CONSUMING TRADITIONAL FOOD PRODUCTS OF ONE'S PROVINCE: A TEST OF PLANNED BEHAVIOR THEORY

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In this paper we tested the predictive power of the Theory of Planned Behavior (TPB), when the target behavior is consuming traditional foods of one's province (Trentino, Italy). Meat-based products were considered, and students attending senior high schools were surveyed. TPB and TPB + past behavior were tested, using structural equation models. We found that consumption intentions were predicted by attitude, subjective norms and past behavior; behavior was in turn predicted by intentions, perceived control, and past behavior. Both TPB and TPB + past behavior explained a large amount of variance in intentions, and a moderate amount in behavior. We also examined the relationship between TPB constructs and behavioral beliefs and identification (with the province). Findings demonstrate the predictive power of TPB; they also suggest strategies that can be followed to orient consumption in directions beneficial to health.

Key words: Predictive power of TPB; Predictive power of TPB + past behavior; TPB and consumption of local foods; TPB and behavioral beliefs; TPB and self-identity.

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INTRODUCTION

In this paper we test a psychosocial model which explains choices concerning the purchase and consumption of foods typical of one's own province. The local foods considered were meat-based products typical of Trentino: a province located in Northern Italy. Our aim was to understand which variables have major effects on the intention to consume these products. To re-

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veal the antecedents of intentions, we refer to the Theory of Planned Behavior (TPB; Ajzen, 1988, 1991), which is an extension of the pioneering Theory of Reasoned Action (TRA; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Both TPB and TRA are deliberative processing models which assume that people's attitudes — a key antecedent of behavioral intentions — are formed after careful consideration of the relevant information (Conner & Sparks, 2005).

According to Fishbein and Ajzen (2010), the reasoned action approach provides a unifying framework to account for any social behavior (for food choice behavior, see Conner & Armitage, 2002). Both TRA and TPB make reference to the expectancy-value theory (see the original work by Peak, 1955), according to which individuals are motivated to maximize desirable and minimize undesirable consequences of their actions. On choosing between two objects, individuals will select the one associated with more desirable outcomes, that is, the object valued more positively. This overall evaluation, namely attitude, is a function of the perceived likelihood that the object presents a set of attributes, or the behavior leads to a set of consequences (behavioral beliefs), with each attribute or consequence being weighted by the respective evaluation.

Towler and Shepherd (1992) showed the utility of the expectancy-value approach for explaining the attitude toward consuming a specific food or following a specific diet. In their research (participants were adults), the behavioral beliefs affecting attitude toward eating meat, meat products, dairy products, and fried foods were: "taste" and "health." "Fat" only predicted the attitude toward meat products and fried foods, and "vitamin" the attitude toward dairy products. In another study, Armitage and Conner (1999) found that beliefs such as "... makes me feel good about myself," "...reduces my enjoyment of food," "... helps to maintain a lower weight" were correlated with the attitude toward following a low-fat diet, whereas beliefs regarding health consequences (e.g., "... reduces my risk of coronary heart disease") were not associated with this attitude (participants were university students). As reported by Conner and Sparks (2005), the behavioral beliefs most strongly associated with attitude toward healthy eating were: following a healthier diet "…would make me physically fitter," "…would make me healthier," but it "…would be expensive."

Fishbein and Ajzen (1975) have suggested that the relationship between attitude (A) and behavior (B) is mediated by behavioral intention (BI), namely the motivation to perform the behavior: the stronger the intention, the higher the probability of behavior activation. In a meta-analysis, Conner (2000) found that the indirect effect of attitude is stronger than the direct effect. In addition to attitude, TRA includes a second predictor of intentions, which captures the influence of social milieu, namely subjective norm (SN; see Fishbein & Ajzen, 2010). SN is the perception that important others prescribe, desire, or expect the performance or non performance of the behavior. Several reviews have shown that the Theory of Reasoned Action is able to predict many kinds of behavior (Sheppard, Hartwick, & Warshaw, 1988; van den Putte, 1991; for food choices, see Anderson & Shepherd, 1989; Saunders & Rahilly, 1990).

Ajzen (1988) stated that the TRA was developed to deal with volitional behaviors, which only require the intention of their performance. Behaviors calling for skills, resources or opportunities are not explained by the TRA. To overcome this limitation, Ajzen (1988, 1991) proposed the Theory of Planned Behavior which addresses the problem of incomplete volitional control over behavior. This theory broadens the TRA by incorporating the concept of perceived behavioral control (PBC), which is included in the model as an additional predictor of intentions and behavior. Through the inclusion of PBC, the TPB can explain complex behaviors, whose per-

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formance requires skills and resources. According to Ajzen, perceived behavioral control reflects the real control individuals have on behavior; it, therefore, affects intentions and behavior. In this theory, the impact of PBC on behavior is both direct and mediated by intentions.

