Critical Reflections

Exploring the Theory of Planned Behavior

An Interview with Icek Ajzen and with Implications for Entrepreneurship Research

By

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Creating a new business is a complex process involving many actions. A great deal of research has focused on the entrepreneurial process itself, how it moves from entrepreneurial intentions to a set of actions needed before a business is set up and running. Entrepreneurship researchers have now been engaged in this stream of research over a number of decades (e.g. Bird, 1988; Bagozzi et al., 1989; Krueger and Carsrud, 1993; Kolvereid, 1996; Krueger et al., 2000, Bird and Schjoedt, 2009; De Clercq et al., 2013; Liñán and Fayolle, 2015; Kautonen et al., 2011, 2013, 2015; Van Gelderen et al., 2017; Maalaoui et al., 2018). In doing so they have borrowed theories and concepts from scholarly works in the fields of psychology and cognitive psychology (Neisser, 1976; Anderson, 1985; Bandura, 2007; Neisser, 2014; Raynal and Rieunier, 2018) and behavioral cognitive psychology (Schwartz, 1989; Moore, 1995; Bargh and Ferguson, 2000; Fiske and Taylor, 2013; Bacq et al., 2017). Furthermore, scholars have also investigated related phenomena, such as

entrepreneurship education (Souitaris et al., 2007; Boissin et al., 2009; Solesvik et al., 2014; Fayolle and Gailly, 2015), the role of gender and entrepreneurial intentions (Wilson et al., 2007; Joensuu et al., 2013; Shinnar et al., 2018), culture and intention (Michell et al., 2000), as well as entrepreneurship among specific populations such as seniors (Tornikoski and Kautonen, 2009; Kautonen et al., 2010; Kautonen, et al., 2011; Maalaoui et al., 2013), ethnic minorities (Dana, 2007), and migrants (Jensen et al., 2014).

The research on the formation of entrepreneurial intention, i.e. factors explaining the desire/motivation of some individuals to engage in entrepreneurial activities, has been particularly interesting for entrepreneurship scholars. In this quest, one theory that has been very popular is the Theory of Planned Behavior (TPB) by Icek Ajzen (1991). Professor Ajzen was one of the first to study intentions and behavior, particularly with Fishbein, from the end of the 1960s. Since its inception, TPB has tested, advanced, and challenged in many social science fields (Armitage and Conner, 2001; Sheeran, 2002) and, as a result, generated substantial interest among researchers: The seminal 1991 article by Ajzen has generated alone more than 60 000 citations to date.

The TPB explains the formation of entrepreneurial intention via three antecedents (Figure 1), namely attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991).

Figure 1 Theory of Planned Behaviour (Ajzen, 1991).
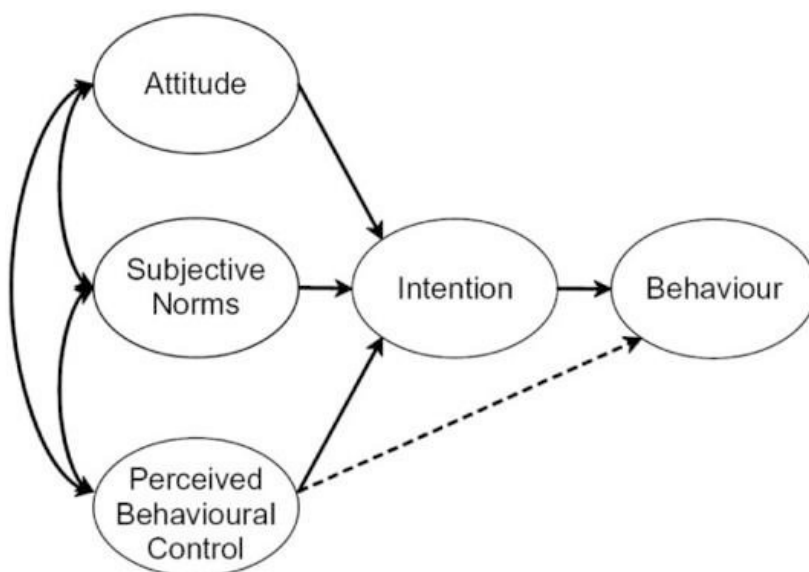
Attitude towards the behaviour refers to the degree to which an individual has a favourable or unfavourable evaluation or appraisal of the behaviour in question, e.g. starting to take steps to create a new business. The more positive an individual's perception is regarding the outcome of taking steps to create a new business, the more favorable their attitude towards this behaviour should be and, consequently, the stronger the intention to engage in such activities. *Subjective norm* refers to the perceived social pressure to perform or not to perform a specific behaviour. This is based on beliefs concerning whether important referent individuals or groups approve or disapprove of an individual starting to take steps to create a new business, and to what extent this approval or disapproval matters to the individual (Ajzen, 1991). The more the opinion of a referent group matters to the individual, the stronger should be the individual's intention to engage in such activities. Finally, *perceived behavioral control* refers to the perceived ease or difficulty of performing a given behavior. It is based on control beliefs regarding the presence or absence of requisite resources and opportunities for performing the behavior in question. The greater the perceived behavioral control over starting to take steps to create a new business, the stronger the individual's intention to engage in such activities.

