

The Role of Personal Values, Urban Form and Auto Availability in the Analysis of Walking

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Active Living Research Conference

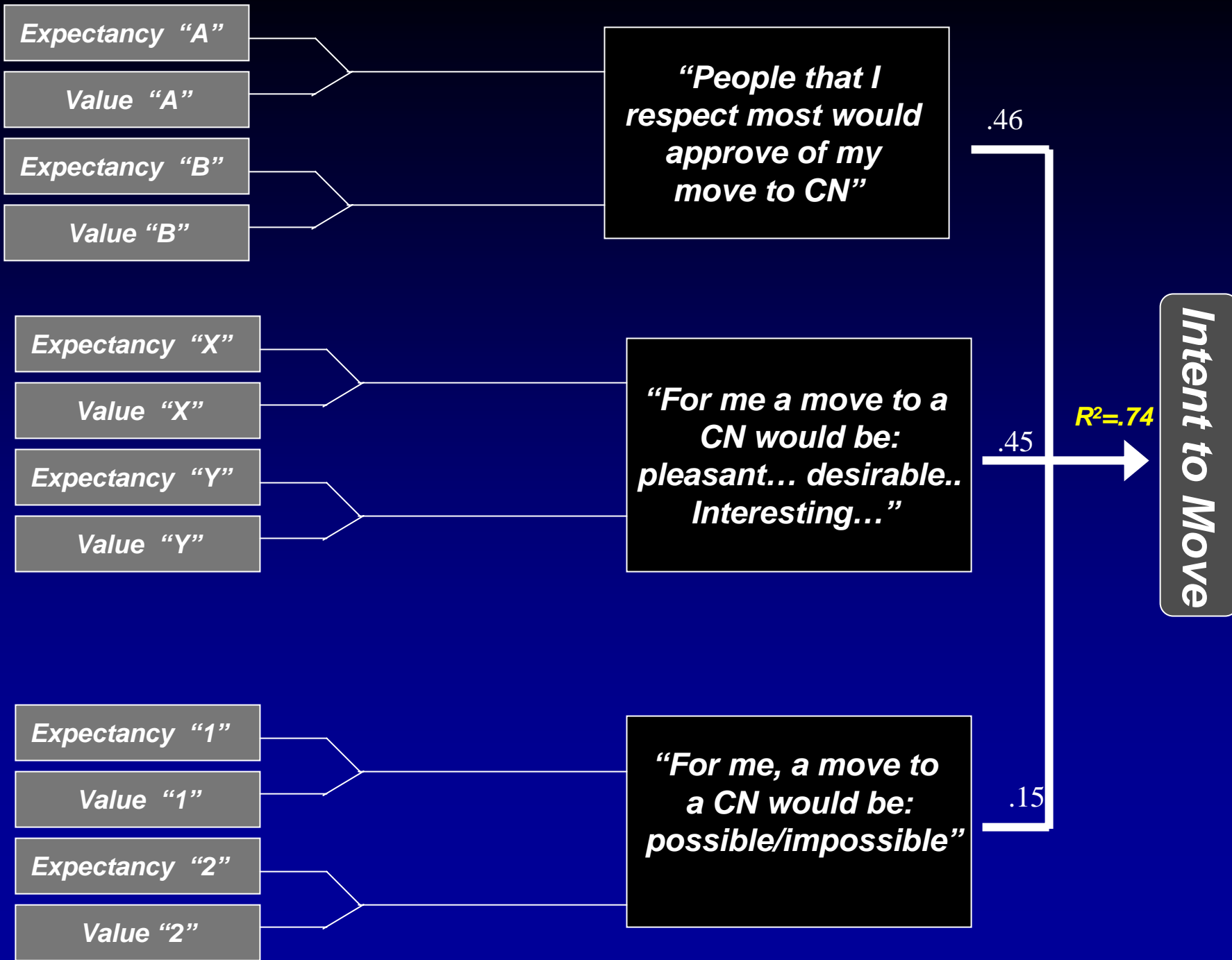
