



# **Can Attitude Theory Improve Rational Choice Theory or Vice Versa?**

A Comparison and Integration of the Theory of  
Planned Behavior and Value-Expectancy Theory

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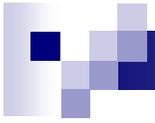
## Introduction

This presentation provides a detailed **comparison of two theories**:

- the attitude theory of Martin Fishbein and Icek Ajzen (we focus on **TPB** – Theory of Planned Behavior)
- and rational choice theory – **RCT** (we focus on value expectancy theory – **VET**).

Questions are:

- What are the differences and similarities?
- If there are differences: which hypotheses are more plausible?
- Could an integrated theory be formulated?



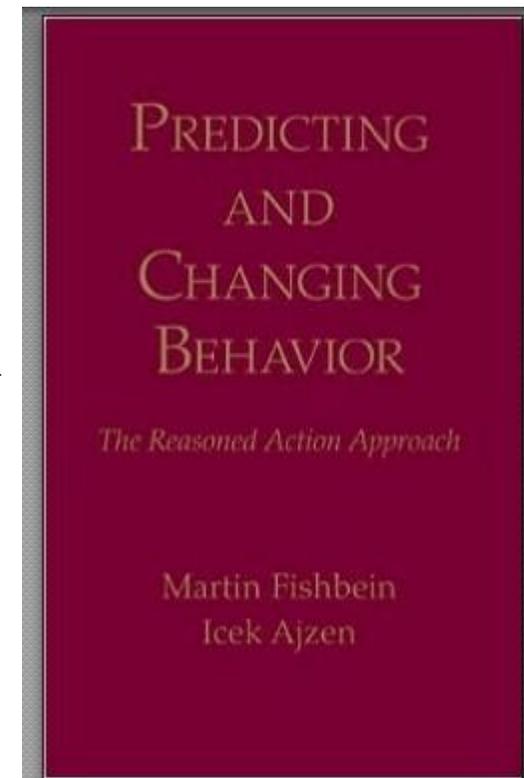
## Is such a comparison meaningful?

To be sure, the theories both explain identical phenomena, but, it seems, **TPB is clearly superior to RCT.**

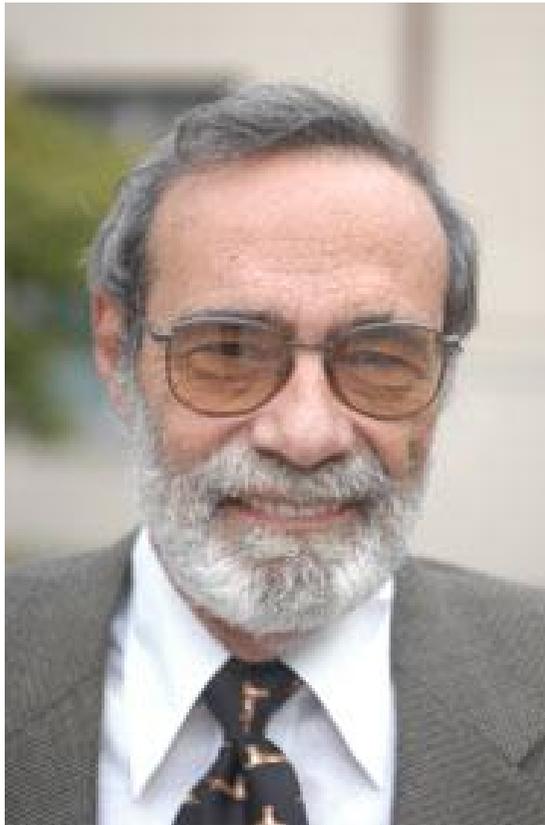
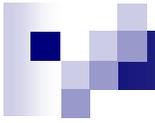
Let us look at some **characteristics** of the two theories.

## The Theory of Planned Behavior (TPB)

- **First ideas** included in Fishbein **1963** – more than 50 years ago. TPB was proposed in Ajzen 1985.
- **Cumulative development:** A detailed discussion of the critique of the theory, comparisons with other theories, detailed descriptions of research and measurement procedures are provided in Fishbein and Ajzen 2010. →
- There are **standardized measurement procedures** (see 2010 book).
- There is basically **one version** – TPB (theory of planned behavior).



- 
- There is overwhelming **empirical confirmation**.
  - Between 1980 and 2010 more than **1000 peer-reviewed empirical papers** have been published (Gold 2011, see also <http://people.umass.edu/aizen/tpbrefs.html>) that test the theory. See also **a new meta-analysis** by Winkelkemper, Ajzen and Schmidt (2017) of 163 studies that test TPB which provides “support for the TPB’s basic tenets ...”.



Martin Fishbein  
(1936-2009)



Icek Ajzen  
(born 1942)



## Rational Choice Theory – compared with TPB

### The Theory of Planned Behavior Behavior (TPB)

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- First ideas 1963
- Cumulative development of one version...
- Standardized measurement procedures for one version ...
- Overwhelming confirmation of one version of the theory ...
- By far more than 1000 reviewed articles about one theory