Professor Icek Ajzen started his career by obtaining an M.A. in 1967 and a PhD in 1969 from the University of Illinois at Urbana-Champaign where he was directly appointed professor of psychology until 1971. Between 1971 and 2012, Ajzen worked at the University of Massachusetts at Amherst, where he directed the personality and social psychology program. In 2012, Professor Icek Ajzen was appointed Emeritus Professor for the whole of his career and his contribution to the community in all fields. He has received a number of prizes, most recently in 2018, receiving the Joyce Barnes Farmer Distinguished Guest Professorship from Miami University, Oxford Ohio. He is also a Fellow of the Society for Personality and Social Psychology and a Fellow of the Society of Experimental Social Psychology.

Ajzen has also worked for a variety of renowned international journals, and has been on the Editorial Board of Contemporary Economics since 2011. In addition, he was Associate Editor for the Journal of Personality and Social Psychology between 1994 and 1999, Consulting

Editor for the Journal of Personality and Social Psychology between 2000 and 2008, on the Editorial Board of the Journal of Applied Social Psychology between 1996 and 2011, and finally, on the Editorial Board of Basic and Applied Social Psychology between 1997 and 2010. For a more in-depth investigation of his TPB model, we had the opportunity to interview Professor Icek Ajzen. The interview is presented next before we synthesize some of the key issues brought up in the interview for intention research in entrepreneurship.

Arriving at the intention model:

Q1: Thank you for according us this interview. Could you start by giving a short description of your research in psychology and especially in cognition and behavioral cognition?

Generally speaking, my work over the years has focused on the relation between attitudes and behavior or, more colloquially, on the relation between what people say and what they actually do. In the 1960s, social psychologists came to realize to their surprise that studies examining this relation had produced little evidence for the predictive validity of social attitudes. My work, in collaboration with Martin Fishbein, resolved this problem by showing that we have to distinguish between two kinds of attitude: *general attitudes* toward such broad targets as racial, ethnic, or other social groups; toward countries; toward political candidates; toward such institutions as the church; etc., and *attitudes toward a behavior*, such as attitude toward smoking, toward taking public transportation, toward exercising, toward attending church services, and so forth. In early research on the attitude-behavior relation, investigators had usually measured general attitudes to predict relatively specific actions, resulting in low attitude-behavior correlations. We formulated the *principle of compatibility,* which states that strong attitude-behavior correlations are obtained only when our measures of attitude and behavior are compatibility in terms of their generality or specificity. Consistent with this principle, we showed that general attitudes are good predictors of broad aggregates of behavior, i.e., of behavioral criteria that consist of a composite of different behaviors relevant for the attitude. For example, attitude toward religion or the church is a good predictor of a broad pattern of church-related behaviors, aggregated over such actions as donating money to the church, attending church

services, reading books about religion, etc., but such attitudes are poor predictors of specific behaviors. The principle of compatibility stipulates that to predict a specific behavior, such as attending church services, we must consider people's attitudes toward the behavior itself, i.e., the attitude toward attending church services.

Q2: Could you summarize shortly what the Theory of Planned Behavior is about, and its key ideas?