February 18, San Diego California

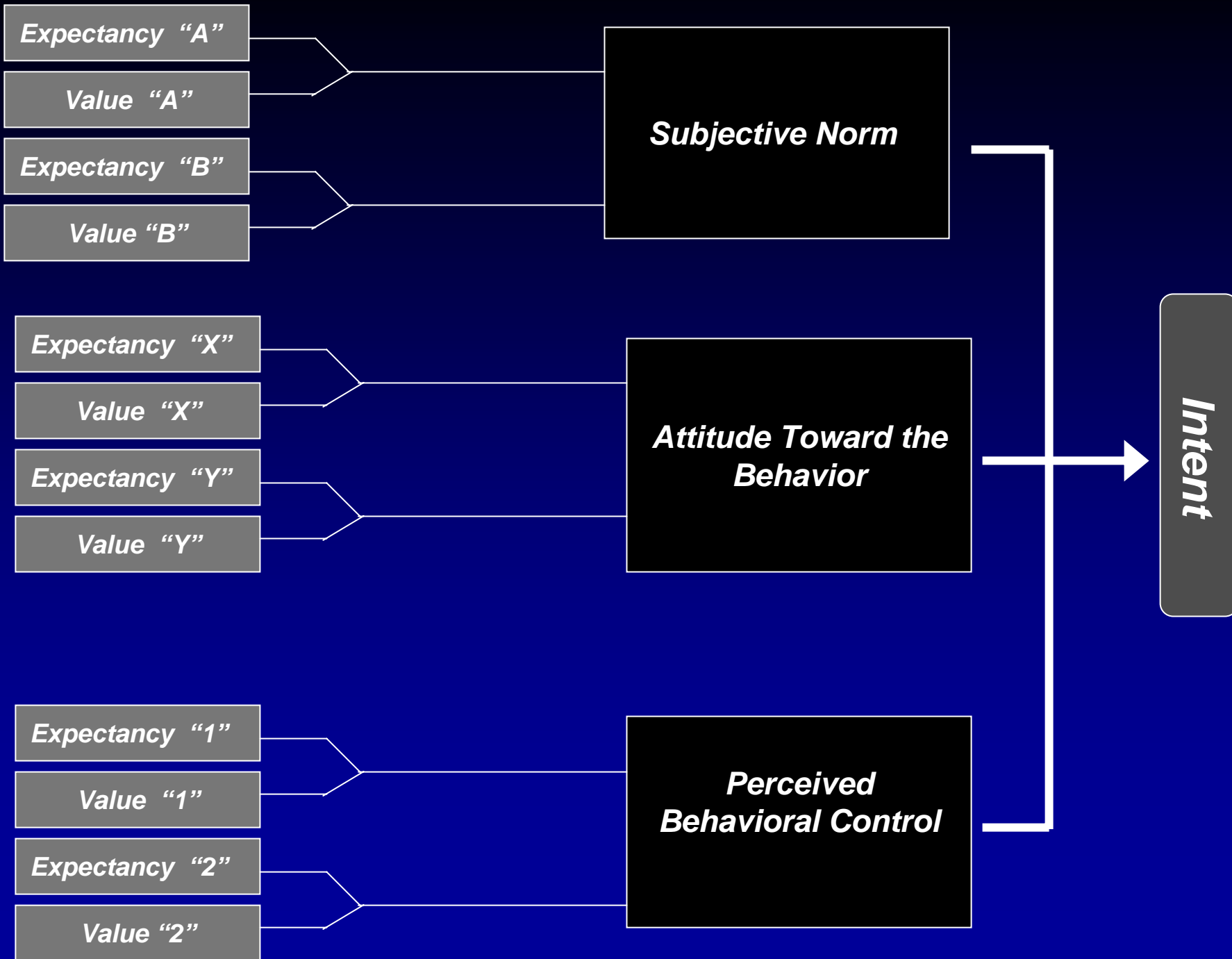
Understanding How Individuals Make Travel and Location Decisions: Implications for Public Transportation (TCRP H-31)