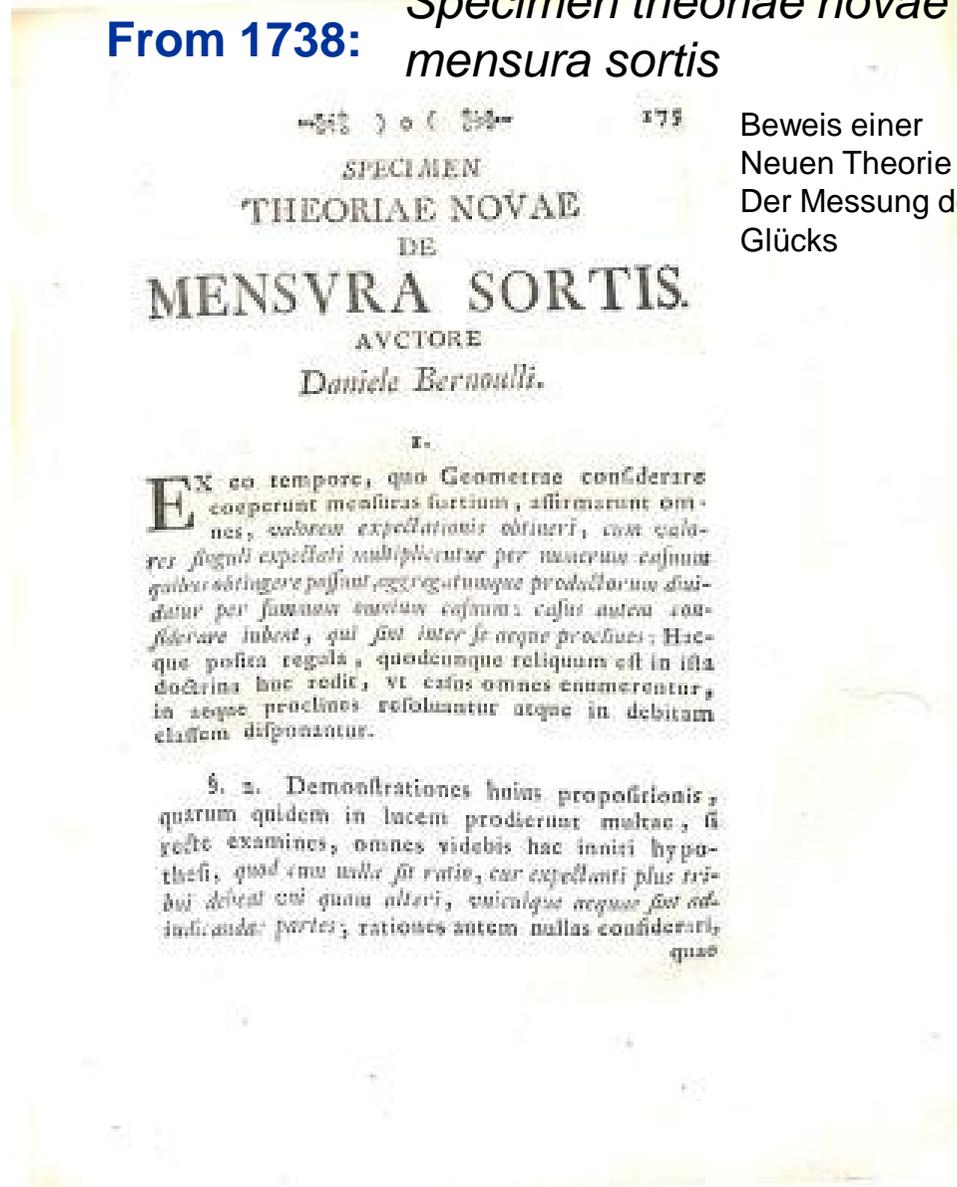
### Rational choice Theory

- **D. Bernoulli 1738, Bentham 1789**
- ?????
- ?????
- ????
- ???

Daniel Bernoulli (1700-1782)



From 1738: *Specimen theoriae novae de mensura sortis*



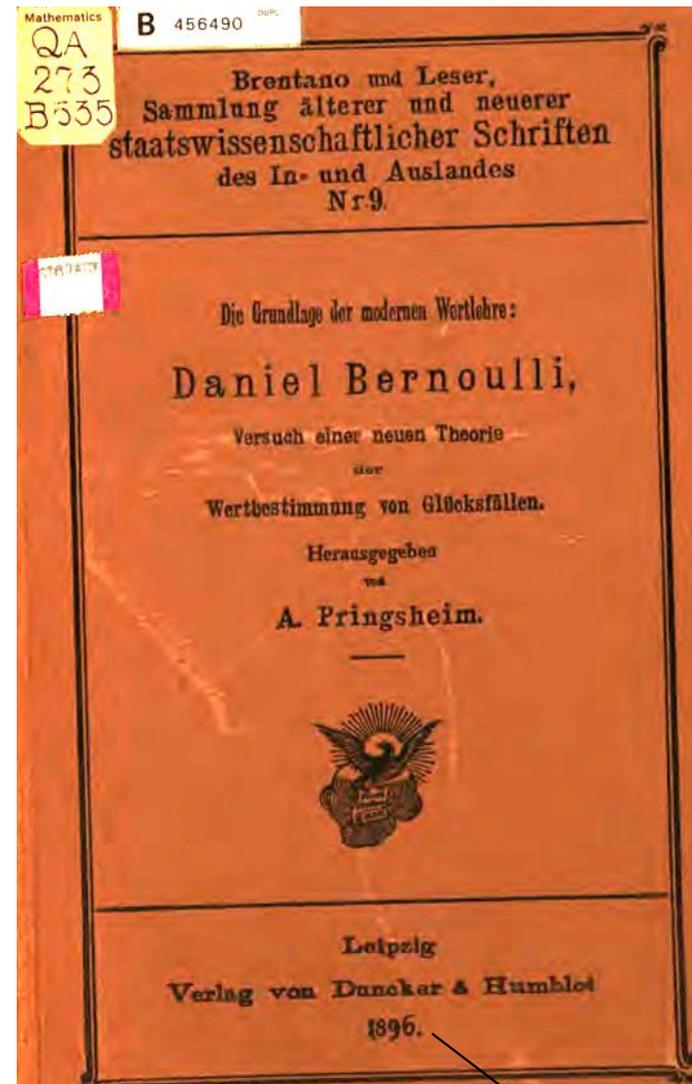
Beweis einer Neuen Theorie Der Messung des Glücks

This is the German translation from 1896 – there is also an English translation.