The theory of planned behavior (TPB) is a model designed to explain and predict human social behavior. To the extent that it is successful, it can also be used as a conceptual framework for behavior change interventions. In the TPB it is assumed that most human behavior of any importance to the individual is not capricious but rather involves a measure of reasoning and planning; hence we use the terms 'reasoned action' and 'planned behavior.' According to the TPB, the immediate antecedent or determinant of a behavior is the *intention* to perform the behavior in question, moderated by volitional control. That is, people are assumed to behave in accordance with their intentions to the extent that they are capable of doing so. The intention, in turn, is determined by three factors: *attitude toward the behavior* (mentioned in response to *Q1*), which represents the individual's personal preference; *subjective norm*, which is the perceived social pressure to perform or not perform the behavior; and perceived control, or self-efficacy (Bandura, 1977), in relation to the behavior, termed *perceived behavioral control*. Although the three determinants of intention are typically treated as independent factors in a linear prediction model, theoretically, perceived behavioral control moderates the effects of attitude and subjective norm on intention. That is, positive attitudes and subjective norms lead to the formation of an intention to engage in the behavior to the extent that people believe that they are capable of performing the behavior in question. Furthermore, the relative importance of attitudes and subjective norms as determinants of intentions is expected to vary across behaviors, populations, and time periods.

Q3: To explain behavior, your intention model includes behavioral beliefs, normative beliefs and control beliefs: can you tell us more about them and how they lead to realized behavior through intentions?

Note first that, as explained in response to *Q2*, the TPB is a model for the prediction and explanation of *behavior*, not merely an intention model. In the TPB, intentions and behavior are based on a cognitive and affective foundation that consists of three sets of beliefs readily accessible in memory at the time of the behavior. One set has to do with the perceived consequences of performing the behavior, termed *behavioral beliefs,* which provide the basis for attitude toward the behavior. To the extent that performing the behavior is perceived as likely to produce mostly favorable outcomes, a positive attitude is formed; but if people believe that performing the behavior will lead to mostly negative outcomes, they will form a negative attitude toward the behavior. An expectancy-value model is used to describe the relation between behavioral beliefs and attitude toward the behavior, such that the strength of each belief is weighted by the evaluation of the outcome, and the products are summed across all readily accessible beliefs.

In a parallel fashion, subjective norms are based on normative beliefs, i.e., beliefs about the behavioral expectations of important individuals and groups in the person's life, multiplied by motivation to comply with these social referents. And perceived behavioral control is a function of control beliefs, i.e., beliefs about the presence of factors that can facilitate or interfere with performance of the behavior, multiplied by the perceived power of these factors.

Ultimately, then, according to the TPB, human behavior is guided by three kinds of considerations: beliefs about the likely consequences of the behavior (behavioral beliefs), beliefs about the normative expectations of others (normative beliefs), and beliefs about the presence of factors that may facilitate or impede performance of the behavior (control beliefs).

Q4: How did your research with Fishbein in 1969 lead you to the Theory of Planned Behavior? What were the new theoretical insights of the intention model at the time of its introduction?

As mentioned in response to *Q1*, our initial research dealt with the nature of the attitude construct and with the attitude-behavior relation. We quickly came to realize, however, that in order to predict behavior, we had to go beyond personal preferences (attitudes) to account for the influence of perceived social norms. This led to the development of the theory of reasoned action (Ajzen and Fishbein, 1980) in which we assumed that most behaviors of interest to behavioral scientists are under volitional control, thus determined by behavioral intention, and that the intention is a joint function of attitude toward the behavior and subjective norm. A few years later (Ajzen, 1985), I came to appreciate that even common everyday behaviors may not be under complete volitional control and I added the concepts of perceived and actual behavioral control to the model, resulting in what I termed the theory of planned behavior.

Q5: In 2010 you joined forces again with Fishbein and published a new book about the Reasoned Action Approach (Fishbein and Ajzen, 2010), which is an update of the Theory of Planned Behavior (Ajzen, 1985, 1991, 2012). How does the Reasoned Action Approach improve upon the Theory of Planned Behavior, and what was your motivation for this improvement? How should we call the intention model today: Theory of Planned Behavior, Theory of Reasoned Action, or something else? Which model, the TRA or TPB, should be used in entrepreneurship research?

