The relationship between action control and general self-efficacy – empirical data

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Abstract

Psychological processes that lead from intention to a specific action have drawn attention of researchers for decades. The aim of this research was to investigate which aspects of willpower determine the feeling of high efficacy in achieving goals amongst some individuals whereas others struggle even with simple tasks. The process that mediates between intention and action is defined by Julius Kuhl as action control. Major aspects of action and state orientation (Kuhl 1994) have been distinguished : 1) decision-related action orientation (AOD) is the ability to self-generate positive affect in the face of difficulties and problems, 2) failure-related action orientation (AOF) is the ability to reduce negative affect once it aroused and to maintain access to integrated representations of one's own needs and implicit self-representations, 3) performance related action orientation (AOP) which is related to the ability to maintain successful performance of activities. It seems that thus far unique contribution of each of these aspects of action control to the general self-efficacy (Schwarzer 2014), has not been investigated. General self-efficacy is understood as the belief that a person can successfully cope with most of the situations in life. Based on Kuhl's and Schwarzer's theories, it is hypothesized that action control is positively related to general self-efficacy and that each of the components of action control has its unique contribution to general self-efficacy. A total of 292 students from University of Valencia took part in the study, 199 women and 93 men with the mean age of 22.22 years ($SD = 6.85$). Action control was measured with Action Control Scale (ACS-90) designed by Julius Kuhl. Schwarzer's General Self-Efficacy Scale (GSES) was used to measure general self-efficacy. Results showed a significant positive relationship between action control and general self-efficacy. Each component of action control had its unique contribution to the general self-efficacy showing that each of these effectiveness facets of intentions' execution is relatively important for generalized belief about one's own abilities to cope with a wide range of situations in life.

1. Introduction

The processes that mediate between a specific action and execution of the intention has been the subject of much research. It is wondered why is it that some people cope with everyday challenges easily, whereas many struggle to motivate themselves and complete even the simplest tasks. People are often more focused on achieving ambitious goals, which involve higher activity in many areas of life; this requires very effective motivational processes mediating between decision making and executing an intention. These processes, usually called "willpower" were defined by Julius Kuhl as action control. General self-efficacy, understood as one's opinion about one's ability to succeed seems to be related to action control. Self-efficacy is one of the key psychological constructs related to well-being (Schwarzer, Fuchs 1996), therefore, understanding its relationship to different aspects of willpower merits both theoretical and empirical studies. As far as authors are aware, there are no studies which examine direct relation between general self-efficacy and action control and identify unique contribution of different facets of action control to general self-efficacy. Investigating the link between the fairly elaborate, multidimensional construct of action control to relatively simple construct of general self-efficacy was the aim of this study.

Kuhl's theory of action control focuses on the processes that protect current intention from competing action tendencies, also involving the above mentioned process that mediate between plan and its execution. Applied to real world domain, theory suggests that individuals who have high action control would be more likely to cope with various challenges (Kuhl 1994). Kuhl featured three different types of action control: action-orientation is associated with working in favour of task

completion, whereas state-orientation and change-orientation are associated with limiting the ability of the individual to complete tasks. Action orientation refers to one's ability to regulate emotions, thoughts and behaviours on purpose to realize what one has planned. State orientation is associated with under-functioning of the action initiation system (Kuhl 1992). Not only it inhibits the particular behaviours initiation, but also it is linked to the excessive situation analysis and doubtfulness. Change-orientation applies to over-functioning of the action initiation system (Kuhl 1992), and it is characterized by the difficulty to continue satisfying and pleasant activity, early giving up on it and also co-occurrence with starting disturbing actions.

Based on these orientations Kuhl featured three different types of action control: 1) decision-related action orientation (AOD); 2) failure-related action orientation (AOF); 3) the performance related action orientation (AOP). High levels of action control for each of these dimensions is associated with action-orientation. Low efficient action control in a decision making situation (AOD) and situation of failure (AOF) refers to the state-orientation, whereas in the situation of pleasure (AOP) it is connected to change-orientation. In the situation of a decision making (AOD) action-orientated individuals show ability to activate positive affect in the face of difficult, monotonic and also conflictive goals (Kuhl et al. 2006). They are more likely to decide and take specific action faster than state-oriented ones. In the face of failure (AOF) action-orientated individuals can neutralize negative affect, lower mood and moderate stress in the event of failure (Kuhl et al. 2006). They have a higher chance of limiting negative thoughts about a failure and continuing to carry out their subsequent actions, whereas state-orientation is associated with experiencing negative feelings and difficulties with setting up and completing new tasks. In a pleasant situation (AOP) action-orientated individuals are more likely to focus on pleasure with ease. Contrastingly, change-orientated individuals probably would not be able to dedicate themselves to the satisfying activities (Kuhl 1992). AOF and AOD are connected to similar behavioural basis, whereas AOP has slightly different properties, which is emphasized by the fact that low action control is associated with different orientation for AOD and AOF, and different for AOP. Moreover AOP shows other characteristics than AOF and AOD in the studies. Sometimes it is even overlooked (Kuhl 1994a, 1994b).