Several reviews (Ajzen, 1991; Armitage & Conner, 2001; Godin & Kok, 1996; van den Putte, 1991) have demonstrated the effectiveness of TPB in explaining many kinds of behavior. Overall, it has been shown that A, SN and PBC explain between 40% and 50% of the variance in intentions, with PBC being the most powerful predictor and SN the least powerful. The percentage of variance explained in behavior ranges between 21% and 36%, with BI generally accounting for more variance than PBC. Recently, Conner and Sparks (2005) performed a meta-analysis of the relationships between constructs in TPB, finding that BI and PBC explained 25.6% of variance in behavior (BI was more influential than PBC), and A, SN and PBC explained 33.7% of the variance in intentions (A was the strongest predictor).

Compared with the original formulation, the Theory of Planned Behavior has been extended in two directions: a) the main constructs have been decomposed in multiple dimensions (Conner & Sparks, 2005); b) new predictors, as past behavior and self-identity, have been added. As regards the first point, research on TRA and TPB has distinguished two attitude components: cognitive (or instrumental) and affective (or experiential) (see Ajzen & Driver, 1991; Canova & Manganelli Rattazzi, 2003, 2007; Lowe, Eves, & Carroll, 2002; Wilson, Rodgers, Blanchard, & Gessell, 2003; see also Fishbein & Ajzen, 2010). Ajzen (2002), however, has suggested that to maintain parsimony in the number of constructs, it is useful to distinguish between a higher order construct, namely attitude, and two lower-order components (instrumental and affective). The bi-dimensionality of attitude has been supported by numerous studies (e.g., Bagozzi, Lee, & Van Loo, 2001; Chatzisarantis & Hagger, 2005).

More reflection is needed on normative influences (SN), since several studies have shown that subjective norm is the weakest predictor of intention (Armitage & Conner, 2001; Godin & Kok, 1996; Sheppard et al., 1988; van den Putte, 1991). One explanation of this weak predictive power concerns the conceptualization of SN (see Cialdini, Kallgren, & Reno, 1991). Cialdini, Reno, and Kallgren (1990) called the perception of approval by others, "injunctive norm," and the perception that others perform or do not perform the behavior, "descriptive norm." In Rivis and Sheeran's meta-analysis (2003), descriptive norm was found to explain an additional 5% of variance in intentions, after controlling for attitude, injunctive norm and perceived control. However, the two forms of influence can be thought as indicators of the same construct, namely social norms (see also Ajzen & Fishbein, 2005).

The TPB has been applied in particular to predict food consumption intentions (Conner & Armitage, 2006). Cox, Anderson, Lean, and Mela (1998), for instance, showed that the TPB explained between 33% and 47% of the variance in intentions to increase the consumption of fruit and vegetables, with attitude being the most powerful predictor. Nguyen, Otis, and Potvin (1996) showed that the theory explained 51% of the variance in intentions to eat fatty foods: the three antecedents (A, SN, PBC) all being reliable predictors of intentions. The portion of variance explained by TPB is lower for behavior; for instance, it accounted for 32% of the variance in actual consumption of five portions of fruit/vegetables a day (Povey, Conner, Sparks, James, & Shepherd, 2000), and 39% of the variance when the behavior of following a low-fat diet was analyzed (Armitage & Conner, 1999). A review by McEachan, Conner, Taylor, and Lawton (2011), focused on dietary and healthy eating, highlighted that the TPB explains 50% of the variance in

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intentions (attitude was the best predictor), and 21% of variance in behavior (intentions were the best predictor). According to Conner and Armitage (2002), this theory has the potential to account for more variance when specific, rather than general, eating behaviors are considered.

Several authors have suggested to add new constructs to the TPB in order to improve the explanation of intentions and behavior. Ajzen (1991) analyzed the role of past behavior, proposing to use it as a test of sufficiency for TPB. It was found, moreover, that past behavior can have a unique effect on intentions (Conner & Armitage, 1998) and actual behavior (Ouellette & Wood, 1998). Self-identity has also been included in TPB. A series of studies has confirmed the independent predictive power of this variable (see Armitage & Conner, 1999; Charng, Piliavin, & Callero, 1988; Conner & McMillan, 1999; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992). In a recent meta-analysis, Rise, Sheeran, and Hukkelberg (2010) found that self-identity can explain reliable additional variance in intentions, beyond that accounted for by TPB and past behavior. Identities often analyzed, when the TPB is tested in the health domain, are: being "health-conscious" or "a green consumer."