My latest book with Martin Fishbein, published in 2010, was meant to review and discuss recent theoretical and empirical developments. Although the book is focused primarily on the theory of planned behavior, it also draws on work related to other behavior models, notably Bandura's (1989) social cognitive theory, the theory of subjective culture and interpersonal relations (Triandis, 1977), the health belief model (Rosenstock, Strecher, and Becker, 1994), the information-motivation-behavioral skills model (Fisher and Fisher, 1992), and the transtheoretical model (Prochaska and DiClemente, 1984). Because all of these models assume a measure of reasoning on the

part of individuals contemplating a behavior, we called the approach they represent the reasoned action approach. However, my own particular model should continue to be referred to as the theory of planned behavior. New developments led us to broaden the subjective norm construct to reflect not only what we think others want us to do (injunctive norm) but also what we believe they themselves are doing (descriptive norm). In addition, we distinguished between instrumental and experiential dimensions of attitude and between capacity and autonomy dimensions of perceived behavioral control.

The theory of reasoned action (TRA) is a special case of the theory of planned behavior (TPB). The difference between the two theories is that the TPB adds behavioral control as another determinant of intentions and behavior. Specifically, perceived behavioral control is assumed to moderate the effects of attitude and subjective norm on intention, and actual behavior control is assumed to moderate the effect of intention on behavior. Under conditions of perfect perceived behavioral control and perfect actual behavioral control, degree of control becomes irrelevant and the TPB reduces to the TRA. However, people rarely have or perceive that they have perfect behavioral control, and that's certainly the case in relation to entrepreneurship. It follows that the TPB is the preferred model to use in research on entrepreneurship (as indeed in any other behavioral domain).

Generic challenges to the model:

Q6: About the potential impact of the time element in the intention model… Does the nature of intentions change between these two alternatives: (i) "I intend to create a new business in 6 months"; and (ii) "I intend to create a new business in the future"? Are the former more about "real" intentions and the latter one closer to "liking" new business creation, so not really a concrete intention?

In the TPB, four elements define a behavior at varying levels of generality or specificity: the target at which the behavior is directed, the action involved, the context in which the action occurs, and the time frame, denoted by the acronym TACT. Strictly speaking,

a change in any one of these elements produces a different behavior. However, whether the intention to perform a behavior "in the future" vs. "in the next 6 months" makes an appreciable difference is an empirical question that has no a-priori answer.

Perhaps more interesting in terms of construal is a wider range of time perspective. According to construal level theory (Trope, 2012), when considering a behavior that is to occur at a distant point in time (e.g., creating a business after graduating from college), readily accessible beliefs tend to be relatively broad and abstract (e.g., beliefs about self-fulfillment or general social approval). In contrast, beliefs readily accessible when considering behavior that is to be performed in the near future (e.g., creating a business in the next 6 months) tend to be of a more practical nature (e.g., the kind of business, whether the needed funds can be obtained, whether my partner will cooperate, etc.).

Q7: Does intention also capture commitment? Some people set high, difficult goals. Does this contradict with the intention model as it posits that intentions correlate positively with feasibility?

    i. There is no assumption in the TPB that control correlates positively with intention. Instead, control (actual control or, as a proxy, perceived control) *moderates* the effect of intention on behavior.

       Note also that perceived behavior control is not necessarily expected to correlate positively with behavior. In the case of a behavior that most people are motivated to perform (e.g., eating a healthy diet), we would expect a positive correlation between perceived behavioral control such that successful performance of the behavior increases with degree of control. However, when dealing with an objectionable behavior (e.g., using illicit drugs), performance of the behavior is expected to decline with control, resulting in a negative correlation between control and behavior.

ii. In the TPB, a goal can be the criterion to be predicted but it can also be considered a background factor whose effects on behavior, if any, are mediated by behavioral, normative, and/or control beliefs.

iii. Commitment to the performance of a behavior becomes relevant only in those cases where people have already decided to engage in the behavior under consideration, i.e., when they have formed a positive intention. An expression of commitment, especially if made in public, will tend to increase the likelihood that the intention is carried out (see Ajzen, Czasch, and Flood, 2009).

Q8: Intent is a dynamic process. Should the model be reflective (versus formative)? Neuroscience would say that it isn't surprising that intent is the prior, and presumably iterative. In fact, there's evidence that we often anchor on intent and if key beliefs contradict, we're likely to change the beliefs (voting, product choice, etc.). Does this matter to the intention model, theoretically and/or empirically?

