adaptive expert system needs all kinds of relevant information from the intelligence and knowledge database of the targeted group. This database contains intelligence information and knowledge on the targeted group's social psychology, history, local cultural context, language/symbol systems, behavioral codes, power relations, motivations, intentions, and most pressing personal needs of the group's members and leaders, including potential agents of positive change.

Selected multimedia stimuli should be continuously broadcast by radio stations, leaflets, TV stations, or other communications media. If needed, mass media broadcasting can be complemented by person-to-person dissemination of messages at public gatherings.

Messages would be interpreted locally by the members of the targeted group. Cognitive and emotional brains of the group members would process delivered EBSC messages, place them into a particular historical, cultural, and political context and evaluate their meanings and emotional properties. Since human beings are not dictionaries, but cultural and emotional interpreters of meanings, the meanings are not solely contained in the words chosen to convey a message (Goodall, Trethewey, & McDonald, 2006). Delivered messages are therefore described by emotional properties such as valence and arousal, and by their relevant narrative content. The integration of emotional properties and narrative content should be designed with flexibility in mind in order to emphasize right issues in right time. The best and most successful combinations of emotional properties and narrative content are those which embrace ideas and emotions that quickly gain resonance with the targeted group (Tatham, 2008).

Tools and mechanisms that can be used for generating complex multimedia stimuli are enormous. A well-designed EBSC utilizing traditional media like newspapers, radio, and television can induce resonance with the targeted audience. New media such as Internet sites and services, blogs, text messaging, e-wireless press and others may also play an important role in sufficiently technologically advanced societies. Creative fusion of available media resources in generating multidimensional stimuli may enhance the effectiveness of EBSC.

Yet, opinion is formed not just by words but by emotionally based perceptions. Thus, when conveying information we must consider culture, history, and traditions of the intended audiences. Understanding and taking into account specific psychosocial mental complexes, socio-cultural and socio-political structures, as well as their mutual interdependence, is crucial for designing effective EBSC messages directed to specific audiences.

Each EBSC-generated message should be designed with the intent of transforming the initial dominant emotional map toward desirable dominant emotional map, as illustrated by Figure 4. Productive EBSC messages must resonate among targeted audiences and ignite a form of “transformational feedback” (Trethewey, Corman, & Goodall, 2009) that moves the targeted group closer to the desirable dominant emotional map.

Conclusions

Security with its attendant feelings of confidence and comfort is the “emotional template” of “secure states” (Berezin, 2002, p. 38). A sense of security comes with feelings of satisfaction, tranquillity, contentment, and peace (Bar-Tal, Halperin, & De Rivera, 2007). All these emotions are obviously lacking within intensely radicalized social environments. In this article we have started to explore how this genuine sense of security can be restored and maintained.

Using interdisciplinary approach, which included strategic communications (Corman & Dooley, 2008; Tatham, 2008), the intersections between neuroscience, psychology and political science (Cacioppo & Visser, 2003; Connolly, 2002; Kostović, 2008), cyber-psychology (Ćosić et al., 2010; B. K. Wiederhold & M. D. Wiederhold, 2008), and the emerging geopolitics of emotions (Moisi, 2009), we have proposed the application of EBSC as a potential leverage in ongoing efforts to maintain political stability and security in social settings threatened by extreme political attitudes and intense radicalization. EBSC have been conceptualized as a means of transforming negative dominant emotional maps of targeted groups into more positive ones. Prevention and reduction of negative emotions may ease social tensions in politically polarized, culturally fragmented, or economically stratified social settings, thereby facilitating harmonization of diversified communities. Using EBSC in order to decrease the destructive power of extreme political attitudes can be regarded as a “large-scale [strategy] of emotion regulation” (Halperin, Sharvit, & Gross, 2011, p. 98).

Influencing public perception by means of EBSC requires specific knowledge and experience that enables successful transformation of dominant emotional maps. Identifying dominant emotions of targeted groups should be aimed at reversing these emotions wherever they are negative and taking advantage of them wherever they are positive. A well-designed EBSC approach in the form of adequate public campaigning can induce vitally important positive emotional enrichment facilitating a genuine positive outlook of targeted groups on their future.

Economic, political, security, institution-building, and other state-level societal transformation processes

have much slower time dynamics in comparison with emotional dynamics at the individual level as well as the group level, i.e., integrated state-level societal transformational inertia is much larger than the inertia of neural networks of an individual and group “emotional brain”. However, we would like to note that a synchronous change of dominant emotions of wide segments of the population may provide a “driving force” or “leverage” for more all-encompassing societal changes. The synchronous change of individuals’ emotions by EBSC at a micro-level may lead to sweeping changes at the macro-level. Changing emotions of individual subjects changes their mutual relationships, which provides a social foundation for changing entire social collectivity. In particular, the change of dominant emotions implies a change in “action tendencies” of large numbers of individuals providing a basis for a coherent collective action at the societal macro-level.⁸

More generally, EBSC can be applied as a comprehensive process through which individual emotions are reshaped and collectivized in a more cooperative manner, producing and shaping extremely valuable “soft power”. Based on EBSC and the neuroplasticity of individual neural networks, emotional maps of many individuals may be aggregated into new dominant emotional maps. Such aggregated clusters of emotionally positive people may provide a base for collective action of diverse individuals, who do not necessarily share common goals, objectives, interests, or values, and may comprise a remarkable “soft”, emotional power of change toward a new, healthier socio-cultural environment. Therefore, we regard EBSC as compatible with and capable of contributing to a distinct “soft power” approach to security policy.

We need to emphasize that EBSC are certainly not a panacea to all societal problems and that its chances of success are meagre if the efforts at its implementation are not simultaneously combined with economic, political, security, institution-building and other measures at the societal level. Only then, strategic emotional management embedded in EBSC may contribute to the success of transformational processes. But, from a psychological viewpoint, results and achievements of economic, political, security and institution-building policies are often not, without the facilitative effects of EBSC, perceived as valuable in the hearts and minds of affected individuals and groups. In other words, EBSC may be regarded as a necessary, but not sufficient precondition to any comprehensive policy implementation.

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⁸ Long and Brecke (2003, pp. 30-31) argued, for example, that the process of post-conflict reconciliation fundamentally represented “an emotionally cued change to a specific problem-solving mechanism” taking place within the brains of individuals, and that this process might be facilitated at the societal level by a specific type of reconciliation events involving individual representatives of the parties to a conflict.

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