

Can temporal anticipation of the “academic success” event influence actual performance?

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Abstract

In this study we envisage the psychological anticipation of events as a means of promoting motivation, intentionality and in return academic performance. 264 students answered a questionnaire in which academic success was invoked as an event, motivation, personal control, and intentionality toward success. Academic performance was also measured. The results highlight that the establishment of the origin congruent process which allows the structuring of the “success” event is associated with effective success via the mediation of motivation and intentionality. These results are discussed from the point of view of their practical implication.

Keywords: Thought system; academic performance; control; motivation; intentionality

Introduction

In the French context in which this study takes place, around 2.7 million students enroll for higher education studies every year. The proportion of those who fail remain relatively constant from year to year. Almost three in ten students leave education in the post-baccalaureate study year and fewer than one in two students enter the second year of study directly after the baccalaureate.

The problem of academic performance is a central question for the functioning of our societies. The objective of this study is to understand whether the way in which students anticipate success as a life event can have an impact on the determinants of performance and in return on academic performance itself.

Prediction of academic performance

Predicting academic performance is a topic well documented in the scientific literature. Firstly, we repeatedly find references to the impact of socio-economic variables, such as gender, place of origin, *etc.* (Salem, Al-Mousl, Nabil, Al-Zalabani, Al-Dhawi, & Al-Hamdan, 2013; Thiele, Singleton, Pope, & Stanistreet, 2014). There are also psychosocial determinants such as the degree of integration into the group, social support, *etc.*, academic determinants, in particular past performance, skills or the adjustment of skills to educational requirements (Jones, 2008) and determinants associated with cognitive and metacognitive skills (Ohtani & Hisasaka, 2018; McKenzie, & Schweitzer, 2001). Mental health associated with stress is also put forward as a predictor of performance (Vizoso, Arias-Gundin, & Rodriguez, 2019).

With regard to psychosocial determinants, three types of variables are mainly highlighted. The first variable accounts for the degree of personal control that students have over acting in accordance with academic expectations. For example, it has been shown that self-efficacy, which reflects the feeling of being able to perform certain behaviors (Bandura, 1986) is a predictor of academic performance (Abraham, Richardson, & Bond, 2012; Andrew, 1998). Similarly, the degree of self-control is a predictor of academic performance (Honken, Ralston, & Tretter, 2016; Kyle, White, Hyde, & Occhipinti, 2014). The

second variable is more associated with emotional experience and the motivational states induced by education. For example, in the theoretical framework of self-determination (Ryan & Deci, 2000), it has been demonstrated that intrinsic motivation (Bailey, & Philipps, 2016; Baker, 2004) predicts performance. Likewise, self-esteem (Lane, Lane, & Kyprianou, 2004), or the emotional experience associated with the teaching material (Pekrun, Lichtenfeld, Marsh & Murayama, 2017) are predictors of academic performance. Finally, in the same perspective, the importance associated with achieving a training goal turns out to be an important predictor of performance (Kyle, White, Hyde, & Occhipinti, 2014). The third variable accounts for the functioning of the deliberate decision-making sphere of cognitive functioning. For example, the intention associated with performance is a proximal predictor of academic performance (Philips, Abraham, & Bond, 2003). Likewise, expectations of the future are also likely to impact academic performance. In particular, the comparative optimism of thinking that it is more likely that we experience positive events, or on the contrary that we avoid negative events compared to other people, negatively predicted academic performance (Levine, & Alison, 2016). Specifically, it appears that the fact of envisaging performance has a positive impact on it.

Prospective thoughts and self-regulation

There are several ways of looking at the relationship with the future. We can consider the attention paid to the future in comparison with the present and / or the past, which is reflected in the future time perspective. The meta-analysis by Andre, van Vianen, Peetsma and Oort (2018) highlights a relationship between the orientation of thoughts towards the future and behavioral intentions in the fields of education, work and health. This finding is consistent with the meta-analysis by Milfont, Wilson and Diniz (2012) which highlights a relationship between future orientation and attitude or behavior in the environmental field. In addition, this relationship between future orientation and intentionality is mediated by the feeling of personal effectiveness (Park, & Jung, 2015).