OVERVIEW

The present study reports a longitudinal investigation, in which the TPB is tested by considering as the target behavior the consumption of typical foods of one's own province (Trentino). The local foods chosen are all meat-based: Trentino luganega, carne salada, ciuìga, and mortandela.[1] Since consumption of these foods is important for the province's economy, it is useful to know which variables — attitudinal and social — may affect their choice. Knowing the antecedents enables us to build policies aimed to both increase consumption and steer it in directions that are beneficial to health.

In addition to testing the predictive power of TPB and TPB + past behavior (see, e.g., Conner & Armitage, 1998; Mari, Capozza, Falvo, & Hichy, 2007; Mari, Tiozzo, Capozza, & Ravarotto, in press), we will also test the effects of identification with the province and those of behavioral beliefs. We expect positive beliefs to be positively related and negative beliefs to be negatively related to intentions, behavior and their antecedents. Identification should positively affect all the TPB constructs. In this study, identification and beliefs are therefore treated as background variables, affecting all the basic constructs of this theory.

This study's target population are adolescents attending senior high school. We chose this population, because youngsters of this age start to be independent in their food decisions. Communication campaigns, based on our findings, may aim to both maintain local food traditions and drive consumption in directions beneficial to health.

METHOD

Participants and Procedure

Participants were students attending senior high school in the Trentino province; they were surveyed at school during lessons. The first phase of the study involved 310 students. Of these, 294 participants also completed the second questionnaire. We excluded from the sample

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students who did not live in the Trentino province (almost all participants were born in the province); we also excluded respondents who were vegetarian, or could not eat the four typical products for health reasons. The final sample included 271 students: 216 males, 52 females, and three did not indicate their gender. Mean age was 17.57 ($SD = 1.22$). The second phase of the study was performed 28 days after the first phase.

Measures

In Phase 1 (Time 1), the following measures were used.

Identification with one's own province. Four items, adapted from Capozza, Brown, Aharpour, and Falvo (2006), were applied, such as: "I positively evaluate being an inhabitant of Trentino." The response scale ranged from 1 (*absolutely false*) to 7 (*absolutely true*), with 4 (*neither false/nor true*) as mid-point. Reliability was satisfactory (alpha = .78).

Beliefs about the four traditional food products. To reveal the positive and negative beliefs associated with the traditional food products, we conducted a pilot study. For each of the four products, respondents (senior high school students and adults, living in Trentino) were requested to indicate the benefits, disadvantages, and health risks associated with its consumption; they had to write at least five benefits, five disadvantages, and five risks. Between 27 and 37 participants were surveyed for each product, with each participant evaluating only one product. We selected the most often mentioned advantages, disadvantages and risks: those cited by at least 10% of respondents, and associated with at least two of the four products. Thirteen beliefs were obtained; in the questionnaire they were presented in association with a likely/unlikely scale. The introductory sentence was: "How likely is each of the following consequences, if people eat *luganega*, *mortandela*, *carne salada*, *ciuìga*?" The response scale ranged from 1 (*very unlikely*) to 7 (*very likely*), with 4 as the mid-point (*neither unlikely/nor likely*). Examples of items are: "If people eat *luganega*, *mortandela*, *carne salada*, *ciuìga,* they are likely/unlikely to eat products that provide energy," … "are good and tasty," … "cause hypertension," … "are difficult to digest," … "are fatty," … "are expensive."

Measures of TPB constructs were adapted from the TPB literature (e.g., Ajzen 2002; Conner & Sparks, 2005). The target behavior was the personal eating of the four products over the following four weeks.

Attitude. Attitude was measured using eight 7-point semantic differential items: four were used to assess the instrumental component of attitude (unprofitable-profitable, stupid-intelligent, useless-useful, ineffective-effective), and four the affective component (unpleasant-pleasant, distasteful-tasteful, joyless-joyful, boring-exciting). Scales were anchored by 1 (negative pole) and 7 (positive pole), with 4 as mid-point (*neither/nor*). The introductory sentence was: "Imagine consuming foods typical of this province, such as *luganega*, *mortandela*, *carne salada*, and *ciuìga*, over the next four weeks. How do you perceive this behavior?" In the descriptive analyses, items were averaged to form a composite score of instrumental and affective attitude (alpha = .81 and .74, respectively).

Subjective norms. Two items were used. The first assessed the injunctive norm: "Most people who are important to me think *I should not* (1) / *I should* (7) consume food products typical of this province, such as [ ], over the next four weeks."[2] The second referred to the descriptive norm: "Most people who are important to me *do not consume* (1) / *consume* (7) food products

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typical of this province, such as [ ].” In the introductory analyses, the two items were averaged to obtain a reliable subjective norm score ($r = .48$, $p < .001$).

