

# Summary



## Summary

How likely is it that you will respond with anger when someone provokes you? The traditional answer to this question is that it depends on your level of trait anger. When you are high on trait anger, you are likely to experience angry feelings more often, more intensely, and for longer durations, than when you are low on trait anger. However, your level of trait anger may be only part of the story. Indeed, this dissertation proposes that we can better understand trait anger as a situated personality disposition, which only translates into anger in situations where the anger is accompanied by an increase in approach motivation. When approach motivation gets blocked, you are less likely to become enraged, even when you are high on trait anger.

**Chapter 2** starts with a brief review of the psychology of trait anger. Higher levels of trait anger predict increased anger and aggression in many important life domains, such as road rage, work conflicts, and abusive interpersonal relationships. Moreover, high trait anger is associated with many psychological disorders and predicts high blood pressure and cardiovascular disease. It thus seems important to learn more about the processes underlying trait anger. Cognitive research suggests that trait anger is linked to chronic tendencies to perceive situations as hostile, and to the impaired ability to regulate these hostile thoughts and feelings. Motivational research suggests that trait anger is linked to increased approach motivation, especially in threatening situations. The motivational dynamics that are associated with trait anger are central to the empirical research that is discussed in Chapters 3-7.

**Chapter 3** describes an experiment in which participants completed an approach-avoidance task. In this task, participants made approach or avoidance movements with joysticks towards faces with an angry or happy expression, and a direct or averted eye gaze. The results showed that higher levels of trait anger predicted faster approach than avoidance movements towards angry faces with a direct eye gaze, i.e., stimuli that pose a specific social threat, in contrast to angry faces with an averted gaze or happy faces. These findings are consistent with the idea that trait anger is a situated motivational trait, that is, a disposition that manifests itself primarily in specific contexts that provoke hostility, in this case, the confrontation with an angry face.

**Chapter 4** investigates the causal role of approach motivation in the effects of trait anger. In three different experiments, behaviors that are associated with avoidance, such as leaning back (instead of leaning forward or sitting straight) or pushing away (instead of pulling toward) were found to inhibit the relation between trait anger and state anger or aggression. In other words, high trait anger did not lead to more angry feelings or aggressive behavior than low trait anger. These findings indicate that blocking the activation of approach motivation in anger relevant situations prevents trait anger to be translated into state anger and aggression. It thus appears that approach motivation plays a causal role in the heightened anger and aggression that is displayed by high trait anger people.

**Chapter 5** considers hormonal influences on anger and aggression. Prior research has shown that a combination of high testosterone and low cortisol is associated with both higher approach motivation and greater aggression. An experimental study examined whether this hormone-aggression link was moderated by motivation-related postures. Participants' level of testosterone and cortisol was assessed before and after the experiment using saliva samples. While either leaning forward, backwards, or sitting straight, participants' aggressive impulses toward a just recalled provoking person were measured. The combination of high testosterone-low cortisol reactions was related to increased aggressive impulses when participants assumed an approach-related posture (i.e., when they were leaning forward). However, the combination of high testosterone-low cortisol was not associated with increased aggressive impulses when participants assumed an avoidance-related posture (i.e., when they were leaning backward), or a control posture (i.e., sitting straight). These results suggest that motivation-related behaviors not only moderate aggressive tendencies due to personality traits, but also aggressive tendencies due to hormonal influences.

**Chapter 6** investigates if training avoidance tendencies to angry faces may improve anger management skills. In two experiments, participants repeatedly responded with either avoidance or approach movements to angry faces, using a validated joystick task. Participants' anger and aggression were measured after recalling or imagining an anger provoking situation. Both experiments showed that, after avoidance training, participants reported less angry feelings and expressed less aggressive impulses, than after approach training in response to angry faces. Furthermore, the second experiment found that the motivational training effect on aggressive impulses was most pronounced among participants with high trait anger. The results may inspire the development of practical anger management interventions.

**Chapter 7** examines how basic motivational states towards approach and avoidance may be influenced by ambient lighting cues. Because humans are diurnal animals, lighter environments are likely to evoke more approach motivation than dark environments. Consistent with this, a laboratory experiment showed that people report less approach motivation when they were sitting in a dark room rather than in a well-lit room. Moreover, a quasi-experiment ran on the streets of the city of Utrecht (the Netherlands) indicated that naturally occurring differences in lighting cues moderated the relation between trait anger and state anger. When people were interviewed in the light of daytime, higher trait anger was associated with more state anger in response to an imagined anger-arousing situation. By contrast, when participants were interviewed in the dark of nighttime, there was no association between trait anger and state anger. These results suggest that motivational processes are not only influenced by the affordances (i.e., the possibilities for the kind of actions that people want to pursue) of the body, but also by broader perceptual affordances such as lighting.

**Chapter 8** relates the motivational approach to anger and aggression management to a broader framework of situated emotion regulation. Traditional theories have depicted



## Summary

emotion regulation as a mental process that unfolds mostly inside people's heads. A major shortcoming of such mentalistic models is that they fail to consider emergent qualities that arise from people's dynamic interactions with the environment. Chapter 8 goes on to outline an alternative way of thinking about emotion regulation, which is inspired by theories of situated cognition. In this situated cognition approach, emotion regulation arises from the dynamic interplay between the person and affordances of the situation. This perspective proposes that people rely on their body and external surroundings to support their emotion regulation skills. The studies presented in this dissertation are in line with this perspective, and illuminate how these situational affordances shape anger and aggression management. More specifically, the present work illustrates that situated changes in approach-avoidance motivation (body posture, arm movement, or ambient lighting) drive the association between dispositional anger and state anger, and aggressive behavior.

Taken together, the work in this dissertation sheds new light on anger and aggression processes, by offering a nuanced view of the way in which our emotions evolve and subside dynamically. Traditionally, personality dispositions like trait anger have been considered as general tendencies to display the same kind of behavior across different situations. Here, we suggest that behaviors and emotions related to personality are not necessarily consistent across situations. By integrating traditional with situated approaches to personality this dissertation offers a novel frame work for understanding the complexity of the human experience of anger. People who are dispositionally prone to react with increased anger and aggression to anger provoking situations might be prevented from becoming angry or aggressive by blocking or reducing their approach motivation, for instance, by leaning backward, push their arms on the table, or darkening the environment. Thus, the likelihood that people become angry in response to an anger provoking person, not just depends on their dispositions, but also on the motivational affordances of the situation.