Self-efficacy has been defined by Albert Bandura as the belief in one's ability to succeed in specific situations or accomplish tasks (1977). General self-efficacy defined by Schwarzer is a global feeling of being able to face problems in many areas of life (Baessler, Schwarzer 1996). It may affect emotions, thoughts and also actions (see Bandura 1997 for a review of the evidence). Self-efficacy is built on the basis of one's own life experiences, constantly putting one's abilities under verification. Beliefs concerning self-efficacy to meet a demand of self-regulation need to involve actual abilities of the individual (Zakrzewski 1987). These cognition mirrors are a sense of control over one's environment; it reflects the belief of being able to control challenging environmental demands by means of taking adaptive actions. It can be understood as a self-confident view of one's ability to face particular life stressors (Schwarzer 1992). Self-efficacy plays important role in everyday functioning and goal selection. It is associated not only with psychological but also physical well-being of an individual. The influence of self-efficacy on blood pressure, heart rate and catecholamine level in challenging or threatening situations was shown. Perceived self-efficacy promotes coping with stress and even influences the immune system (Juczyński 2000). Contrastingly, feeling low self-efficacy is associated with depression, anxiety, helplessness, low self-esteem and harbouring pessimistic thoughts about accomplishments (Schwarzer, Fuchs 1996). In general, self-efficacy is associated with well-being and life satisfaction (Bandura 1997; Łuszczyńska et al. 2005).

General self-efficacy is a belief concerning one's abilities whereas action control applies to one's behaviour and how in reality the individual functions. Many authors (e.g. Łuszczyńska, Schwarzer 2005) highlight that the way to perceive one's skills and subjective chances to complete particular task naturally influence one's participation in task completion. According to socio-cognitive theory, actions are being led by expectancies involving: situation (situation-outcome expectancies), outcome of an action (action-outcome expectancies) and one's self-efficacy (self-efficacy expectancies). As far as situation-outcome expectancies and action-outcome expectancies apply to perceivable action consequences, self-efficacy concerns particular action itself and is part of personal action control (Bandura 1997). Individual who believes in his/her ability to cause a situation

and change it can conduct a more active and self-determined life course. There are some premises to hypothesize that action control and self-efficacy are associated constructs. Expectations of the result and sense of one's general self-efficacy turn out to be the most accurate predictor of both: the intention itself and the actual participation in breast cancer preventive examination (Seydel et al. 1990). Kok et al. (1992) conducted significant research on the influence of one's perceived self-efficacy on intention and actual actions taken to quit smoking. The best predictor was self-efficacy ($r = 0,66$ according to intention, $r = 0,71$ according to actual action). General self-efficacy paints the picture of one's competences and equipment enabling individual to carry out planned actions. The processes of carrying out planned actions are the action control themselves. Based on the results of research and theoretical framework it is ascertained that self-efficacy is crucial in the process of converting intention into action (Schwarzer, Fuchs 1996).

As mentioned above, the decision to invest one's time and energy in task completion depends significantly on individual's belief of being able to successfully accomplish task (Schwarzer 1996). When it comes to preparing and planning action general self-efficacy is one of the major ingredients of motivation; its levels can impede or enhance motivation (Schwarzer 1992). Decision to invest time and energy depends on individuals feeling of being able to complete task effectively. Therefore, individuals with higher general self-efficacy levels choose more challenging tasks, and stick to them (Schwarzer 1992). It could mean that they put more effort in decision making and are simultaneously more involved in task completion thus they aim to effectively make an appropriate decision and realize their intention. Moreover high level of general self-efficacy also applies to lower procrastination (Waschle et al. 2014). Individuals characterized by higher general self-efficacy do not tend to postpone their responsibilities. Hence, they make an appropriate decision and are motivated to realize it. Therefore, it is presumed that action control dimension associated with decision making (AOD) is positively related to and has its unique contribution to general self-efficacy (H1).