Perceived behavioral control. PBC was measured with one item: “It depends on me whether or not I consume food products typical of this province, such as [ ], over the next four weeks.” The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with 4 as mid-point (*neither disagree/nor agree*).

Past behavior. Participants were asked: “How often, in the past, have you eaten foods typical of this province, such as [ ]?” Response scale ranged from 1 (*never*) to 7 (*very often*).

Intentions. Two items were used to measure this variable. The first asked: “How likely are you to consume food products typical of this province, such as [ ], over the next four weeks?” Response scale ranged from 1 (*very unlikely*) to 7 (*very likely*), with 4 indicating *neither unlikely /nor likely*. The second item was: “I intend to consume food products typical of this province, such as [ ], over the next four weeks.” The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*), with 4 as mid-point (*neither disagree/nor agree*). The two items were averaged to form a reliable composite score ($r = .84$, $p < .001$).

In the second phase of the study (Time 2), participants were asked to report their actual behavior.

Self-reported actual behavior. Participants had to indicate how often, in the previous four weeks, they had consumed each of the four products. The response scale ranged from 1 (*never*) to 7 (*very often*). In the introductory analyses, items were averaged to form a composite score of consumption behavior (alpha = .75).

RESULTS

Factor Analysis of Beliefs

An exploratory factor analysis (maximum likelihood with oblimin rotation) was performed on behavioral beliefs; three factors were revealed, accounting for 54.17% of the total variance. Beliefs with high loadings on the first factor (27.20% of variance) were: the four products are nutritious; they provide energy. Items loaded on the second factor (17.71% of variance) were: the four products are difficult to digest; they enhance blood cholesterol; they cause hypertension; they make you fat; and are fatty. The following were loaded on the third factor (9.26% of variance): they are good; they keep up this province’s traditions. Loadings of the selected items (all unifactorial) were higher than .48. The three factors can be referred to as: Positive consequences, Negative consequences, Tasty foods and Traditions. The two items loaded on the first factor and the two items loaded on the third were significantly correlated ($r = .67$, and $r = .28$, $ps < .001$, respectively). For the second factor, reliability was high (alpha = .82). We, therefore, averaged items in order to obtain three belief composites.

Introductory Analyses

Table 1 reports means and standard deviations of the measures used.

TABLE 1
Means related to identification, behavioral beliefs, and the basic concepts of TPB

	M	SD
Identification	5.71	1.04
Beliefs: Positive consequences	5.72	1.10
Beliefs: Negative consequences	4.58	1.17
Beliefs: Tasty foods and Traditions	6.35	0.76
Affective attitude	5.49	1.02
Instrumental attitude	4.44	1.30
Subjective norms	5.52	1.19
Perceived behavioral control	5.23	1.51
Past behavior	5.70	1.08
Intentions to consume	5.29	1.43
Behavior (Time 2)	3.01	1.28

Note. On the 7-point scale, the higher the score: the stronger the identification with the province; the stronger the belief that consumption of the four products may have positive consequences; may allow the province to maintain its traditions; the stronger also the belief of negative consequences. Moreover, the higher the score: the stronger the positive attitude; the perception that important others are in favor of the behavior; the perception of control over the behavior. Lastly, the higher the score: the stronger the intentions to consume the target products; the more often the behavior was performed in the past; the more often it was performed in the last four weeks (Time 2). All means are different from the mid-point of the scale, $p < .001$.

As shown in Table 1, identification with one's province was high. Both beliefs relating to positive consequences and beliefs relating to negative consequences were endorsed by respondents; however, positive consequences were endorsed more strongly. The assertions that the four products are tasty and allow residents to keep up provincial traditions were highly approved. The attitude toward one's own consumption of the four products was positive, but affective attitude (e.g., pleasant, exciting) was higher than instrumental attitude (e.g., useful, profitable), $t(270) = 16.57$, $p < .001$. This result might depend on the fact that different belief factors are related to the two attitude components. In the case of subjective norms, participants agreed that important others usually consume the typical products (descriptive norm); they also believed that social referents were in favor of consumption by participants (injunctive norm). As regards PBC, consumption was considered quite easy, and consumption behavior had frequently been performed in the past (past behavior). The intention to eat the four products — a key concept in TPB — was strong. Finally, the mean was not high for actual behavior, measured four weeks after administration of the first questionnaire. This result could depend on the measures used: intentions and past behavior were assessed by items investigating consumption of the four food products taken together, while actual consumption (Time 2) was assessed by four items, one for each product.