This question addresses several separate issues. I respond to each in turn.

i. The TPB recognizes the dynamic character of intentions and behavior by stipulating that the behavioral, normative, and control beliefs that determine a given intention are those beliefs that are readily accessible in the moment. Environmental factors as well as internal cues can determine which beliefs are activated (i.e., come readily to mind) and thus influence the intention. For example, the beliefs that come to mind in the context of completing a questionnaire can differ from the beliefs that are readily accessible in the actual behavioral context. This can produce a gap between measured intention and actual behavior (Ajzen and Sexton, 1999).

ii. Measures of the TPB constructs contain both formative and reflective indicators. Attitude, subjective norm, perceived behavioral control, and behavior are assessed directly by means of reflective indicators whereas measures of behavioral, normative, and control beliefs constitute formative indicators of attitude, subjective norm, and perceived control, respectively.

iii. In the TPB attitudes, subjective norms, and perceptions of control have a causal effect on intentions and, via intentions, on behavior. This assumption is validated by behavior change interventions, which have shown that changes in the theory's predictors also produce changes in intentions and behavior (see Sheeran et al., 2016; Steinmetz, Knappstein, Ajzen, Schmidt, and Kabst, 2016). We do, however, recognize the existence of other processes that implicate the reverse causal effects: Once a decision has been made (for whatever reason), this decision can be rationalized by bringing beliefs in line with the decision (in an attempt to reduce cognitive dissonance). However, processes of this kind are not part of the TPB.

Q9: Some social behavior involves collective actions, so what about collective intent? The cognitive processing involved goes up exponentially -> What does that mean for the intention model?

The theory of planned behavior models the behavior of individuals. It has nothing to say directly about collective actions. I presume it would be possible to use the theory to account for decisions made by individual actors who are part of a collective and use insights obtained in this fashion to explain the collective decision. However, there is nothing in the TPB to suggest how this can be done.

Q10: In Anscombe's philosophical treatment, an intention is a person's answer to the question, "What am I doing"? But is there a preceding internal question related to "Why am I doing" that in some way generates the "What"? And if so, how can they be distinguished?

In the theory of planned behavior, what a person does is called 'action,' a manifest response in a given situation. The reasons for the action can be found in the behavioral, normative, and control beliefs. Thus, for example, a man who goes on a low-fat diet (the 'what') may do so because he expects that it will help him to lose weight, lower blood pressure, and reduce serum cholesterol levels; and perhaps also to be in compliance with the expectations of his wife and doctor (the 'why'). In fact, one or

more of these considerations may have been the initial impetus for contemplating the behavior in the first place (the individual's goals).

From intention to action:

Q11: How do you increase intentionality to the point that action is taken?

I assume that this question refers to a situation in which people have formed an intention to engage in a particular behavior but fail to act on their intentions. The reasons for inconsistencies of this kind are many and so, accordingly, are the means that may be effective in closing the gap.

i. As stipulated in the TPB, the ability to act on an intention depends on the degree of control over performance of the behavior. Behavioral control can be increased by providing people with the required resources and by removing barriers.

ii. New information may become available after intentions have been assessed, leading people to change their minds about performing the behavior. As a result, they act in accordance with their newly formed intentions, not with the intentions originally assessed. For example, after forming the intention to perform breast self-examinations, a woman may read on the internet that doing so produces many false positives and unnecessary anxieties, and as a result she no longer intends to perform this behavior. To prevent this, it is necessary to counteract the effects of novel information.

An interesting case of new information occurs when beliefs are unrealistic. As indicated in my response to *Q8*, the behavioral, normative, and/or control beliefs activated and thus readily accessible in memory when forming an intention may differ from the beliefs activated in the actual behavioral context. For example, when thinking about the possibility of starting a new business, mainly positive beliefs may come to mind, leading to the formation of a favorable intention. However, when confronted with formulating and executing a concrete business

plan, negative beliefs may come to the fore, leading people to abandon their intention to start a business. This situation requires continuous follow-up and support to show people how they can overcome anticipated difficulties.

iii. Procrastination or forgetting can lead to a failure to carry out a time-bound intention. Timely reminders can help to alleviate this problem. Also effective is asking people to form an implementation intention, i.e., asking them to indicate where, when, and how they will carry out their intentions. This tends to activate the intention under the specified conditions.