Another way of looking at the future is to anticipate what could happen to us or what we could become, which is reflected in the notion of the possible self (Markus & Nurius, 1986). Specifically, considering failure or success is associated with expectations and behavioral intentions leading to academic performance (Barnett, Hernandez, & Melugin, 2018).

Emotions related to the future can also affect intentions. In particular, we can observe the anticipatory emotions which refer to the current emotions associated with the future (worry, anxiety, confidence, optimism, hope or fear) and especially the anticipated emotions which correspond to imagined emotions at the time when the events occur. Future events (satisfaction, relief, guilt, pride, joy or regret) are associated with behavioral intentions leading to the realization of a future event (Baumgartner, Pieters & Bagozzi, 2008; see also Hallford, Farrell & Lynch, 2019).

Understanding the future can also involve anticipation of an event (Oettingen & Mayer, 2002). In this case, considering the probability of the event leads to more motivation than simply imagining it according to its valence. This is due to the fact that expectations which take into account the probability of the event occurring lead to the generation of goals supporting motivation (Oettingen, 1997).

From the various works that have just been reported, it can be concluded that paying attention to the future therefore leads to self-regulation on the registers of control, motivation and deliberative activity dedicated to the construction of behavioral intentions.

The thought system associated with anticipation of future events

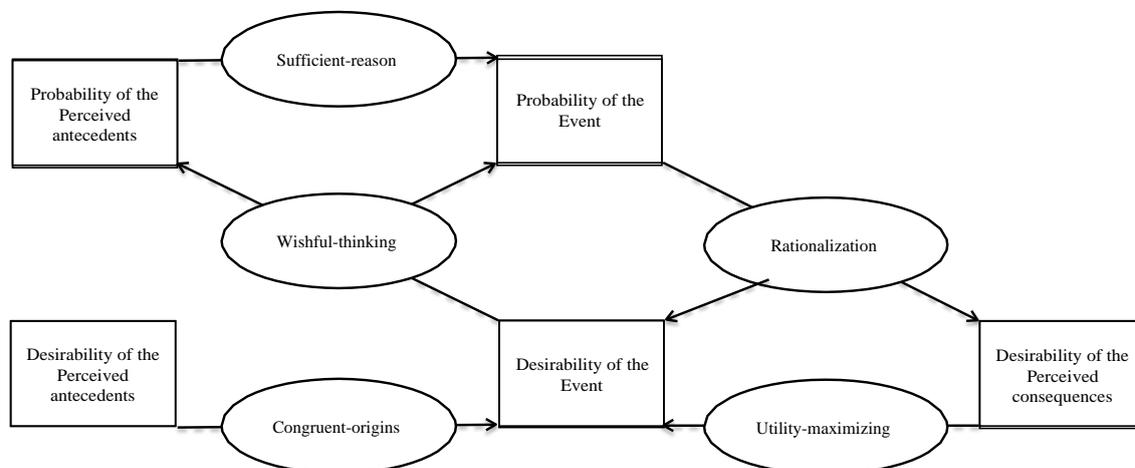
Representation of the future (McGuire & McGuire, 1991; McGuire, 1990) is organized around thoughts made up of beliefs, knowledge, assessments and images. These thoughts are expressed as propositions which are organized around two dimensions, one evaluative, i.e. desirability and the other corresponding to the probability of the event occurring. These thoughts organize themselves into a network structured like a chain of antecedents and consequences associated with the future event. This subjective “causality” chain is built around positive or negative relationships. A “cause” favors the appearance of the event which can generate consequences or other events. Or a “cause” prevents the appearance of the event which can itself prevent other events from occurring. These antecedents and consequences can be

positive or negative from the point of view of their emotional valence. This structure is organized around two psychological needs. The first is a realistic need to take into account what we know about reality. Through our experience we integrate information that concerns the future event itself or the thoughts associated with it. The second need is hedonic and pushes us to generate thoughts that are consistent with each other. This dynamic produces an internal adjustment of thoughts, here a coherence of the desirability and the probability of the elements characterizing the event, its antecedents and its consequences.