- The Research Team
 - TranSystems Corporation
 - Resource System Group
 - Matthew A. Coogan
 - Simon and Simon Research and Associates, Inc.
 - Susan A. Shaheen, Ph.D.
 - Battelle Memorial Institute
 - Professor Icek Aizen

Subjects

- Survey of 865 residents of metropolitan areas with public transportation who either had recently made a residential location, or were considering a residential location decision.
- Utilitarian walking was reported both in terms of mode share, and absolute numbers of trips
 - Non-utilitarian walking reported as number of minutes





A point of departure for developing a construct....

*My Urban and
Environmental Values*



My Built Environment



*Mode Share to
Walking*

A point of departure for developing a construct....

*Urban Values Scale:
15 Variables Rolled Up as
'High Group'- 'Low Group'*

```
graph LR; A["Urban Values Scale:  
15 Variables Rolled Up as  
'High Group'- 'Low Group'"] --> D["Mode Share to  
Walking"]; B["Compact Neighborhood?  
1. Transit  
2. Mixed Housing  
3. Commercial Area Near"] --> D;
```

*Compact Neighborhood?
1. Transit
2. Mixed Housing
3. Commercial Area Near*

*Mode Share to
Walking*

Four cell matrix applied to many trip categories

		<i>Green Mode Share Non-work</i>	
		<i>Green Mode Share All Trips</i>	
		<i>Walk Share Non Work</i>	
		<i>Walk Share All Trips</i>	
		<i>Low Urban Values</i>	<i>High Urban Values</i>
<i>Living in a Compact Neighborhood</i>		12.4%	29.0%
<i>Not living in a Compact Neighborhood</i>		5.7%	13.7%

Elements from the Theory of Planned Behavior

Ease of accomplishing the behavior



	<i>Walk Share All Trips</i>	
	<i>Low Urban Values</i>	<i>High Urban Values</i>
<i>Living in a Compact Neighborhood</i>	12.4%	29.0%
<i>Not living in a Compact Neighborhood</i>	5.7%	13.7%

Attitude towards the behavior...



Adding a Third Variable

<i>Walk Share All Trips</i>	
<i>Low Auto Availability</i>	22%
<i>High Auto Availability</i>	9%

Three variables create the eight cell matrix...