Q12: What is the difference between intention and implementation intention? Is implementation intention a necessary step towards realized behavior, and why?

We distinguish between goal intention, part of the TPB, and implementation intention, which has to do with concrete plans as to how the goal intention is to be carried out. After forming the (goal) intention to start a new business, for example, people may consider possible ways of acting on this intention, i.e., of achieving their goal. Making a concrete plan of this kind increases the likelihood that the process of starting a new business will be initiated. As mentioned in response to *Q11*, instead of relying on people to form an implementation intention by themselves, we can ask them to do so as a way to encourage them to act on their intentions. Parenthetically, people may also consider issues related to implementation *before* they have formed a goal intention. Thus, prior to deciding whether to start a new business, people may well contemplate when and how they could accomplish such a goal. This is a hypothetical process where people ask themselves what they would have to do *if they decided* to start a new business. The result of such contemplation may well be the formation of a negative goal intention.

Q13: Another dynamism issue: Bratman suggests that intent toward some end entails other intents, both parallel and sequential. For example, I intend to go to IPAG cognitive seminar in September, but there are planning and subplans and often fast-changing plans that we may not be remotely mindful of. In line with the philosophers,

intent is choice + commitment. So, how might we best deal with dueling intents (Monsen and Urbig)?

This question addresses two different issues.

i. Even relatively simple behaviors usually involve more than one action. For example, to enact the behavior 'going to the movies' on a given night involves finding out which movies are playing, deciding on the movie to see, driving to the movie theater, buying a ticket, and being seated while watching the movie. Usually, this sequence of actions can be carried out without much difficulty once the intention has been formed. Sometimes, however, the sequence is interrupted by unforeseen circumstances. Thus, if my car breaks down on the way to the movie theater or the show is sold out, I will be unable to carry out my intention to go to the movies. In the TPB, this is captured by the control construct, such that the intention will be carried out only to the extent that the person has sufficient control.

ii. A different problem arises when behavior designed to achieve one goal interferes with the pursuit of a competing goal. In the TPB we assume that people form intentions with respect to each of the behavioral options (based on attitudes, subjective norms, and perceptions of control with respect to each), and that the strongest (i.e., most favorable) intention will be carried out.

Q14: Between choice and action, there is often either a barrier (perceived or real) that requires either a facilitator appearing, or an impediment (perceived or real) removed (what we call in Entrepreneurship as Shapero's precipitating factor). How does the intention model recognize these two possibilities?

In the TPB, behavioral control, perceived as well as actual, reflects facilitating as well as impeding factors. Assuming positive attitudes and subjective norms, when perceived and actual control are both high, people will form a favorable intention and they will also be able to carry it out. When either perceived or actual behavioral control is low,

we have to create suitable facilitating conditions (and make sure that people are aware of them) and remove existing barriers, whether real or perceived.

The model in entrepreneurship field:

Q15: Starting a new venture comprises a variety of behaviors, such as finding a business idea, analyzing and validating an idea, identifying potential co-founders, acquiring required resources and means, preparing a business plan, interacting with various stakeholders, prototyping and testing the new offer (product or service), promotion and marketing, etc. before a new business is created. Is the intention model applicable to starting a new venture given that it comprises a variety of behaviors?

Yes, the TPB can be and has been applied to entrepreneurship. In my response to *Q13*, I mentioned that even relatively simple behaviors, like 'going to see a movie,' involve a series of actions. The same is true of entrepreneurship behavior. It is up to the investigators or practitioners to decide on the level at which they want to address this behavior. It is possible to assess the TPB constructs at a general level, for instance in relation to 'starting a new business," or 'opening a restaurant in the next 6 months.' Alternatively, we can focus on one or two particular aspects of entrepreneurship behavior, such as 'preparing a business plan' or 'acquiring needed resources.' More specific behaviors of this kind would be relevant foci of research with respect to individuals who have already formed the general intention to start a new business. Thus, in a serious of studies, beginning with the general intention to start a new business via successive steps in the process, we can gain an in-depth understanding of entrepreneurship behavior.

Q16: Related to the previous question, in complex and multifaceted actions like starting up a new business, intention can be considered as more a "goal" than a "plan". What is needed to transform such goal into action?