Thought systems are designed to be dynamic because change in one element of the system causes adjustments in the whole system (McGuire, 1990). Figure 1 describes the processes behind this dynamic which is internal to the thought system. The thought system is organized around five coping processes. We can thus observe that the desirability of the event is associated with the number of consequences that can be evoked (maximization of utility) as well as with antecedents (congruence at the origin & wishful thinking). We can also observe that the probability of the event occurring again is associated with the number of evocations of its history (sufficient reason) and its consequences (rationalization). In terms of the event, there would be a matching of the desirability of the event and its probability (wishful thinking & rationalization).

Objective and hypotheses

In this study we are interested in the relationship between the activity of prospective thinking, the psychosocial determinants of academic performance and the actual performance of students in higher studies. In general, prospective thoughts are most often based on a narrative structure which brings into play a series of events linked together by meaning (Baumeister, Vohs, & Oettingen, 2016). To be precise, we start from the observation that for most people the study path consists of events which are likely to build success in studies. Moving from one establishment to another, leaving the parental home, changing cities and revising for exams, etc. are events likely to impact success. On a more limited scale, we can consider that the passage from one year of study to another constitutes a significant event, because it is likely to generate specific mental images (for example places of study) associated with cognitive feelings (for example the feeling of being another person or surrounded by other people), these two dimensions being constitutive of anticipated events (D’Argembeau & Van der Linden, 2012). From the above literature, we must consider that the:



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Figure 1. Coping process associated to de dynamical thought system

Hypothesis 1: attentional focus on an anticipated event such as the pursuit of studies in a higher year is likely to promote academic performance

via:

Hypothesis 2a: the increase in the feeling of control,

Hypothesis 2b: motivation in studies or

Hypothesis 2c: the development of appropriate behavioural interventions.

Indeed, the attentional focus on the future induces an increase in control over events, motivation and intentional deliberative activities, these three elements being determinants of academic performance.

To be precise, we are interested in this study in a specific prospective way of thinking, namely the anticipation of events and their dynamics. Beyond the desirable nature of the event, i.e. academic performance, it seems necessary that an adjustment of the evaluative and expectation dimensions take place so that the thoughts associated with the pursuit of study are accompanied by the elevation of determinants of academic performance. Therefore, we expect the implementation of the thought system adjustment processes, namely the process of congruence at the origin, utility maximization, sufficient reason, rationalization and wishful thinking, to help, via the level of control, motivation and intention, enhance academic performance.

Method

Participants and procedure

264 students enrolled on the first year of a bachelor’s degree in psychology participated in this study. The entire cohort consisted of 356 students (74% participation rate). They were all attending the same university and were all first year psychology students during the same calendar year. The characteristics of the participants are presented in Table 2.

Table 1. Coping postulates and formulas

Coping Postulates	Relations
Utility Maximalization	Des (CE) ∝ (+) DMC + ULC
	Des (CE) ∝ (-) UMC + DLC
Congruent origin	Des (CE) ∝ (+) DMA + ULA
	Des (CE) ∝ (-) UMA + DLA
Wishful thinking	Des (CE) ∝ (+) DMA + UMA
	Des (CE) ∝ (-) DLA + ULA
Sufficient reason	Lik (CE) ∝ (+) DMA + UMA
	Lik (CE) ∝ (-) DLA + ULA
Rationalization	Lik (CE) ∝ (+) DMC + ULC
	Lik (CE) ∝ (-) UMC + DLC

Note: ∝ (-) means “inversely proportional” and ∝ (+) means “directly proportional”; D = Desirable; U = Not desirable; M = Favor; L = Prevent; A = History; C = Consequence. DMA (Desirable antecedent promoting the CE), DLA (Desirable antecedent preventing the CE), UMA (Non-desirable antecedent promoting the CE), ULA (Non-desirable antecedent preventing the CE), DMC (Desirable Consequence Favored by the CE), DLC (Desirable Consequence Prevented by the CE), DMC (Desirable Consequence Favored by the CE) & UMC (Undesirable Consequence Favored by the CE). Des (CE) (Desirability associated with core event). Lik (CE) (Probability associated with the core event)

Table 2. Characteristics of participants

Categories	Characteristics
Sex*	Male (20.5%); Female (79.5%)
Age	M = 18.63 years; Minimum = 17 years; Maximum = 24 years
baccalaureate	Professional (14.8%); Technological (15.5%); General (69.7%)
Scholarship	Scholar (31.4%); No Scholarship (68.6%)
Job	Yes (12.5%); No (87.5%)

Note * There was only two options from which participants could choose when asked their sex.