Structural Equation Models

The main goal of the study was to test the predictive power of TPB and TPB + past behavior considering as target behavior the personal consumption of local products. We applied confirmatory factor analysis (Lisrel 8.71; Jöreskog & Sörbom, 2004) to investigate the conceptual distinction between the constructs included in the models, and regression with latent vari-

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ables to test the validity of TPB and TPB + past behavior. Analyses were performed using co-variance matrices (Cudeck, 1989), and maximum likelihood as the estimation method.

To assess the models' goodness of fit, we used three measures: the chi-square test, the comparative fit index (CFI; Bentler, 1990), and the standardized root mean squared residual (SRMR; Bentler, 1995). We used the following rules of thumb: for chi-square, it should be non-significant, or the chi-square/degrees of freedom ratio should at least be less than 3 (Carmines & McIver, 1981); CFI should be equal to or higher than .95; SRMR should be equal to or lower than .08 (Hu & Bentler, 1999). For each construct, measured by multiple items, we computed two parcels. Item parceling has some advantages: it allows error measurement attenuation; indicators resulting from aggregation are more continuous and more normally distributed than individual indicators; the number of variables/sample size ratio improves, resulting in a more stable estimate of parameters (for a critique to the parceling method, see Bandalos & Finney, 2001).

In applying confirmatory factor analysis, we tested a model with seven latent variables (affective attitude, instrumental attitude, subjective norms, past behavior, perceived behavioral control, intentions, Time 2 behavior), and 12 observed variables (two for each construct, except for past behavior and PBC, which were measured by a single item). The model showed a good fit: $\chi^2(35) = 55.85$, $p = .014$; chi-square/degrees of freedom ratio = 1.59; SRMR = .027; CFI = .99. Factor loadings were all significant and higher than .67.

The correlations (ϕ coefficients) between latent constructs are reported in Table 2. As we can see, all the constructs were correlated, but correlations were significantly lower than 1 (95% confidence interval). The correlation between affective and instrumental attitude was very high ($\phi = .75$). We therefore decided to model attitude as a second-order factor, accounting for shared variance in the two components (first-order factors).

TABLE 2
Correlations (ϕ coefficients) between latent constructs

	1	2	3	4	5	6	7
1. Affective attitude	–						
2. Instrumental attitude	.75	–					
3. Subjective norms	.42	.51	–				
4. Past behavior	.43	.32	.52	–			
5. PBC	.32	.22	.25	.19	–		
6. Intentions to consume	.53	.39	.63	.69	.23	–	
7. Behavior (Time 2)	.45	.36	.44	.52	.25	.52	–

Note. PBC = perceived behavioral control. All correlations are significant, $p < .001$.

According to Planned Behavior Theory, we hypothesized that attitude, subjective norms, and PBC predicted intentions, which in turn predicted actual behavior. The TPB also assumes that PBC has a direct effect on behavior. In the extension of TPB, past behavior was added as a direct predictor of both intentions and behavior.