In the TPB, the distinction between performing a behavior and attaining a certain goal is related to degree of control. As noted, virtually every behavior involves a series of steps

and its execution can be thwarted at any stage by lack of qualifications, failure to obtain needed cooperation from other individuals, lack of finances, or other impeding factors. Successful performance of the behavior thus depends on the individual's degree of behavioral control. Similarly, goal attainment depends on a series of prior actions leading up to the goal, and here too, various control factors can prevent success. The difference lies in the fact that in the case of a behavior, the ultimate step in the sequence is itself a manifest action, whereas in the case of a goal, the ultimate step is an outcome that is only partly a function of the person's behavior. For example, 'studying' is a behavior that may be implemented by borrowing a book from the library, reading the book, and memorizing materials encountered. The behavior has been performed successfully at the end of the third step. The goal of attaining an 'A' in the course, however, depends not only on studying behavior but also on the kinds of questions that appear on exams and the instructor's grading scheme, factors that are not under the student's control. As a general rule, therefore, individuals tend to have greater volitional control over performance of behaviors than over attainment of goals.

Q17: Building on the previous point, could "intent" be more like "interest" (e.g., the Lent model), whereas the truly intending are so called nascent entrepreneurs, i.e. individuals in the process of creating a new business? That is, since the creation of a new business requires a variety of behaviors, should we consider entrepreneurial intention to be related to "I intend to take steps towards starting a new business", rather than "I intend to create a new business"?

When we ask people whether they intend to "take steps toward starting a new business" we focus their attention on the prerequisites for this behavior, but when we ask them whether they intend to "start a new business" we focus their attention on the final outcome. In a sense then, we are dealing with two different behaviors. The behavioral, normative, and control beliefs that are activated can differ in response to these alternative formulations. It is up to investigators to decide which of the two alternatives is to be the focus of their research.

Way forward:

Q18: It seems that you have produced a lot about the intention model, and especially in the domain of marketing and health. What have you learnt so far? What are other potential domains of behavior in which your theory bears relevance? What about entrepreneurship and small businesses: have you made efforts to apply your intention model there personally (and why/why not)?

The theory of planned behavior has been used to study literally dozens of different behaviors, from family planning to technology adoption, from dieting and exercising to recycling and energy conservation, from leisure activities to blood donation, and, yes, it has also been applied to entrepreneurship behavior. Well over 2000 empirical studies have been published that have applied the TPB in these varied behavioral domains. The model has been used not only to explain and predict behavior but also to guide behavior change interventions. However, I am not a practitioner and although I have been involved in various applied research efforts, my work has been and continues to be primarily of a theoretical nature. It is beyond the scope of this interview to enumerate everything I have learned over the years (see Fishbein and Ajzen, 2010, for an overview of what we have learned). Generally speaking, I conclude that over a period of more than 30 years the TPB has withstood well the test of time and it continues to provide a useful platform for understanding, predicting, and changing human behavior.

Concluding thoughts

Is entrepreneurship about performing certain behaviors or attaining certain goals? In entrepreneurship we generally focus on intentions towards achieving important entrepreneurial goals (e.g. intention to create a new business, intention to grow) and sometimes about specific actions and behaviors (e.g. intention to start taking steps towards starting a new business, intention to prepare a business plan). As Ajzen points out (Q17) these two are different behaviors. Moreover, and as Ajzen illustrates (Q16), investigating the achievement of specific goals not only depends on the actions an entrepreneur takes, but also on factors outside the entrepreneur's control. Should we focus our scholarly efforts on

specific entrepreneurial behavior and actions because these specific behaviors are more under the control of enterprising individuals?

Furthermore, should we focus our efforts to understand what makes some individuals take actions towards entrepreneurship using the intention model, and then theorize any factor related to goals an individual might have as a distal antecedent of an intention model? Indeed, echoing Ajzen's arguments (Q7), creating a new business can be considered a general goal an individual has. This general goal of creating a new business can have effects on behavioral, control, and normative beliefs about a specific entrepreneurial behavior. In other words, a generic entrepreneurship goal could be modeled as an antecedent, whose effect on specific entrepreneurial behavior, if any, is mediated by the three antecedents of intention. As an example, the intention to write a business plan is formed when behavioral, normative and/or control beliefs about writing a business plan are positive. These three beliefs are, in turn, impacted by a more generic goal to create a new business.