They were asked to take part in a study on performance at university during the first semester of the first year of the degree course as part of teaching intended to support career guidance projects. They responded to a questionnaire on a voluntary basis after being informed of the aims of the study. The questionnaire collected the evocations and the various measures of the study. The results of the study were presented and discussed during the second academic semester.

Measures

Perceptions associated with the event

Participants responded using a seven-point scale ranging from “Not at all” to “Completely”, to items assessing the desirability of the event (For me it would be a good thing to continue my undergraduate psychology studies next year), probability (It is likely that I will continue my undergraduate psychology studies next year), importance (It is important for me to continue my psychology degree studies next year), feeling of control (The fact of continuing my psychology degree studies next year depends only on me) and behavioral intention (I intend to continue my psychology degree studies next year).

Evocations and their treatment as a coping process

Participants responded to the following instruction: Write down any words, ideas or thoughts that come to mind about the following event:” I am continuing my undergraduate psychology studies next year”. After having generated between 1 and 5 evocations, they had to indicate, for each of them, whether it was a positive or negative element favoring / favored by or / preventing / prevented by the event (Author & al., 2015).

The evocations were then categorized and counted in relation to 15 categories (the 8 antecedents and consequences, the desirable / undesirable, probable / not probable elements and the three categories “method”, “personal relationship with the EC” and “residual” (McGuire & McGuire, 1991) Only the categories of antecedents and consequences were used as a basis for processing the hypotheses in the study.

Implementation of the processes corresponds to a connection at intra-individual level between a certain number of evocations and a score either of desirability or of probability, whereas the connection between these processes and academic performance corresponds to a correlation between scores for all participants. It is therefore advisable to construct a score at individual level reflecting the degree of implementation of the coping processes. As each process translates the consistency of a certain number of evocations with the attached desirability / probability score, we can account for the implementation of a process as being a consistency score between these two measures. We used the formula proposed by Asendorf (1990, 1992) to calculate coping processes¹.

Academic performance

At the end of the first and then second semester, the general averages for the semester were collected for each of the participants (N

¹ Asendorf proposed a formula to account for this type of relationship: this corresponds to the subtraction from the square of the reduced centered scores for measures 1 and 2 from which the constant score of 1 is subtracted (see Furr & Funder, 2004 for example). The formula is $C = 1 - ((Z_{evoc} - Z_{dp})^2 / 2)$ let C be the score of individual consistency between evocations (evoc) and the desirability / probability of the event (dp) considering Zevoc and Zdp as the standardized scores for evocations and then for the desirability / probability score of the event. For example, to account for the process of maximizing utility (formula: Desirability of the event ∝ (+) DMC + ULC) for a participant who mentioned a positive consequence favored by the event and a negative consequence prevented by 1 event (DMC + ULC = 1 + 1 = 2) and having responded with a score of 7 to the item on the desirability of the event (M = 6.45, SD = 1.26), we have a consistency index of $C = 1 - ((.99 - .43)^2 / 2) = .84$. In this case, the more similar the score level in terms of distribution between the two measures, the closer the consistency score is to 1.

+ 4 months; N + 9 months). On this basis, we calculated an annual average reflecting the degree of performance in the first year and, as a corollary, the update of the “study continuation in second year” event. The assessment scheme used on psychology bachelor’s degrees in French universities is based on a ranked relative to each other. The performance score corresponds to the average for 6 teaching units evaluated out of 20 points, this for the two semesters. The transition to the next year occurs when the average of the teaching units exceeds 10.

Control variables

Participants were asked to indicate their gender, age, the type of baccalaureate they had been able to take, whether psychology studies were their first choice, whether they received a scholarship and whether they were employed in addition to their studies.