**Everything can be downloaded for free!**

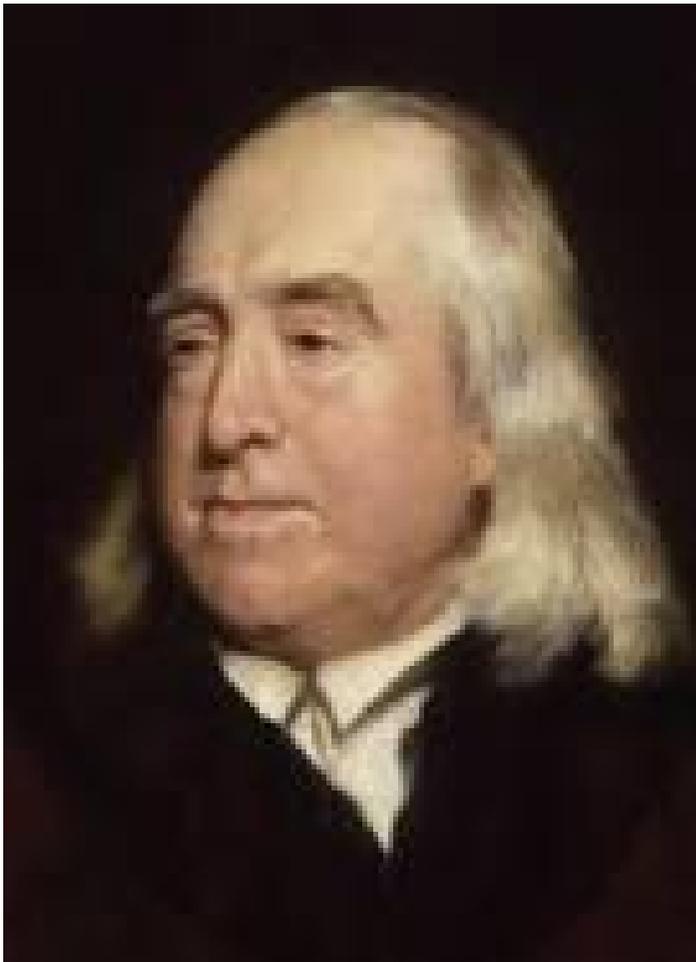
**Excellent summary of the development of utility theory**

is Stigler 1950, part I and II (reference at the end of the presentation).



1836

## Jeremy Bentham (1748-1832)



AN  
INTRODUCTION  
TO THE  
PRINCIPLES  
OF  
MORALS AND LEGISLATION.

BY  
JEREMY BENTHAM, ESQ.

BENCHER OF LINCOLN'S INN; AND LATE OF  
QUEEN'S COLLEGE, OXFORD, M.A.

IN TWO VOLUMES.

A NEW EDITION, CORRECTED BY THE AUTHOR.

VOL. I.

LONDON:

PRINTED FOR W. PICKERING,

LINCOLN'S-INN FIELDS;

AND

E. WILSON, ROYAL EXCHANGE.

1823.

First edition 1789



It thus seems that the **Fishbein-Ajzen theory**

- is a **prototype** of a good theory in the social sciences and
- seems **clearly superior to RCT** on all counts (except age!)

Does it really **make sense** to compare two such different theories in order to choose the better one or improve one of them?

**Would you compare an Isetta with a Rolls Royce if you are considering buying a good car?**





There is **another example** that seems to make a comparison meaningful: the story of **David and Goliath**.

**David (who could symbolize the inferior theory – VET )**  
wins against the seemingly strong  
**Goliath (symbolizing the superior theory -- TPB).**

**The inferior RCT** could include hypotheses that contradict (and falsify) TPB.

**Example of car:** the Isetta has perhaps a revolutionary technology for some parts which could be used by Rolls Royce producers!



From the philosophy of science (Lakatos 1970) we know that even **if a theory is well confirmed, problems could emerge in the light of another theory.**

**To conclude, a comparison of TPB and RCT is meaningful.**

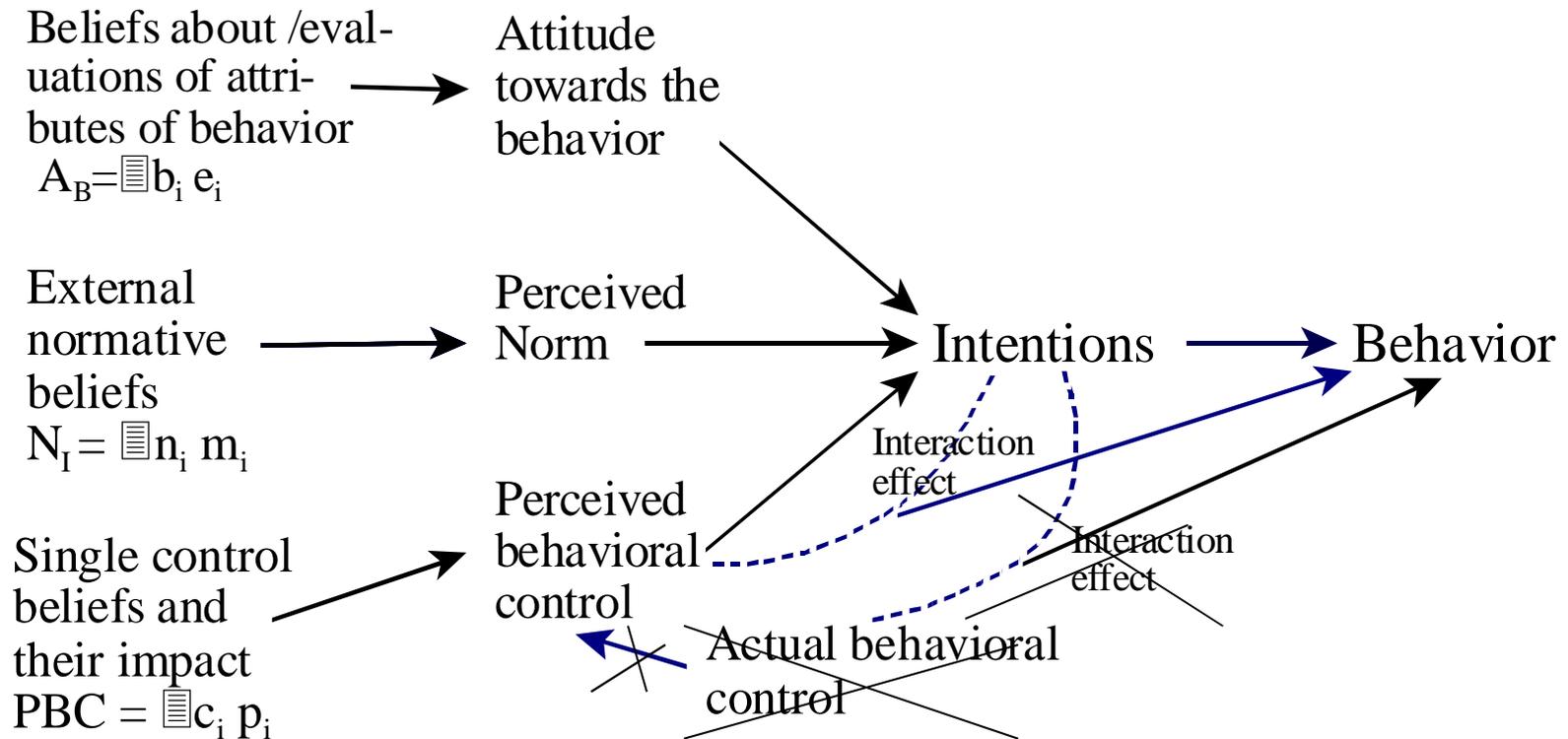
**So far** there is only a comparison of TPB and RCT by Ajzen in 1996 and by Fishbein/Ajzen 2010, but only some of the hypotheses of the theories are discussed. **There is thus so far no detailed comparison of both theories.**