The Full Sample

Walk Mode Share =
13%

High Urban Values Group

19%

Low Urban Values Group

7%

High Urban Values
In a CN
29%

High Urban Values
Not in a CN
14%

Low Urban Values
In a CN
12%

Low Urban Values
Not in a CN
6%

High Values, CN
Low auto **34%**

High Values, CN
High auto **21%**

High Values, non-CN
Low auto **16%**

High Values, non-CN
High auto **12%**

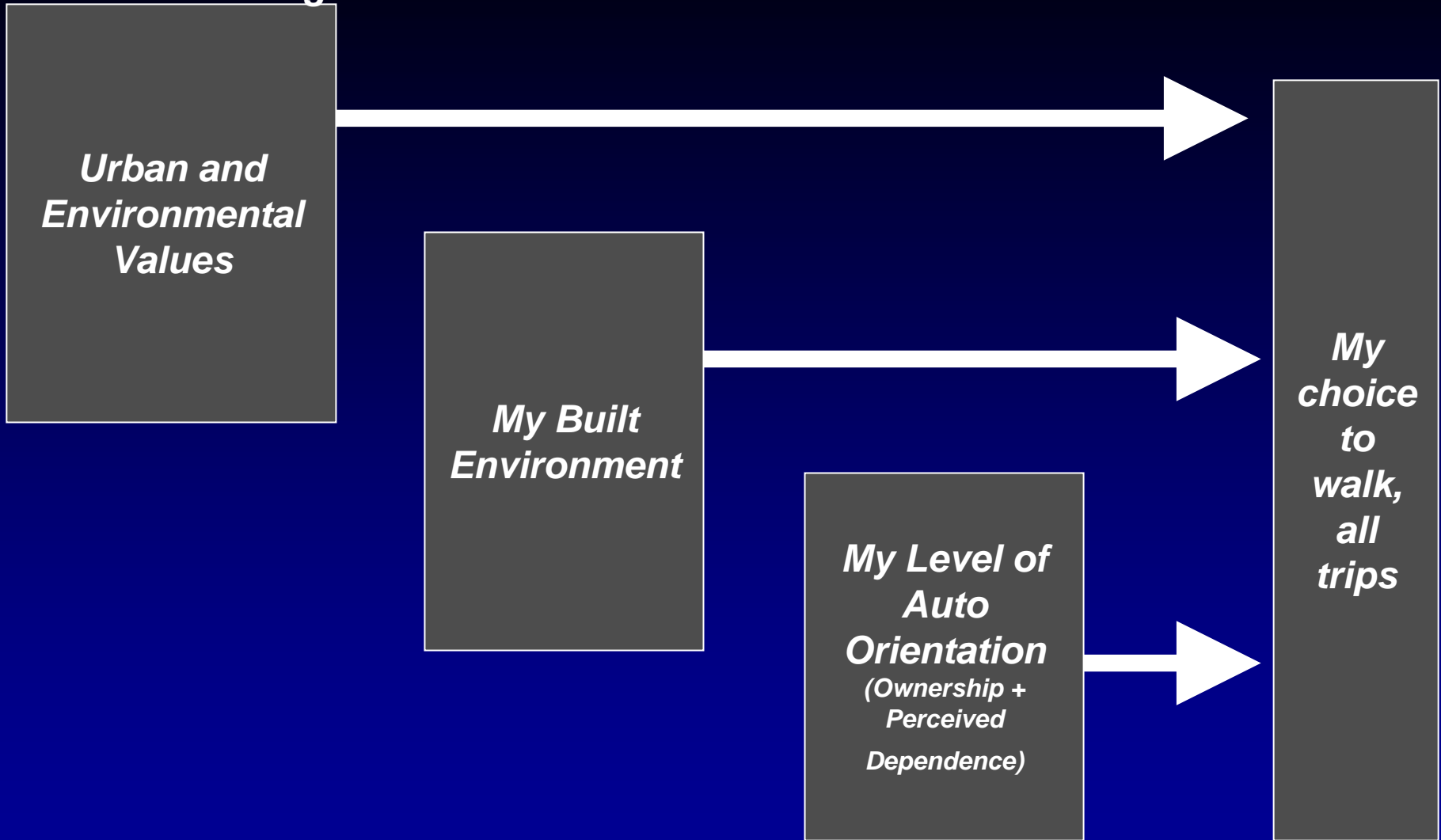
Low Values, CN
Low auto **29%**

Low Values, CN