Results

Descriptive analysis

The descriptive data for the study are presented in Table 3. In total, 776 evocations were produced by the participants. There are very few relationships between the context variables and the psychological variables associated with the perception of the event. Age is positively associated with being enrolled on a psychology course as a second choice ($r = .42$) and having a student job ($r = .13$). Likewise, being a woman is associated with being enrolled on a psychology course as a first choice ($r = .12$) and having a student job ($r = .13$). We also note that the fact of being enrolled on a psychology course as a first choice is associated with the intention to continue one’s studies ($r = .13$), just as being a scholarship student is associated with the feeling of being in control of the event ($r = .14$). In addition, the variables of perception of the event are positively associated: the probability of the event is associated with importance ($r = .87$), feeling of control ($r = .13$) and behavioral intention ($r = .88$), and the desirability of the event is associated with importance ($r = .90$), feeling of control ($r = .13$) and behavioral intention ($r = .89$). No statistically significant statement can be made about the relationship between the importance and the feeling of control, although the magnitude of the correlation ($r = .09$) suggests

that these two variables may be dissociated. Finally, all of the variables related to the perception of the event are associated with academic performance. Concerning the evocations, observed an almost total absence of relation with the control variables. There is only a correlation between the number of DMAUMA and age ($r = .14$, $p < .02$). These relationships reflect the fact that academic performance is not very dependent on the context variables but that it is vis-à-vis the variables structuring the anticipated representation of performance in the future.

The relationship between coping processes and academic performance

The categories of antecedents and consequences used as a basis for the calculation of the processes are not descriptively equiprobable (Table 4). We note that for certain evocation couples (UMC + DLC; UMA + DLA; DLA + ULA), the indicators of central tendency and flattening are problematic. Shapiro Wilk’s test indicates that no variable distributes normally. However, based on the Skewness and Kurtosis indicators, we kept the evocation indicators for the utility maximization and rationalization process (DMC + ULC), for the congruence process at the origin (UMA + DLA) and for the wishful thinking process and sufficient reason (DMA + UMA) to test our hypotheses.

We calculated the consistency indices for the five processes, namely the maximization of the utility (Desirability of the event \propto (+) DMC + ULC), congruence at the origin (Desirability of the event \propto (+) DMA + ULA), wishful thinking (Desirability of the event \propto (+) DMA + UMA), sufficient reason (Probability of the event \propto (+) DMA + UMA) and rationalization (Probability of the event \propto (+) DMC + ULC). Then we carried out a linear regression analysis by entering the five consistency scores as independent variables and the academic performance as dependent variables (see Table 5).

The proportion of variance explained is relatively modest but significant ($R^2 = .07$). Only the index of congruence at the origin helps to significantly explain academic performance ($\beta = .26$, $p = .011$). Under the assumption of a linear relationship between each of the five processes considered and academic performance, hypothesis 1 was only found to hold for the original congruence process (Figure 2).

Table 3. Correlation matrix

	M	SD	2	3	4	5	6	7	8	9	10	11	
1. Age	18.6	1.31	-.10	.42**	.06	-.13*	.02	-.02	.02	-.01	-.001	-.01	
2. Sex (a)	---	---		-.12*	-.04	-.13*	.05	.02	.05	.04	.04	.07	
3. Study wishes (b)	---	---			.05	-.08	-.08	-.06	-.08	-.04	-.13*	.03	
4. Scholarship (b)	---	---				-.06	.10	.09	.09	-.14*	.08	.08	
5. Job (b)	---	---					-.02	.008	-.006	.01	-.01	.06	
6. Probability	6.23	1.36						.88**	.87**	.13*	.88**	.34**	
7. Desirability	6.45	1.26							.90**	.13*	.89**	.33**	
8. Importance	6.22	1.55								.09	.88**	.33**	
9. Feeling in control	6.58	1.08									.13*	.14**	
10. Intention	6.34	1.40										.32**	
11. Academic Performance	9.29	4.10											---

Note: (a) Male = 1 and Female = 2; (b) Yes = 1 and No = 2 (The coding of variables marked with a b implies that a negative score reflects a form of agreement) ; * $p < .05$; ** $p < .01$.