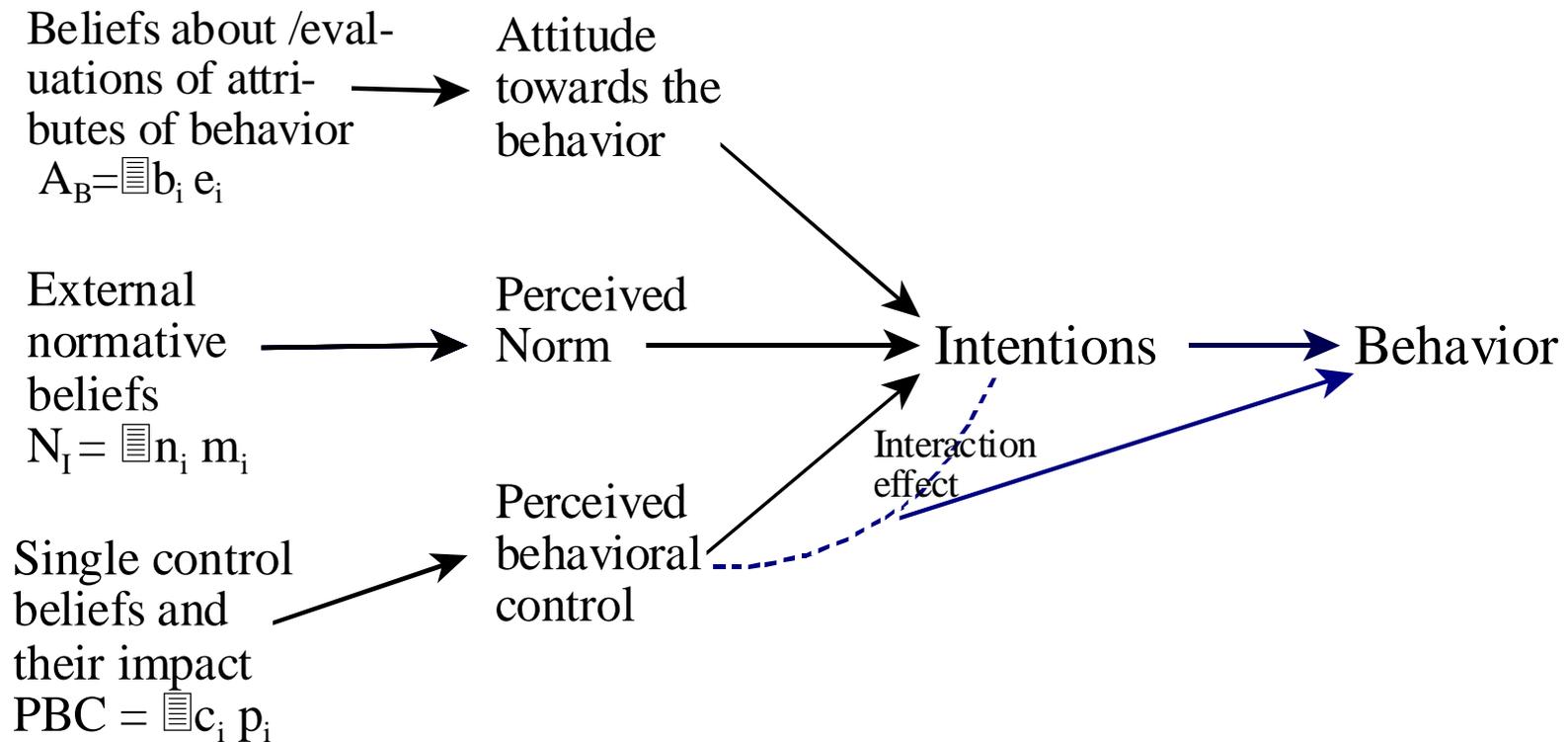
# Contents of the Presentation

- Brief outline of the theory of Planned Behavior (TPB)
- Brief outline of value-expectance theory (VET)
- Comparison and discussion of the most important similarities and differences
- Proposal of an integrated theory

# The Theory of Planned Behavior (TPB)



**So this is the model without actual behavioral control that will be discussed:**





## Problems of the Theory

As every theory in the social sciences TPB is **controversial**.

A detailed discussion of the critique is in the book of 2010 (chapter 6). One question is the “sufficiency” of the model, as the authors put it. The question is **whether other factors are to be included** in explaining the variables of the model. Such variables might be, for example, identity or past behavior.