The regression model showed a good fit: $\chi^2(36) = 81.14$, $p < .001$; chi-square/degrees of freedom ratio = 2.25; SRMR = .089; CFI = .98. As predicted (Figure 1), attitude ($\gamma_{31} = .27$, $p < .001$) and subjective norms ($\gamma_{32} = .50$, $p < .001$) influenced intentions; in turn, intentions ($\beta_{43} = .50$, $p < .001$) and PBC ($\gamma_{43} = .14$, $p < .05$) influenced consuming behavior. Unexpectedly, PBC did not affect intentions ($\gamma_{33} = .03$, n.s.).[3] Overall, the model explained 49% of the variance in intentions, and 30% of the variance in behavior.
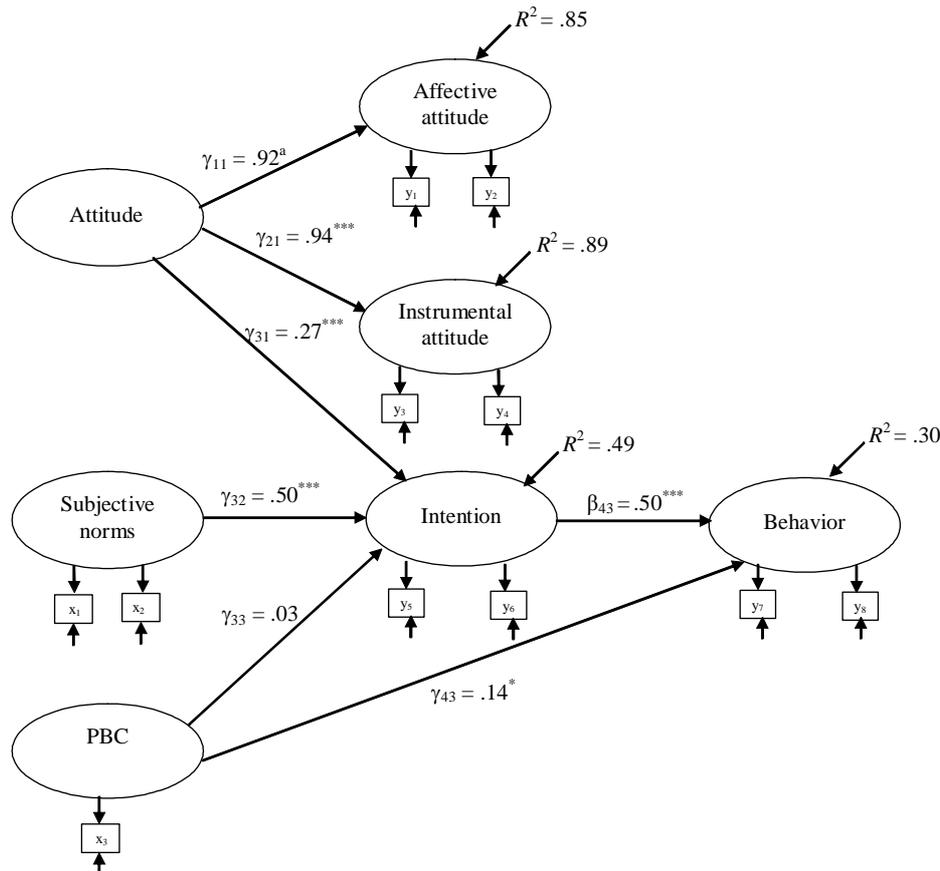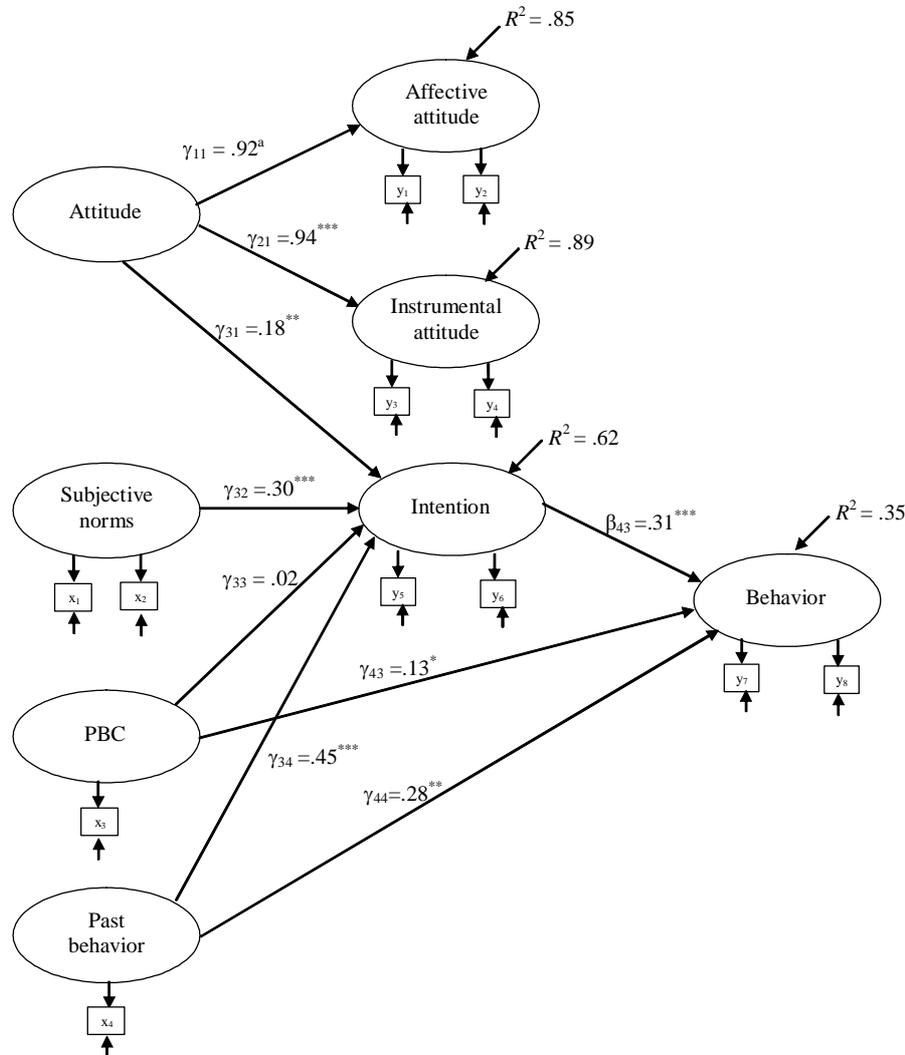

Note. Parameters are completely standardized. The direct effects of attitude and subjective norms on behavior were not estimated. PBC = perceived behavioral control. a = fixed parameter. Also the loading of x_3 on PBC was fixed to 1, and its error was fixed to 0.
*$p < .05$. ***$p < .001$.