Table 4. Mean and Standard deviation for evocations

		N	M	SD	Skewness	Kurtosis	Shapiro Wilk
DMC + ULC	Utility Maximalization & Rationalization	272	1.03	.98	.89	.62	.84*
UMC + DLC	Utility Maximalization & Rationalization	24	.09	.32	3.8	15.1	.29*
DMA + ULA	Congruent origin	462	1.75	1.20	.46	-.18	.91*
UMA + DLA	Congruent origin	18	.06	.29	4.7	23.3	.24*
DMA + UMA	Wishful thinking & Sufficient reason	422	1.59	1.20	.63	.10	.90*
DLA + ULA	Wishful thinking & Sufficient reason	58	.22	.52	2.67	7.80	.47*

Note: * $p < .05$; For the Skewness asymmetry coefficient the acceptable values are between -1 and +1 and for the Kurtosis coefficient the acceptable values are between -2 and + 2. When the W is significant, the distribution can be considered to differ statistically from a normal distribution.

Table 5. Prediction of academic performance (VD) from coping processes (VI)

	B	SE	β
Constant	9.06	.32	
IC Utility Maximization (a)	.09	.42	.03
IC Congruent origin (b)	.91	.36	.26**
IC Wishful thinking (c)	-.04	.12	-.02
IC Sufficient reason (d)	-.50	.31	-.14
IC Rationalization (e)	.35	.42	.10
R ²	.07		
F	3.87; p=.002		

Note : a (Desirability ∝ (+) DMC + ULC) ; b (Desirability ∝ (+) DMA + ULA) ; c (Desirability ∝ (+) DMA + UMA) ; d (Probability ∝ (+) DMA + UMA) ; e (Probability ∝ (+) DMC + ULC) ; * p<.05 ; ** p<.01

Performance according to the level of implementation of the congruent origin process

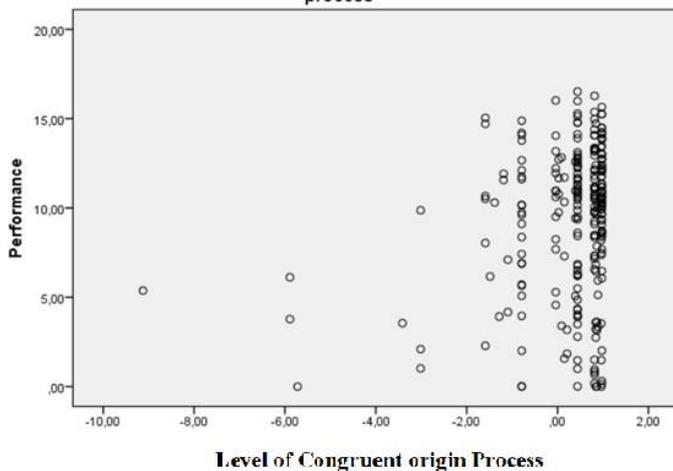


Figure 2. Performance according to the level of implementation of the congruent origin process

Mediating between processes and academic performance through feelings of control, importance and behavioral intent

We used the procedure Process (Hayes, 2013) under SPSS (model 4, 5000 bootstraps, 95% CI) to test the mediation hypothesis with coping process as independent variable, academic performance as dependent variable and control, importance, and intention as mediators.

We note that for the five coping processes, i.e. maximization of utility ($R^2 = .13, F(1, 261) = 4.31; Effect = .04; SE = .05; LLCI = -.01; ULCI = .21$), congruence at the origin ($R^2 = .05, F(1, 261) = .65; Effect = .02; SE = .05; LLCI = -.03; ULCI = .18$), wishful thinking ($R^2 = .007, F(1, 261) = .0001; Effect = -.001; SE = .02; LLCI = -.02; ULCI = .05$), sufficient reason ($R^2 = .02, F(1, 261) = 3.42; Effect = .007; SE = .04; LLCI = -.03; ULCI = .15$), and rationalization ($R^2 = .01, F(1, 261) = 2.79; Effect = .04; SE = .06; LLCI = -.02; ULCI = .26$), control does not mediate the relationship between processes and performance. Hypothesis 2a is rejected.