High auto **7%**

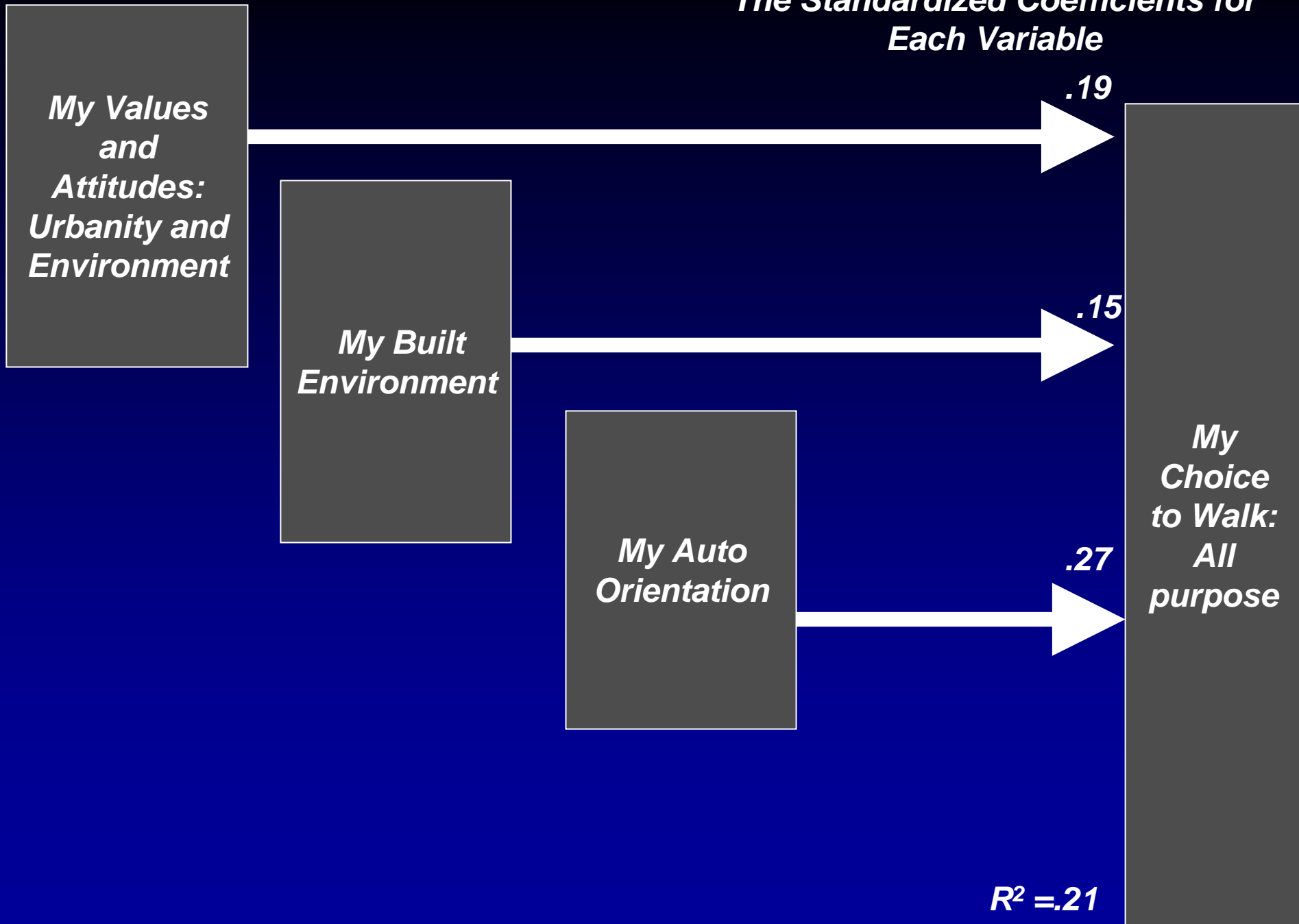
Low Values, non-CN
Low auto **9%**

Low Values, non-CN
High auto **5%**

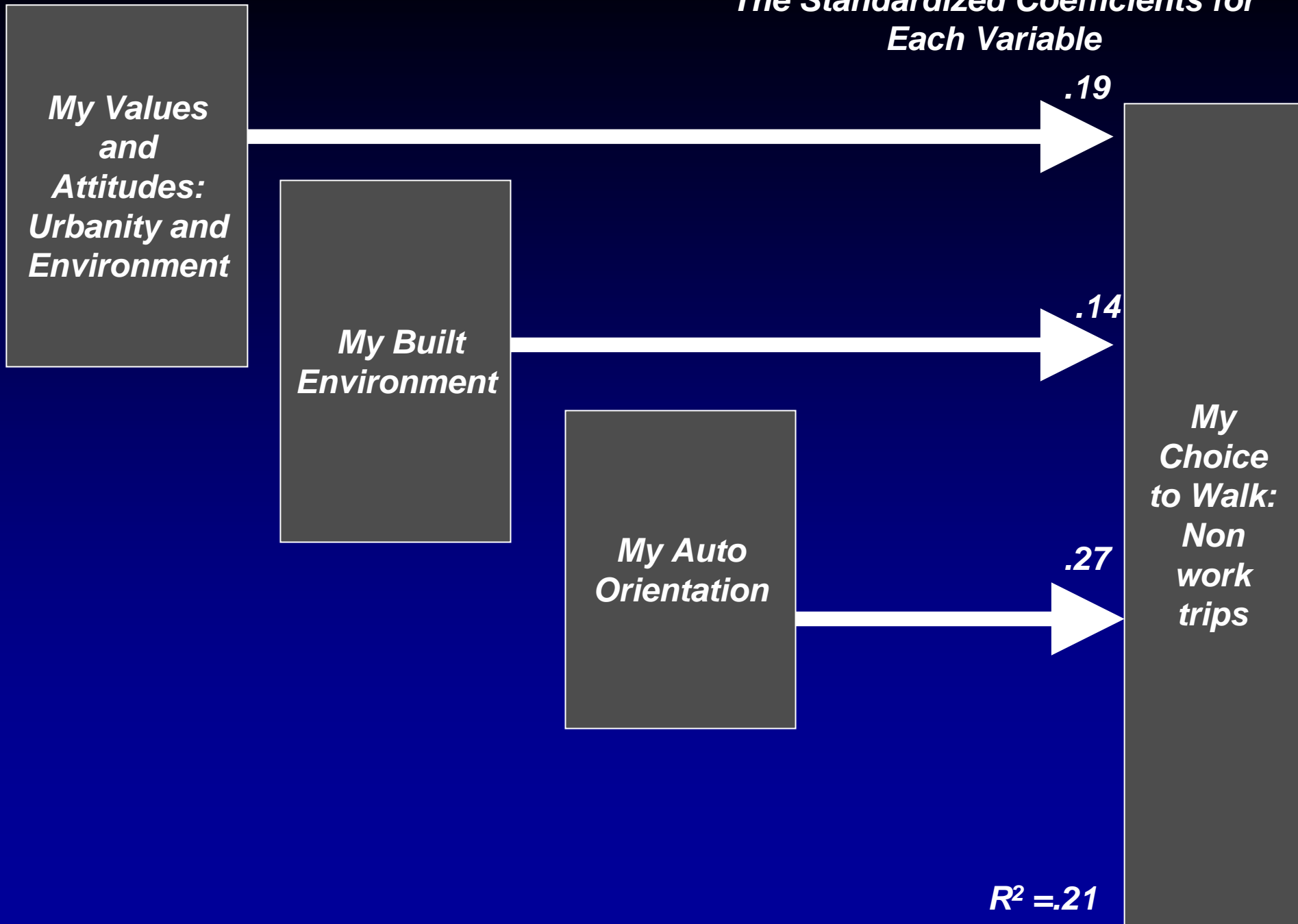
Building the new model from all variables.....