Even if one does not agree with every defense of the theory, it is a very **well confirmed theory** and it is worthwhile to compare it with VET.

# Value-Expectancy Theory

## Only brief summary:

- The **SEU** (subjective expected utility) or net utility of a **perceived behavioral alternative** is **defined** in the following way:
  - For each perceived behavioral **consequence** of a behavioral alternative it must be empirically determined:
    - **utility** and
    - **subjective probability** (belief)
  - The products of are **added** for each behavioral alternative.
  - $SEU(a_i) = \sum p_{ij}U(O_j)$  / i is from 1 to N and refers to perceived behavioral alternatives, j are the outcomes (behavioral consequences)
- **Theory** assumes: Behavior with the highest SEU is chosen  
 $SEU(a_i) > SEU(a_k) \rightarrow a_i$  // If the SEU for a behavior i is greater than the SEU for any other behavior k, behavior i is chosen.



## Note that

Utilities = preferences,

Subjective probabilities = perceived constraints

$SEU(a_i) > SEU(a_j) \rightarrow a_i = \text{subjective utility maximization}$



## References for VET:

For its history see **Stigler 1950a, 1950b**. For expositions and discussions see Ajzen 1996; **Edwards 1954; Feather 1959, 1982, 1990; Schoemaker 1982**. In political science see Riker and Ordeshook 1973. For a discussion of VET and RCT in general see Opp 2017a. Still another version focuses on achievement-related action, based on Atkinson 1957. See, e.g., Wigfield and Eccles 2000. This theory will not be discussed in this essay.

In German see **Esser 1999, 247-293**.



## What Do the Theories Have in Common?

- Behavior may be **spontaneous** or **deliberate**.
  - TPB: discussion and application of the MODE model by Fazio and co-authors.
- **Perceived behavioral control** as an explanatory variable = perceived constraints in RCT or subjective probabilities in VET.
- **Norms** (as social pressures) as an explanatory variable are behavioral consequences in VET.

# Differences Between the Theories

## Summary of the Differences

Attributes of the Theories	TPB	VET
Assumption of “rationality”	No	Yes (Fishbein/Ajzen allegation)
Subjective <b>utility maximization</b>	No	Yes
<b>Attitudes</b> or <b>goals</b> as explanatory variables	Attitudes	Goals
<b>Intention</b> as a dependent and independent variable	Yes	No
A multi-stage causal model explaining <b>attitudes, norms</b> and <b>perceived behavioral control</b>	Yes	No
Other differences ...	Not discussed	



## „Rationality“ in TPB: Fishbein and Ajzen’s Critique of RCT

The target of the critique is a **narrow** version of RCT.

Example: TPB does not, in contrast to RCT, assume that beliefs are **accurate or complete**. **This is not assumed in a wide RCT.**

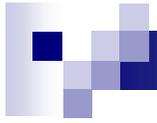
**Thus**, only a particular version of RCT is incompatible with TPB, not the wide version assuming „bounded rationality.“



## Additional quotations for the critique of TPB:

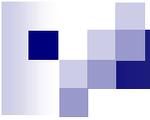
TPB does not, in contrast to RCT, assume that people “**fully and systematically review** all their beliefs every time they are about to perform a behavior” (451, Ajzen and Fishbein 2000: 7). **This is not assumed in a wide RCT.**

...“no assumption about rationality” is made. “Attitudes are assumed to follow **reasonably** from beliefs about the attitude object” (Ajzen 1996: 299). **It is not clarified what “reasonable” means.**



## The Rejection of Utility Maximization in TPB

The assumption of **subjective** utility maximization is made **implicitly**, without using the terms „utility maximization.“



This becomes particularly clear when we compare TPB's explanation of attitudes and VET's explanation of behavior:

**Attitude  $A_B$**  =  $\sum b_i e_i$ . This attitude has an indirect effect on the respective behavior.

**Behavior  $a_i$**  :  $SEU(a_i) = \sum p_{ij} U(O_j)$ ;  $SEU(a_i) > SEU(a_j) \rightarrow a_i$

Ajzen and Fishbein (1969) write that both theories are „**essentially equivalent**“ (403).

When there are **several behavioral alternatives** this **implies** (Ajzen 1969: 403-404) that the behavior with the highest  $A_B$  is chosen.

Thus, TPB **implicitly applies** the hypothesis of **subjective utility maximization**.



## Attitudes or Goals as Explanatory Variables?

In RCT **goals** (= preferences) are the major determinants of behavior.

TPB claims that **attitudes** (= evaluations) are relevant. This is a long social psychological tradition.

**No comparative discussion** of these conflicting propositions is provided.

The **relevance of goals is admitted**: “There appears to be general agreement among social psychologists that most human behavior is goal-directed” (Ajzen 1985, p. 11).

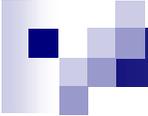


There are **numerous references to goals** when specific phenomena are explained (e.g. Ajzen 1985).

For example, **students who have the goal** to study at a particular university perform all kinds of required behaviors to reach this goal such as taking the SAT (Ajzen 1985). 57).

In explaining smoking cessation the **goal to stop smoking** is discussed (158-159).

**It is odd** that the importance of goals for performing behavior is emphasized time and again, but that goals are not included in the theory.



## Should attitudes thus be eliminated from TPB?

**Attitudes are sometimes among the determinants of behavior.** For example, a positive attitude toward a presidential candidate will influence voting for the candidate.

**Attitudes do not always determine behavior.**

For example, a positive attitude toward the work of Rembrandt does not lead to buy a Rembrandt or to steal one.

There are also **causal relationships between attitudes and goals**. For example, if I like Rembrandt I will more likely have the goal to buy a book about Rembrandt or go to Rijksmuseum in Amsterdam.