Is intention-behavior gap partly the product of our methods of inquiry? In our studies the intention-behavior gap may be observed because entrepreneurial intentions were activated by general positive beliefs with regards to entrepreneurship at the time of surveying the respondents, as Ajzen points out (Q8). Whereas, at the time of observing realized behavior, more concrete and negative beliefs are present that may make people abandon their plan to start a new business. As such, it is important for scholars to acknowledge that there can be a gap between measured intention and actual behavior due to the design of our studies. The challenge we face, then, is to "force" respondents of our questionnaires to think about the specific context of starting a new business, rather than making them to think about entrepreneurship in general.

How would we make the measurement of original intentions as concrete as possible so that respondents would not rely on generic beliefs about entrepreneurship but asses the behavior using much more concrete and practical beliefs? One potential answer is to ask respondents to elaborate implementation intentions at the same time as they respond about the intentions to create new businesses. As Ajzen proposes (Q11), asking about implementation intentions could activate the intention under specified conditions.

Ajzen bring outs issues that contribute to the Intention-behavior gap (Q11), such as the degree of control over performance of the behavior. If individuals start to take steps towards the creation of a new business, they may come to realize that their actual control over the performance of business creation is lower than what they perceived earlier. As such, experiencing control (e.g. Skinner, 1996) can contribute to the gap between entrepreneurial intention and behavior. As a consequence for researchers, we should be able to design studies where experiencing control can be taken into account.

In real life, what can potentially decrease the intention-behavior gap is the absence of a presence of implementation intention. Implement intention, i.e. a concrete plan as to how an intention to start a new business is to be carried out, increases the likelihood that the process of starting a new business will be initiated (Q12). Thus, by asking aspiring entrepreneurs where, when, and how they will carry out their entrepreneurial intention, will help them act on their intention (Q11).

Why time perspective matters in intention studies. When deciding on the type of intentions one wants to study, it is important to keep in mind the time perspective. Intention to start a business "in a few years" versus "in two months" involves two different behaviors because the readily accessible beliefs related to each behavior are different, as Ajzen points out (Q6). In the former case (starting in a few years) the accessible beliefs are relatively broad and abstract, whereas in the latter case (starting in two months) more practical in nature. As a consequence, comparing two intention studies in entrepreneurship where scholars use different operationalisations of entrepreneurial intentions (e.g. create a new business one day versus in two months) does not make much sense. Entrepreneurship scholars should perhaps be stricter when defining what is the time perspective in our intention studies, or at minimum be explicit about the time perspective in their studies.

How to elicit behavior change interventions in education. The intention model of Ajzen is not only designed to explain and predict human social behavior. It is also used as conceptual framework for behavior change interventions (Q2). The latter has been less evident in published articles in entrepreneurship. At the same time, behavior change interventions are

very relevant for entrepreneurship education where we try to foster student entrepreneurship. As Ajzen points out (Q2), of the three direct antecedents of intention, perceived behavioral control (PBC) moderates the effects of attitudes and subjective norm on intention. As such, educational initiatives to foster entrepreneurship could focus especially on improving participants' perceived behavioral control over the act of creating a new business, which in turn would then raise the positive effects of attitudes and subjective norm on entrepreneurial intentions. In addition, Ajzen brings up several actions we as educators can take to initiate behavioral changes, such as focus on specific behaviors rather than generic goals (Q1), encourage participants to make (public) expressions of commitments (Q7), increase behavioral control of participants over performance of entrepreneurial behavior (Q11, Q14), be vigilant in regards of information participants are given and hear from the media (Q11), provide continuous follow-up and support for participants to overcome difficulties (Q11), and ask participants to work on implementation intentions (Q11) even before they have formed any intentions towards entrepreneurship (Q12).

Which one to use: Theory of Planned Behavior or Theory of Reasoned Action? Recent theoretical and empirical developments in different behavior models have lead Ajzen to broaden the three key constructs of the original TPB model, as specified with his book with Fishbein (i.e. Fishbein and Ajzen, 2010). Ajzen points out (Q5), however, that the TPB is preferable over TRA in entrepreneurship research because TPB includes the notion of control. Only if people have or perceive having perfect behavioral control, then the notion of control becomes irrelevant and TPB reduces to the TRA.

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