FIGURE 1
Findings for the Theory of Planned Behavior.

We then tested TPB + past behavior. The structural equation model showed a good fit: $\chi^2(42) = 84.77$, $p < .001$; chi-square/degrees of freedom ratio = 2.02; SRMR = .084; CFI = .98. As expected (Figure 2), intentions were predicted by attitude ($\gamma_{31} = .18$, $p < .01$), subjective norms ($\gamma_{32} = .30$, $p < .001$), and past behavior ($\gamma_{34} = .45$, $p < .001$). Behavior at Time 2 was predicted by intentions ($\beta_{43} = .31$, $p < .001$), PBC ($\gamma_{43}= .13$, $p < .05$) and past behavior ($\gamma_{44} = .28$, $p < .01$). As in the previous model, PBC did not affect intentions ($\gamma_{13} = .02$, n.s.).[4] Overall, the model explained 62% of the variance in intentions, and 35% of the variance in behavior. Thus, espe-

cially for intentions, the proportion of explained variance was higher when past behavior was added to the TPB.

Note. Parameters are completely standardized. The direct effects of attitude and subjective norms on behavior were not estimated. PBC = perceived behavioral control. a = fixed parameter. Also loadings of x_3 and x_4 were fixed to 1, and their errors were fixed to 0. *$p < .05$. ** $p < .01$. ***$p < .001$.

FIGURE 2
Findings for the Theory of Planned Behavior augmented with past behavior.

Regression Analyses: Effects of Beliefs

In order to test the effects of beliefs and identification on the components of TPB, we conducted a hierarchical regression analysis. In Step 1, we introduced the three types of beliefs as predictors; in Step 2 we added identification with one's province. All TPB constructs were used as dependent variables. As we can see from Table 3, the belief that the four products are nutri-

TABLE 3
Standardized regression coefficients and explained variance

	Affective attitude	Instrumental attitude	Subjective norms	PBC	Past behavior	Intention	Behavior (Time 2)
Step 1							
Beliefs: Positive consequences	.27***	.25***	.16**	.11	.08	.11	.09
Beliefs: Tasty foods and Traditions	.24***	.10	.09	.20***	.45***	.33***	.19**
Beliefs: Negative consequences	−.04	−.20***	−.20***	−.04	−.05	−.03	−.09
R^2	.17	.14	.09	.07	.23	.14	.06
$F_{(3, 267)}$	18.22***	14.20***	8.99***	6.46***	26.89***	15.15***	6.10***
Step 2							
Beliefs: Positive consequences	.24***	.22***	.14*	.09	.08	.10	.06
Beliefs: Tasty foods and Traditions	.20***	.05	.06	.18**	.44***	.30***	.16**
Beliefs: Negative consequences	−.01	−.17**	−.18**	−.03	−.04	−.01	−.07
Identification with the province	.19**	.18**	.15*	.09	.02	.10	.15**
R^2	.20	.17	.11	.07	.23	.16	.08
$F_{(4, 266)}$	16.67***	13.40***	8.34***	5.35***	20.15***	12.16***	6.02***
F change $(1, 266)$	10.16**	9.63**	5.89*	1.95	.19	2.90	5.48*

Note. PBC = perceived behavioral control; *F* change = measure of increase in explained variance.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

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tious and energetic (positive consequences) predicted subjective norms and both components of attitude, while the belief that they may be unhealthy (negative consequences, e.g., difficult to digest, fatty) had only two effects, showing a negative association with subjective norms and instrumental attitude. The most effective beliefs — influencing PBC, affective attitude, intentions, past behavior, Time 2 behavior — were: the four products are tasty, and their consumption keeps up provincial traditions. The effects of identification were widespread, since this variable was related to the perception of social pressures (subjective norms), attitude, and Time 2 behavior.