**Idea** by Kruglanski, Arie et al. 2015: "The Rocky Road From Attitudes to Behaviors: Charting the Goal Systemic Course of Actions" *Psychological Review* 122(4): 598-620

The authors specify **conditions under which attitudes generate goals.**

**Attitudes should thus be added as a causal factor for goals.**



## Should Intention Be Included in VET/RCT and, if so, how?

Research on TPB shows:

- Intentions are direct causes of behavior.
- Intentions have a strong effect on behavior.



## Arguments against including intentions in RCT

- It is **difficult** or perhaps impossible to **measure the existence of intention** when behavior is **spontaneous**. Example (Etzioni 1986, 168): “the mother who dashes into the fire to save her child ... she feels responsible for” (Etzioni 1986, p. 168). However, if measurement is sometimes difficult, this is **no reason to neglect the respective variable**.
- „**Triviality**“ of the relationship of intention and behavior – in the sense that a relationship is **not surprising**. This is not an acceptable criterion for excluding or including a factor in a theory. „Triviality“ of a hypothesis – e.g. crime is caused by biological factors – depends on existing knowledge. This changes over time. So a valid factor should sometimes be included, then – if „triviality“ changes – excluded. This is **not meaningful**.



## Arguments in favor of including intentions in RCT

- One should **include all causally relevant variables** in a theory.
- Intentions could be used as a **proxy for incentives** which are often difficult to measure. (There are strong correlations between intentions and behavior...) In studies about protest often **willingness** to protest is included.
- When in cross-sectional surveys hypotheses about the explanation of behavior are tested, the behavior is often measured in the past and the determinants in the present. Intentions are here a useful **proxy for behavior**.

**Conclusion:** It seems advisable to include intention in VET.



## How Can Intentions Be Included in VET?

*Alternative 1:*

$SEU(a_i) > SEU(a_k) \rightarrow \text{Intention}_i \rightarrow a_i$

*Alternative 2:*

$SEU(a_i) \rightarrow \text{Intention}_i$

$SEU(a_k) \rightarrow \text{Intention}_k$

$\text{Intention}_i > \text{Intention}_k \rightarrow a_i$

**Alternative 1 seems more plausible ...**



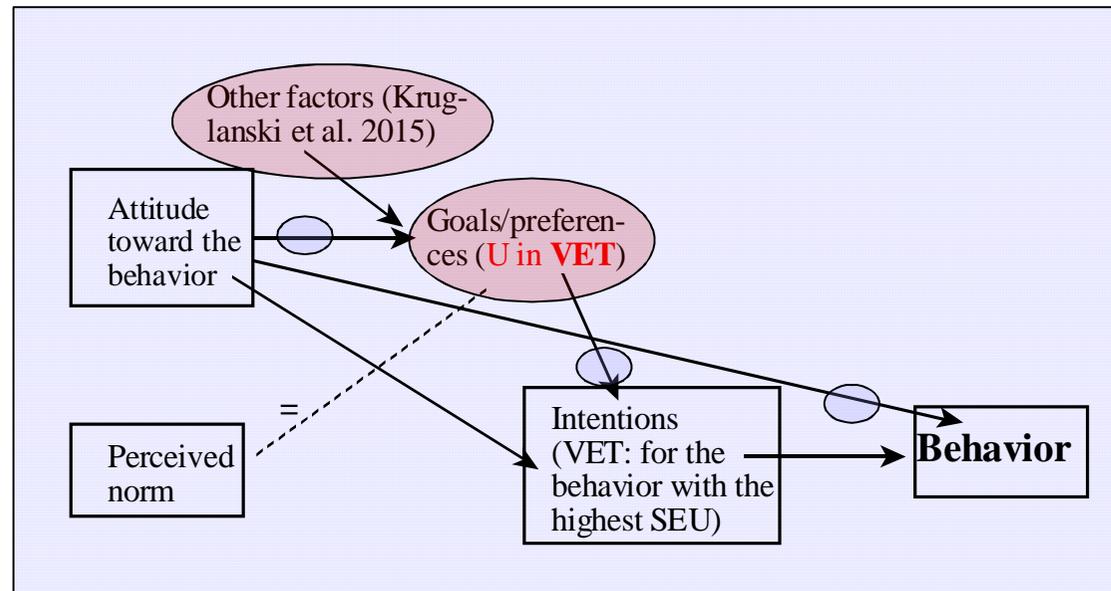
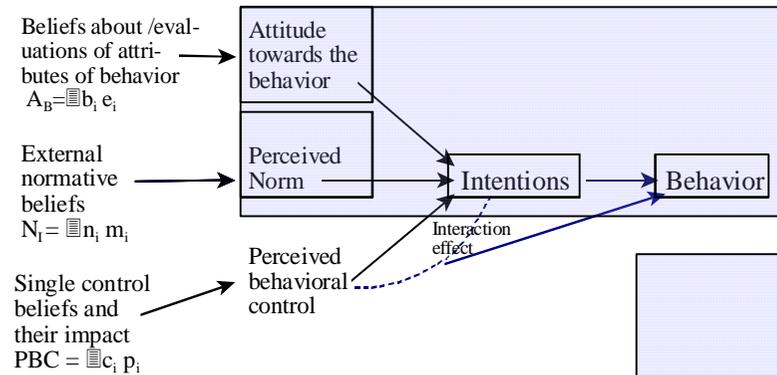
An individual will form an intention only if he or she has decided to perform a certain behavior, based on the SEU of each behavior. For example, if I am considering to go to a movie, to a pub or for a walk, I will not form an intentions for each of these behavioral alternatives. Only if it is clear which SEU is highest, an intention to perform this behavior originates. Thus, an intention will not arise for each behavior that is taken into consideration, but only for the behavior that best for the actor.