On the other hand, we observe that importance mediates the relationship between performance and the processes of maximizing utility ($R^2 = .32, F(1, 261) = 121.73; Effect = .50; SE = .14; LLCI = .26; ULCI = .82$), congruence at the origin ($R^2 = .22, F(1, 261) = 71.81; Effect = .47; SE = .12; LLCI = .26; ULCI = .75$), wishful thinking ($R^2 = .16, F(1, 261) = 15.74; Effect = .20; SE = .06; LLCI = .10; ULCI = .34$), sufficient reason ($R^2 = .08, F(1, 261) = 22.23; Effect = .33; SE = .15; LLCI = .10; ULCI = .69$), and rationalization ($R^2 = .23, F(1, 261) = 81.04; Effect = .13; SE = .15; LLCI = .24; ULCI = .85$). Hypothesis 2b is accepted.

Finally, we note that behavioral intention mediates the relationship between performance and the processes of maximizing utility ($R^2 = .38, F(1, 261) = 162.26; Effect = .57; SE = .17; LLCI = .29; ULCI = .95$), congruence at the origin ($R^2 = .24, F(1, 261) = 82.94; Effect = .49; SE = .14; LLCI = .25; ULCI = .79$), wishful thinking ($R^2 = .20, F(1, 261) = 64.96; Effect = .23; SE = .07; LLCI = .12; ULCI = .38$), sufficient reason ($R^2 = .10, F(1, 261) = 30.61; Effect = .38; SE = .16; LLCI = .13; ULCI = .75$), and rationalization ($R^2 = .28, F(1, 261) = 101.28; Effect = .55; SE = .16; LLCI = .28; ULCI = .92$). Hypothesis 2c is accepted.

Discussion

The main objective of this study was to undertake an investigation of the prediction of academic performance from the processes of structuring performance conceived as an anticipated event. This study provides several conclusions.

On the one hand, we found that academic performance could be predicted directly from the implementation of the congruence process. This process accounts for adjustment between the desirability of the event, here the fact of continuing studies in a higher year, with the desirable history favoring the event and with the undesirable history preventing the event. In doing so, this process is based on the premise that a desirable event can only reflect an origin which would be similar to it, namely positive causes favoring it and / or negative causes preventing it. In other words, if an event is positive it is generated by something good and prevented by something bad. In fact, this study highlights the fact that academic success can be predicted from a student’s attentional focus on positive events and / or behaviors that would favor transition to the next year and from an attentional focus on negative events and / or behaviors that could prevent it. It is therefore the fact of anticipating the future on the realistic register of a test with experience leading to success which can favor it. In this study, neither the focus on the consequences of moving on to the next year (rationalization, utility-maximizing), nor the focus on the elements accounting for the probability of the event or its antecedents (sufficient reason, wishful-thinking) seems likely to directly promote academic success.

In addition, our results show that all of the adjustment processes are likely to impact effective success several months after their implementation, but indirectly via the increase in the importance given to the event and via intentional deliberative activity. As a result, the internal adjustment of cognitions linked to further studies and the external adjustment with regard to the conditions of its occurrence and its consequences foster a motivation to experience further study, which is reflected in its importance and promotes the intentionality associated with this event. Only personal control associated with further study fails to predict academic success. These results, although important from a practical and theoretical point of view, must nevertheless take into account the methodological limits of the study.

We tested our hypotheses on sufficiently numerous evocations to account for the implementation of the processes. However, not all evocations are equiprobable from the point of view of their occurrence. At this level, it could be interesting to test hypotheses on events likely to generate enough beliefs. In this study, we relied on a relatively rudimentary event, the pursuit of study in a higher year. It would be advisable to be able to circumscribe all the events perceived as accompanying the study trajectories so as to be able to generalize our observations to other events perceived as more important in their origins and manifestations. A list of events that could be described as significant could also open up practical perspectives in terms of support.

Another obvious limitation of our study is that we used relatively simple measures to account for our intermediate variables, control, motivation and intentionality. It would be advisable in future works to use our hypotheses from more extensive and complex measurements in order to support our conclusions. In particular, there are different types of control or motivation that can be invoked to account for the processes we are studying (Ryan, & Deci, 2000). Likewise, we relied on a very broad measure of intent linked to the event that was being studied. From this point of view, we have potentially measured an intentionality more than a true intention. In this case, intentionality, refers to the fact that our thoughts and our actions are oriented towards something, a goal or an object, whereas intention is a mental state which represents the action (Malle, Moses & Baldwin, 2001). It would be desirable in future studies to identify the repertoire of behaviors associated with academic success in order to be able to study more specific behavioral intentions.