DISCUSSION

The main aim of this study was to analyze whether TPB, the most powerful explanation of intended action, may satisfactorily explain the behavior of consuming food products typical of one's province (Trentino). Knowing which constructs of TPB have stronger effects offers the opportunity to create communication campaigns aimed at enhancing consumption of the target products. We also tested an extension of TPB, including past behavior as a key antecedent of intentions and future behavior (see, e.g., Conner & Armitage, 1998; Ouelette & Wood, 1998; Sutton, 1994). Further, to fully understand consumption decisions, we analyzed the effects on TPB constructs of beliefs about the target products, and of identification with one's province. The local foods, which were the target of our study, were: sausages, salamis, and beef (a recipe in which beef is salted and marinated in a long preparation process). These products are tasty, but may cause health problems: they may, for instance, raise blood cholesterol levels and may contain bacteria, such as Salmonella and Listeria. It is therefore useful to create communication campaigns that foster the consumption of the target products, while steering consumption into directions favorable to health. The target population, in this study, was adolescents attending senior high school. We chose this population, since the continuation of local traditions depends on young people; moreover, it has been demonstrated that young adults, especially those with higher education, are the most likely to engage in risky food behaviors (Li-Cohen & Bruhn, 2002; Patil, Cates, & Morales, 2005; U.S. Department of Agriculture, 1998).

Results, relating to the original TPB, showed that subjective norms were the strongest predictor of behavioral intentions, followed by attitude, while PBC did not affect intentions; moreover, replicating previous research (see Conner & Sparks, 2005), intentions were found to be the strongest predictor of behavior, which was also affected by PBC. Thus, unlike what was observed by Bissonnette and Contento (2001), the key predictor of intentions to eat local foods was SN and not PBC. This finding might be due to the fact that young respondents generally lived with their families, which strongly influenced their food choices. As to PBC, it probably did not affect intentions since this behavior was regarded as easy to enact; intentions, therefore, were especially guided by attitudes and social influences.

Coherent with previous studies (e.g., Conner & Armitage, 1998; Hagger, Chatzisarantis, & Biddle, 2002; Ouellette & Wood, 1998), adding past behavior to TPB increased the portion of variance explained in both intentions and behavior. Moreover, past behavior was the strongest predictor of intentions and a strong predictor of behavior. Hence, our findings show the key role of this construct in explaining and predicting future behavior, especially when behavior is perceived as easy to perform (see, e.g., Fishbein & Ajzen, 2010).

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As regards beliefs, all three perceived consequences influenced the TPB constructs. Interestingly, the least influential beliefs related to negative consequences (e.g., the four food products are fatty; they may enhance cholesterol levels and hypertension), showing that young people are relatively unconcerned about the consequences of food choices. Identification with one's province was also influential, affecting behavior, attitude, and subjective norms (for the effects of self-identity, see Rise et al., 2010).

Accordingly, communication campaigns aimed at increasing consumption of the four products, and probably of other local food products, should stress in particular that they provide energy, are good, and promote continuation of one's own provincial traditions. It would also be helpful to enhance identification, after determining, through future research, the key representations on which identification is built (e.g., pride in the economic development of the province; pride in the low rate of unemployment; pride in environmental attractions). Evidently, communications should make young people aware of any negative consequences for health, caused by consuming certain food products, and should indicate preventive behaviors, such as eating the target products cooked and not raw in order to avoid Salmonella or Listeria infections (for a message useful to prevent Salmonella infections, see Trifiletti, Crovato, Capozza, Visintin, & Ravarotto, 2012). Future research should also consider samples of adults, since antecedents may have different effects for adults; for instance, social norms could be less influential and affect intentions to a lesser extent compared to adolescents.

Hence, our study once again demonstrates the predictive, explanatory power of the Theory of Planned Behavior; it also shows which concepts and beliefs are most commonly associated with the consumption of local foods.

NOTES

1. *Luganega* is a cured sausage of pure pork; it can be consumed cooked, if fresh, or raw, after adequate curing. Sometimes the pork is mixed with beef, horse or goat meat. *Carne salada* (salt beef) is instead produced from the finest cut from the adult animal (topside). The meat is salted, marinated and seasoned with pepper, garlic, rosemary, juniper berries and bay leaves. It can be thinly cut, carpaccio-style and eaten raw, or lightly fried for a few minutes. *Ciuìga* is a salami made of pork and turnip; it can be eaten cooked or raw. *Mortandela*, made from pork and spices, can also be consumed cooked or raw.
2. In this and in all the following measures, the four products are represented by square brackets.
3. To improve the fit of the model, we allowed a pair of errors to be correlated, that is the error of the first parcel of affective attitude and the error of the second parcel of instrumental attitude.
4. Also in the model in Figure 2, we correlated the error of the first parcel of affective attitude with that of the second parcel of instrumental attitude.

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