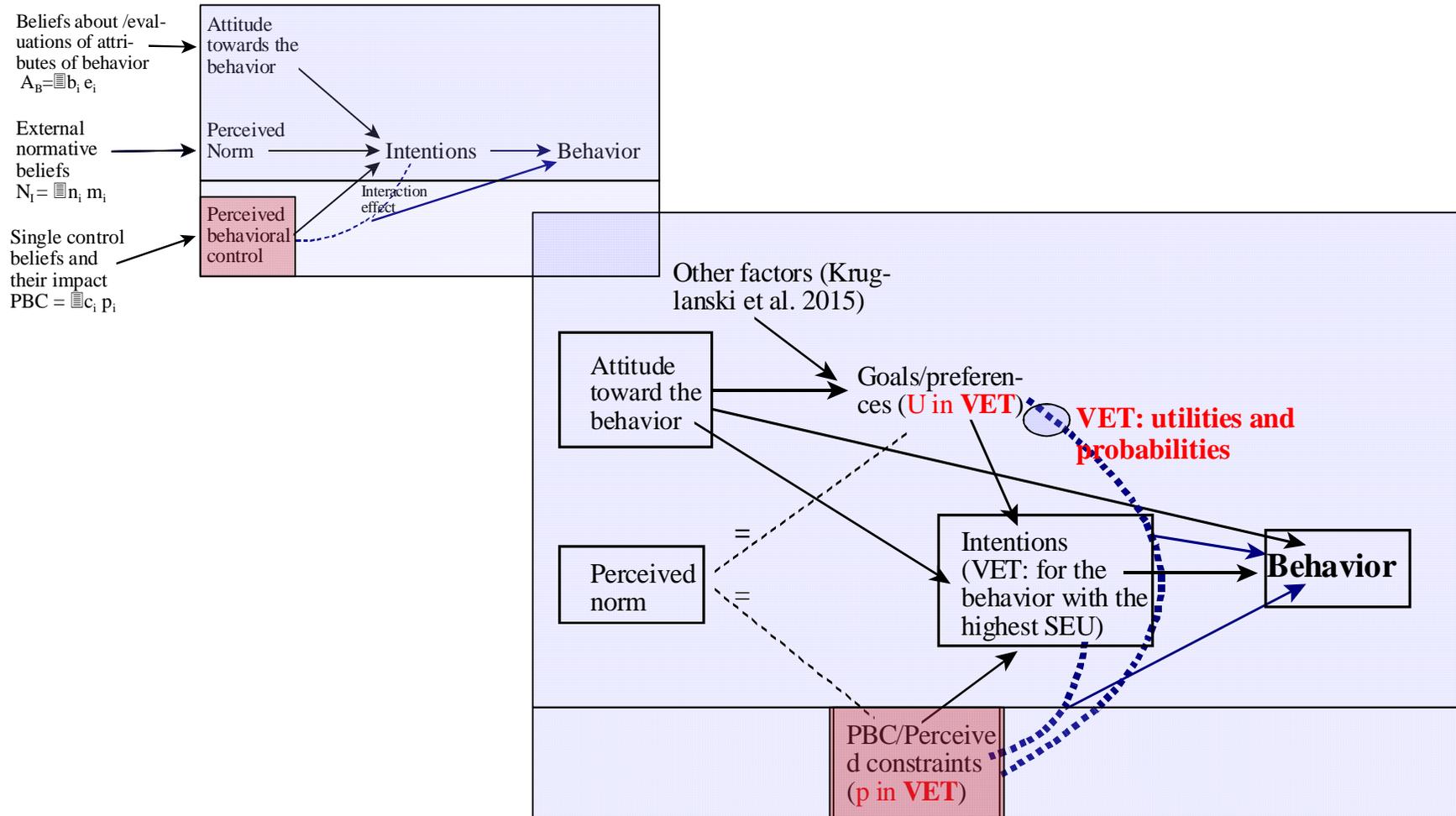
## How Can the two Theories Be Integrated?

**Procedure:** the TPB model is the starting point.  
I add hypotheses – from the perspective of RCT –  
to this model.

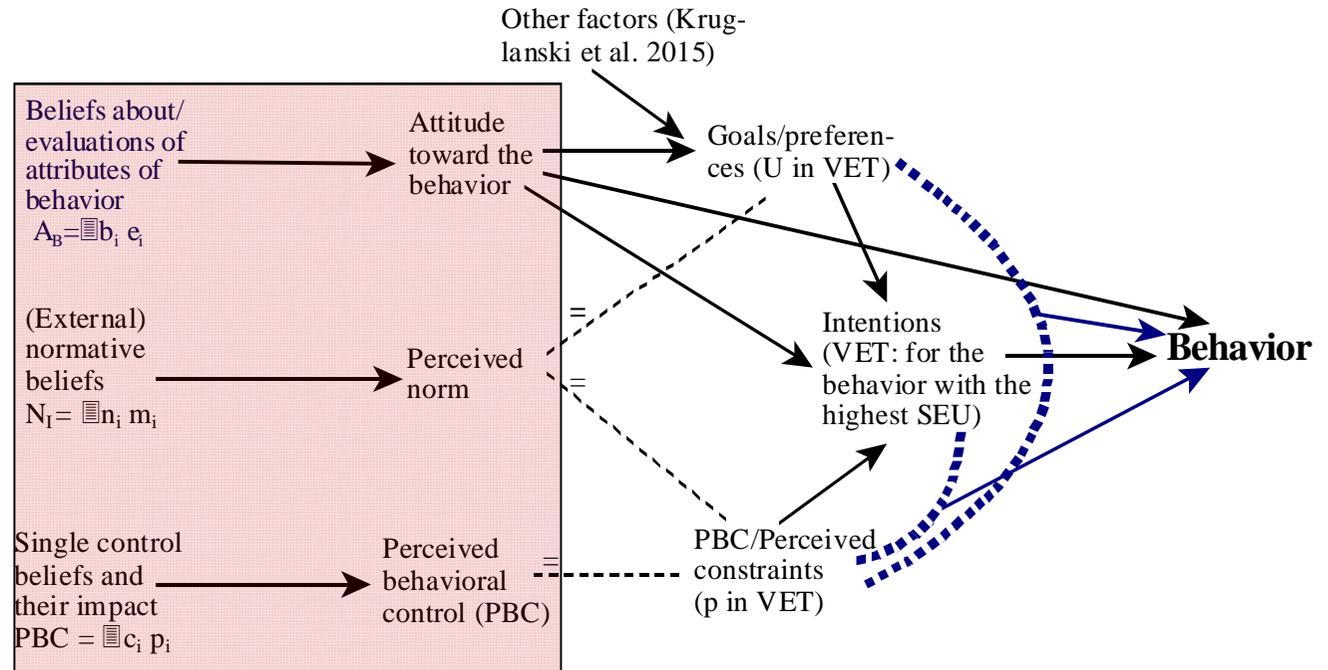
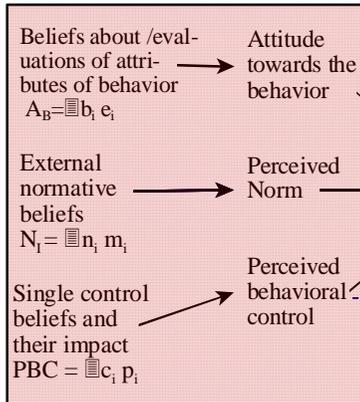
# The Integrated Model – Step 1