Bandura also described the belief concerning one's abilities to influence the undertaken action itself, the effort being put into realizing the plan of action and persistence in completing such action, especially when facing difficulties and failures (Bandura 1986). Moreover, general self-efficacy is linked to coping with stress strategies which are action orientated (Endler, Parker 1990). In fact it means that if individuals with high general self-efficacy happen to be in a stressful situation they will be more prone to undertake constructive problem solving. When facing failure, those individuals find it easier to overcome difficult situation than individuals with lower general self-efficacy. Similar demeanor patterns are being associated with those who have higher action control on the dimension concerning failure (AOF). Based on these premises, it is assumed that action control dimension associated with failure (AOF) is positively related to and has its unique contribution to general self-efficacy (H2).

Low action control in the situation of failure (AOP) is associated with impaired ability to give oneself to pleasant activities and consequently, to rest effectively. Ones with lower action control on this dimension may have difficulties with quietening and relaxing which can have direct influence on their effectiveness in subsequent task completion. Being constantly tired and absorbed by everyday responsibilities they may face difficulties with proper functioning and completing tasks which indeed can cause them to fail. Failing may result in low general self-efficacy, which depends on observing own actions. Individuals with high general self-efficacy are characterized by lower level of rumination (Takagishi et al. 2013). This allows them to give themselves up to pleasant activity, which is associated with high action control on AOP dimension. Based on these premises, it is assumed that action control dimension related to situation of pleasure (AOP) is positively related to and has its unique contribution to general self-efficacy (H3).

2. Methods

Participants. Three hundred and two students and researchers took part in the study. Due to incomplete data, results of 292 participants was used in the statistical analyses; 199 women (68%) and 93 men (32%). Their mean age was $M = 22.22$ years ($SD = 6.85$). Those individuals were studying/working at the University of Valencia in Spain. Students were from different faculties, courses and modes of study.

Measures. Action Control Scale (ACS – 90)(Kuhl 1994a; Spanish adaptation 2004; Guevara et al. 2001; Padilla García et al. 2002) was used to measure action control. Each of three subscales (AOD, AOF, AOP) consists of twelve positions with alternative answering options (A or B). These answering choices indicate respectively action orientation and state orientation or change-orientation in case of subscale AOP. Participants receive one point for each answer indicating action orientation. In each of the three subscale it is possible to achieve a maximum of 12 points. The higher the score is the more action-orientated and simultaneously less state or change-orientated the individual is. Spanish version of Action Control Scale has satisfactory validity and reliability. For the present sample, the Cronbach's alpha reliability coefficient was $\alpha = .77$ (AOF), $\alpha = .75$ (AOD) and $\alpha = .62$ (AOP). ACS-90 has satisfying theoretical validity (Kuhl and Beckmann, 1994).

General self-efficacy was measured with Spanish version of General Self-Efficacy Scale (GSES) (Schwarzer 1992; Spanish adaptation, Baessler and Schwarzer, 1996, Sanjuan et al. 2000). This scale was created with the purpose to measure general self-efficacy about one's abilities to cope with wide range of stressful life situations. Respondents provided answers on four-point scale, from (1) false to (4) true. To receive final general self-efficacy result researchers are instructed to sum up all the answers. That psychometric tool is widely used in large scale surveys concerning health and psychosocial functioning. Cronbach's alpha reliability for this sample was $\alpha = .87$.

Procedure. The research was conducted in November 2008 at the University of Valencia in Spain. Data collection used convenience sampling. Participation in research was facultative. Questionnaires were filled during one sitting in groups of 16-84 participants. Time to fill the questionnaires did not exceed 45 minutes. All the individuals were informed about full anonymity of the study and that its results will only be used for research purposes.

Statistical analyses. Means, standard deviations, percentages and correlation coefficients were calculated. *Z* test for two dependent correlations was used to compare strength of associations between different action control components and general self-efficacy (Steiger 1980). Hierarchical multiple regression analysis was conducted in which dependent variable was general self-efficacy. Sex and age were added in the Step 1. In the Step 2 failure-related action orientation (AOF), decision-related action orientation (AOD), and performance related action orientation (AOP) were added. Linear regression analysis' assumptions concerning normality, homoscedascity and milticollinearity of studied variables were tested. All tests were two-tailed, and the significance level was set to $\alpha = 0.05$. All statistical analyses were conducted in IBM SPSS 24.