Finally, we invoked an anticipated event over a relatively small time span, namely a duration of one academic year. However, many courses are based on a span, one which is more limited from a few weeks to a few months, or much longer, over several years. However, both the impact of predictors of success (Gjesme, 1975) and the representations of anticipated events (McGuire & McGuire, 1991) are modulated by the temporal distances serving as a framework for anticipation. In this regard, Trope and Liberman (2010; Trope, Liberman & Wakslak, 2007) put forward several propositions which concern the anticipation of future events, this in relation to the notion of psychological distance. Generally, we know that the fact of envisaging a near future, which reflects a low psychological distance, will induce attention to details and images, whereas the evocation of a distant future will be based on more detailed descriptions language. Christian, Miles, Hoi Kei Fung, Best and Macrae (2013) have highlighted the fact that the more the representation concerns temporally distant future events, the more the knowledge which is generated becomes abstract and decontextualized, this in opposition to close events which are thought of as concrete, detailed and familiar. To be precise, close events are thought of on the register of means of action (how to act as one envisages) while distant events are thought on the register of general life goals (why act as one envisages). These elements are likely to modulate the effects that we observed in our study.

Conclusion

We conclude that we wish to consider practical avenues in relation to our study. Our results highlight the interest that exists in favoring the dynamics of thought systems accounting for life events associated with the academic path. Mc Guire and Mc Guire (1991) consider two ways of inducing a dynamic. The first is based on a persuasive contribution of cognition which can feed the thought system and modify its structure. The second way to induce a dynamic is Socratic questioning (Carey & Mullan, 2004). This type of interaction, Socratic questioning, aims to highlight beliefs and knowledge in order to establish consistency and potentially challenge the most problematic of them. The questions then aim to clarify the facts, to assess the consequences which are not spontaneously taken into account, and to seek alternatives so as to eliminate illogicalities. In this case, it would be to highlight the antecedents and the consequences contradicting the desirability or the perceived probability of the event so as to develop relationships within the thought system.

There are two other techniques that we think can help promote the dynamics of the thought system. The first is the implementation

of intentions (Gollwitzer, 1993; 1999) which consists in thinking of the context favorable to the updating of planning (when, where and how). According to Orbell, Hodgkins and Sheeran (1997), implementation promotes the development of action plans in the memory that can be activated by intention. The implementation therefore promotes recognition of the opportunities for action in context, the rapidity of evoking responses to requests from the environment and increases the probability of the behavior associated with the intention occurring. At the same time, implementation makes it possible to break with the effects of habit by proposing new patterns of action. It therefore appears to be a means of changing behavior and breaking with the past. In this case, it would be a question of starting from the behaviors preparatory to the success to make the thought system evolve.

Finally, Szpunar (2010) discusses two ways of simulating the future. The first consists in thinking about the outcome, the expected result through the event (outcome simulation) while the second contains the path leading to a favorable outcome (process simulation). A review of the scientific literature suggests that the second way of looking at the future is more beneficial than the first. First, thinking about obstacles and how to deal with them leads to more positive emotions and reduces the stress associated with the event more than just thinking about success. Second, thinking about the course of events leading up to a possible success leads to more planning and to organizing one's behavior. This type of attentional focus can account for the mental contrast technique. This technique consists in relating a desired future to present reality (Kappes, & Oettingen, 2014; Oettingen, & Gollwitzer, 2015; Oettingen, & Kappes, 2015). This technique has also shown its effectiveness on academic success used in a unique way (Gollwitzer, Oettingen, Kirby, Duckworth, & Mayer, 2011; Sevincer, Mehl, & Oettingen, 2017) or coupled with an implementation technique (Duckworth, Kirby, Gollwitzer, & Oettingen, 2013; Oettingen, Kappes, Guttenberg, & Gollwitzer, 2015). In fact, the effects we have observed are relatively similar to those produced by mental contrast in terms of the relationship between the process of congruence at the origin and academic success. At the same time, our study extends reflection on the effects of anticipation by highlighting the close links that exist between the thought system as a whole and self-regulation.

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