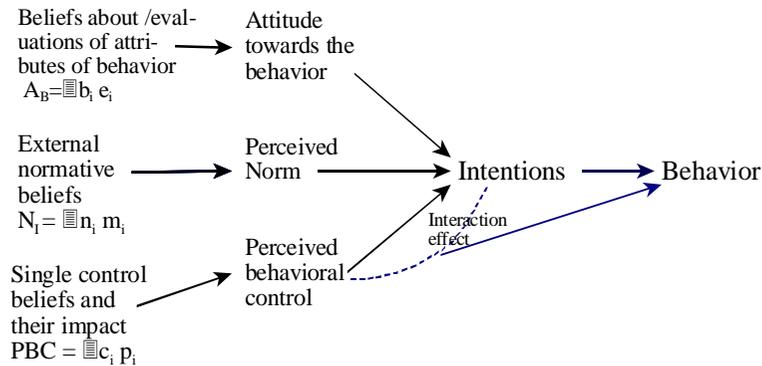
# The Integrated Model – Step 2



# The Integrated Model – Step 3

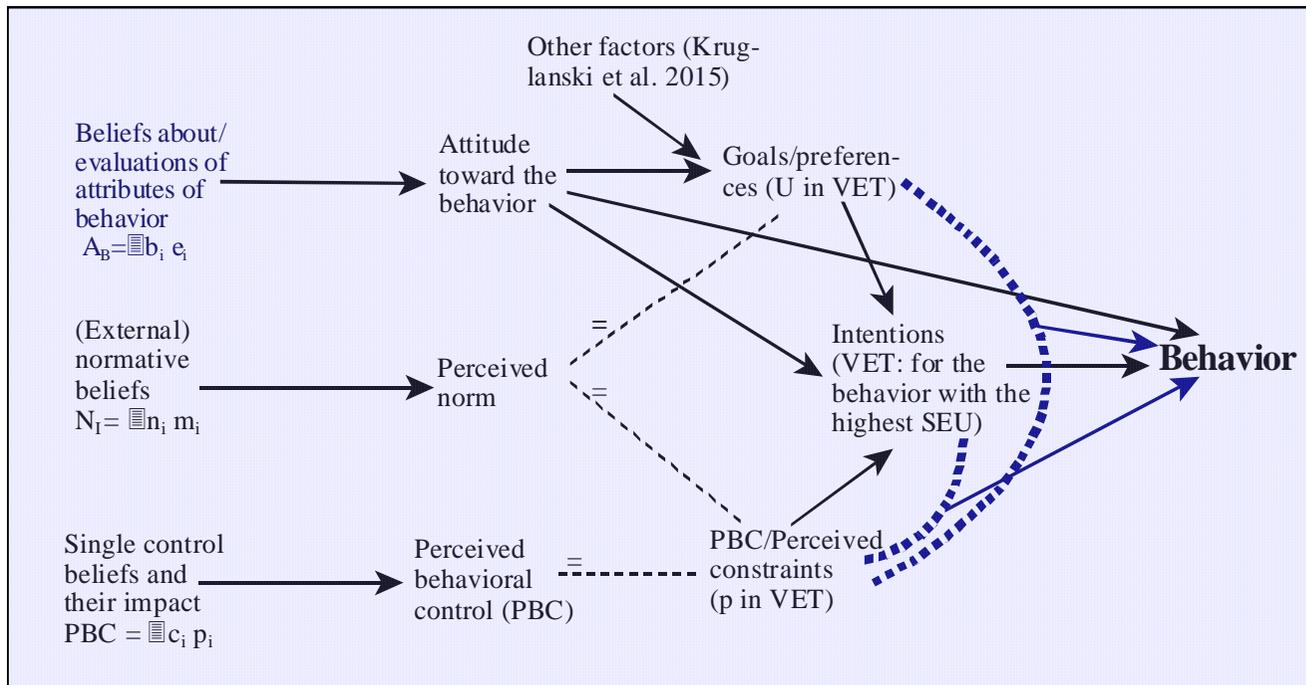


# The Integrated Model



## Summary:

- **Intentions** become part of TPB and VET.
- **Goals** should be added to TPB.
- **Attitudes** should be added to VET.
- **Final stage** of TPB is added.
- **Subjective utility maximization** is part of both theories.





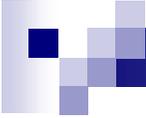
Back to David (RCT) and Goliath (TPB) – who won?

**Tie – UNENTSCHIEDEN ?!**



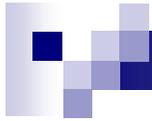
## Summary and Conclusion

- The critique of RCT by Fishbein/Ajzen is unjustified – only a very narrow version is addressed.
- TPB needs some modification, from the perspective of RCT
- RCT can learn from TPB
- Empirical research necessary!

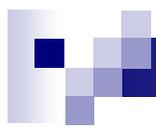


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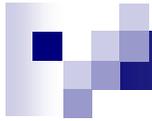
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## **This presentation is based on**

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Thanks  
for  
listening

