Can people feel two emotions at the same time? It seems intuitive that they may experience two similar emotions (e.g. happiness and amusement, or fear and anxiety). However, could they feel two different emotions at the same time? Can people be simultaneously happy and scared, amused and disgusted, willing to do something and scared by it at the same time**? If so, how this state of ambiguity and conflict could influence their cognitive functioning?** Usually the emotions are thought to decrease the cognitive performance; however, studies showed that this effect is very dependent on their underlying dimensional characteristics (whether they are positive, negative, subjectively significant or not, etc.), and as such should be carefully studied. The state of emotional ambiguity (conflict between the constructs) also seems to be a very unique state, with specifics not to be simplified to the properties of unidimensional, simple affect.

Presented **project concerns the phenomenon of ambiguous (mixed) emotions** - defined as feeling two affective states of different characteristics (such as positivity and negativity) at the same time **and its' influence on the efficacy of the cognitive functions**: attention span, working memory, and cognitive control. The series of six experiments will include the ambiguity on each the dualistic emotional spaces of valence, origin and activity. Valence can be divided into constructs of positivity (pleasantness) and negativity (unpleasantness). Origin of emotions may be distinguished into automatic (being an innate reaction to the stimuli, fast and effortless), and reflective (being more cognitive, processed reaction, slow and effortful). Lastly, there is the space of activity, divided into more biological arousal (how automatically activating is the stimulus), and the rather reflective, deliberative state of subjective significance (how important is the stimulus for one's goals). Planned experiments will be an attempt to map characteristics of ambiguity on these three dimensions and their influence to the working memory performance. To study it, we will use three different experimental paradigms (each in two versions): Complex Visual Search task (for measuring the attention span and the effectiveness of searching the visual space), N-back task (for measuring the working memory), and Emotional Stroop Test (for measuring the cognitive control).

For the eliciting state of emotional ambiguity, they will use previously validated words (evaluated with the use of psychological and eye – tracking method). The main aim of the experiments will be to compare the characteristics of conflicting, ambiguous stimuli (with declared ambiguity on each one of three spaces) with the unidimensional stimuli, assessed as having only one characteristics (e.g. either automatic or reflective, with no conflict involved), and their distinct influence on the working memory (depending on the kind of ambiguity, either increasing or decreasing its effectiveness).

The pioneering nature of this project is caused foremost by the dimensional approach to the emotions. It allows to generalize the results and conclusions, as they are not limited to the specific emotional categories used in the study, but rather to the whole range of emotions having similar characteristics. Moreover, experiments include studying ambiguity on dimensions on which it (or its influence to the cognitive functions' performance) was never studied before (origin and activity).

The relationship between emotions and cognition is an important and still growing field of research. Obtained results might be useful not only for further psychological research in these area (by determining the characteristics of stimuli, the specifics of dimensions influence on cognitive functions; finally, by creating a general model of relations in such situations), but also for psychological practice (e.g., trainings of emotion regulation, improving emotional competences; in general, in any field connected to the understanding of emotions and their consequences), and linguistic studies (by mapping the properties of words and how they change cognitive functioning).