3. Results

Table 1 presents mean scores, standard deviations and percentages for the study variables as well as their interrelationships. AOD was positively related to AOF whereas AOP correlated significantly neither with AOD nor AOF. AOP was related to general self-efficacy weaker than AOF ($Z = 2.72$, $p = .003$) and AOD ($Z = 2.87$, $p = .002$). There were no such differences comparing AOF and AOD ($Z = 0.65$, $p = .257$)

Tab. 1. Means, standard deviations, percentages and correlations between studied variables.

	M (*SD*)/%	2.	3.	4.	5.	6.
1. Sex[a]	32% males	.08	.18**	.11	-.01	.17**
2. Age	22.26 (6.85)		.12*	.18**	.03	.11
3. AOF	5.39 (2.93)			.42**	.05	.36**
4. AOD	6.15 (2.89)				.17**	.33**
5. AOP	9.02 (2.08)					.14*
6. GSES	30.38 (4.79)					

Note AOF: failure-related action orientation, AOD: decision-related action orientation, AOP: performance related action orientation.
[a] 0 = women, 1 = men; Point-biserial correlation coefficients.
*$p < .05$; **$p < .01$.

Regression analysis for general self-efficacy showed that two independent variables added in step 1 explained 3.8% of the variance ($F_{2,288} = 5.636$, $p = .004$). Three independent variables added in Step 2 explained additional 14.7% of the variance ($\Delta F_{3,285} = 17.117$, $p < .001$). The independent variables explained a total of 18.5% of the variance of general self-efficacy ($F_{5,285} = 12.903$, $p < .001$). Significant independent variables in Step 2 were failure-related action orientation (AOF) ($\beta = .25$), and decision-related action orientation (AOD) ($\beta = .19$). Although it did not reach alpha level .05 of statistical significance, AOP may also be an important predictor of general self-efficacy ($\beta = .10$, $p = .068$) (see Table 2).

Tab. 2. Results of hierarchical multiple regression analyses in which age, sex, AOF, AOD, and AOP were regressed upon general self-efficacy (GSES)

Step	Predictor	β	ΔR^2
		GSES	
1	Age	.10	.038
	Sex[a]	.16**	
2	Age	.04	.147
	Sex[a]	.10	
	AOF	.25**	
	AOD	.19**	
	AOP	.10	
	Total R^2		.185

Note AOF: failure-related action orientation, AOD: decision-related action orientation, AOP: performance related action orientation.
[a] 0 = women, 1 = men.
*$p < .05$; **$p < .01$.

4. Discussion and conclusions

All three hypotheses were confirmed. Every dimension of action control was positively related to general self-efficacy. High action control, characterized by action-orientation was related to general self-efficacy in a situation of decision making (H1), failure (H2) and pleasure (H3). Strength of the relation between action control and general self-efficacy was weaker in a situation of pleasure (AOP) than in a situation of failure (AOF) or in a situation of decision making (AOD). Furthermore, the association between AOF and AOD subscales was significant, whereas AOP demonstrated no connection to AOF and was weakly related to AOD subscale. Above mentioned relations are consistent with specific nature of AOP which differs from AOF and AOD. The regression analyses allowed to establish that three action control dimensions had independent relations with general self-efficacy. These results indicate that the individuals who believe in their success and are confident about their abilities to achieve it are more likely to do so. Such a statement applies to all three components of action control: 1) situation of decision making, 2) situation of failure, 3) situation of doing pleasant activity. These results may be useful in designing various psychological interventions concentrated on improving people's well-being. Independent relationship of action control dimensions to self-efficacy show the importance of cultivating high levels of all of action control components. Negligence in any of these areas may potentially have its negative influence on self-efficacy, and therefore, on well-being and happiness. However, more studies on causal directions in these relationships and their mechanisms are warranted. It is also important to emphasize that despite theoretical resemblance of action control and self-efficacy, this association is not as strong as one may predict. When controlling for sex and age, action control explained about 15% of variance in GSES. It emphasises the complexity of human functioning, in which high willpower is not that easily translated into confidence of one's competences.

To the Authors' knowledge, this study is the first to show direct relation between different components of action control defined by Kuhl and general self-efficacy defined by Schwarzer, and to identify unique contribution of these components to general self-efficacy. The strength of this study is in the psychometric tools with good statistical properties. The weakness of the study is the sample including only students and staff from few departments of one university in Spain, which does not allow for generalizations without significant limitations. As far as further research is concerned, the collection of more representative study sample, and experimental studies are warranted, including research in different cultural contexts. Specific factors related to Spanish culture, such as more relaxed attitude to work and leisure time (Wattley Ames 1999), may have effect on the results of this study since the investigated constructs are to a significant extent related to task completion and goal orientation.

5. Literature

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