**The Standardized Coefficients for
Each Variable**



**The Standardized Coefficients for
Each Variable**



**My Values
and
Attitudes:
Urbanity and
Environment**

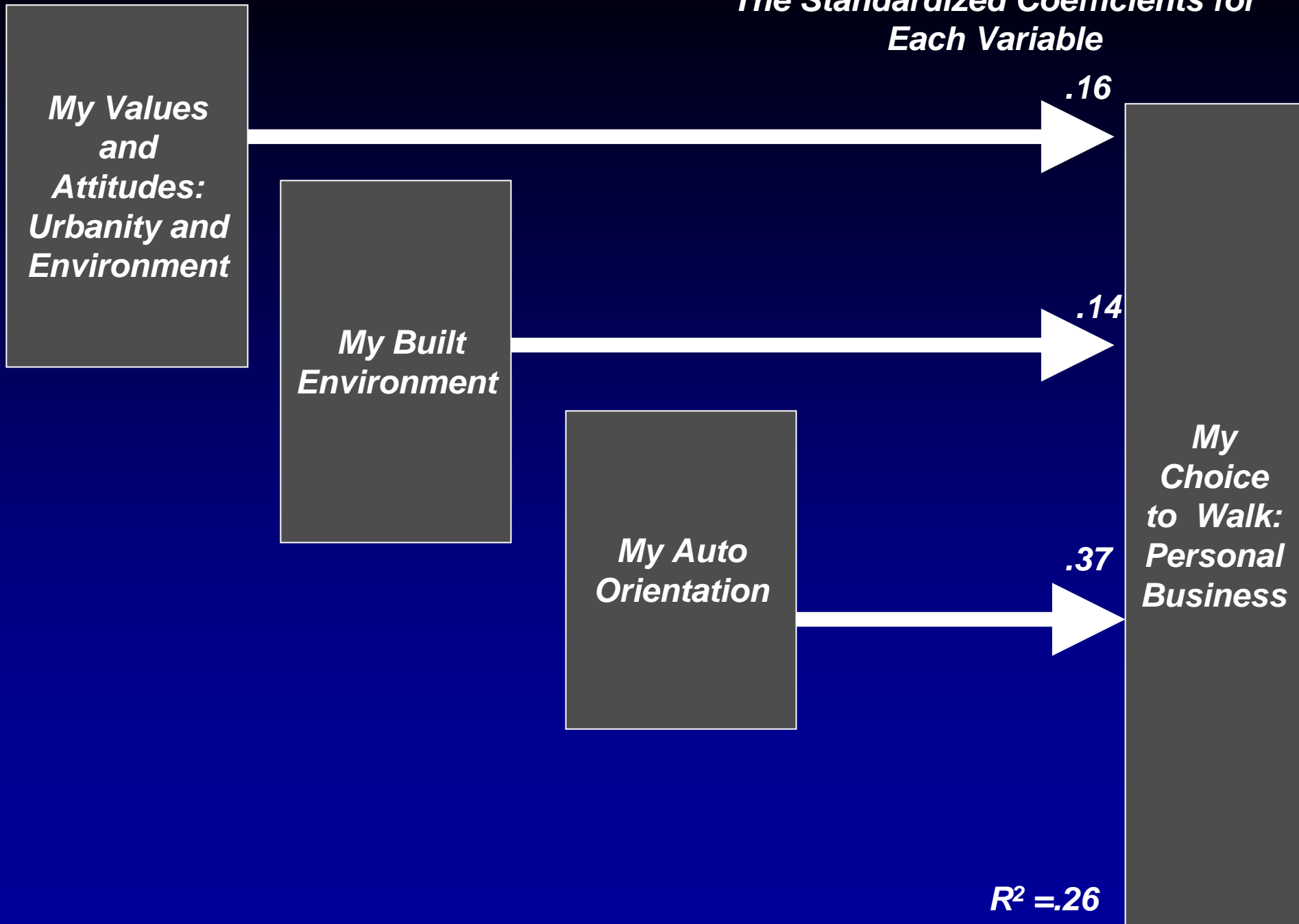
**My Built
Environment**

**My Auto
Orientation**

**My
Choice
to Walk:
Non
work
trips**

$R^2 = .21$

**The Standardized Coefficients for
Each Variable**



**My Values
and
Attitudes:
Urbanity and
Environment**

**My Built
Environment**

**My Auto
Orientation**

**My
Choice
to Walk:
Personal
Business**

R² = .26

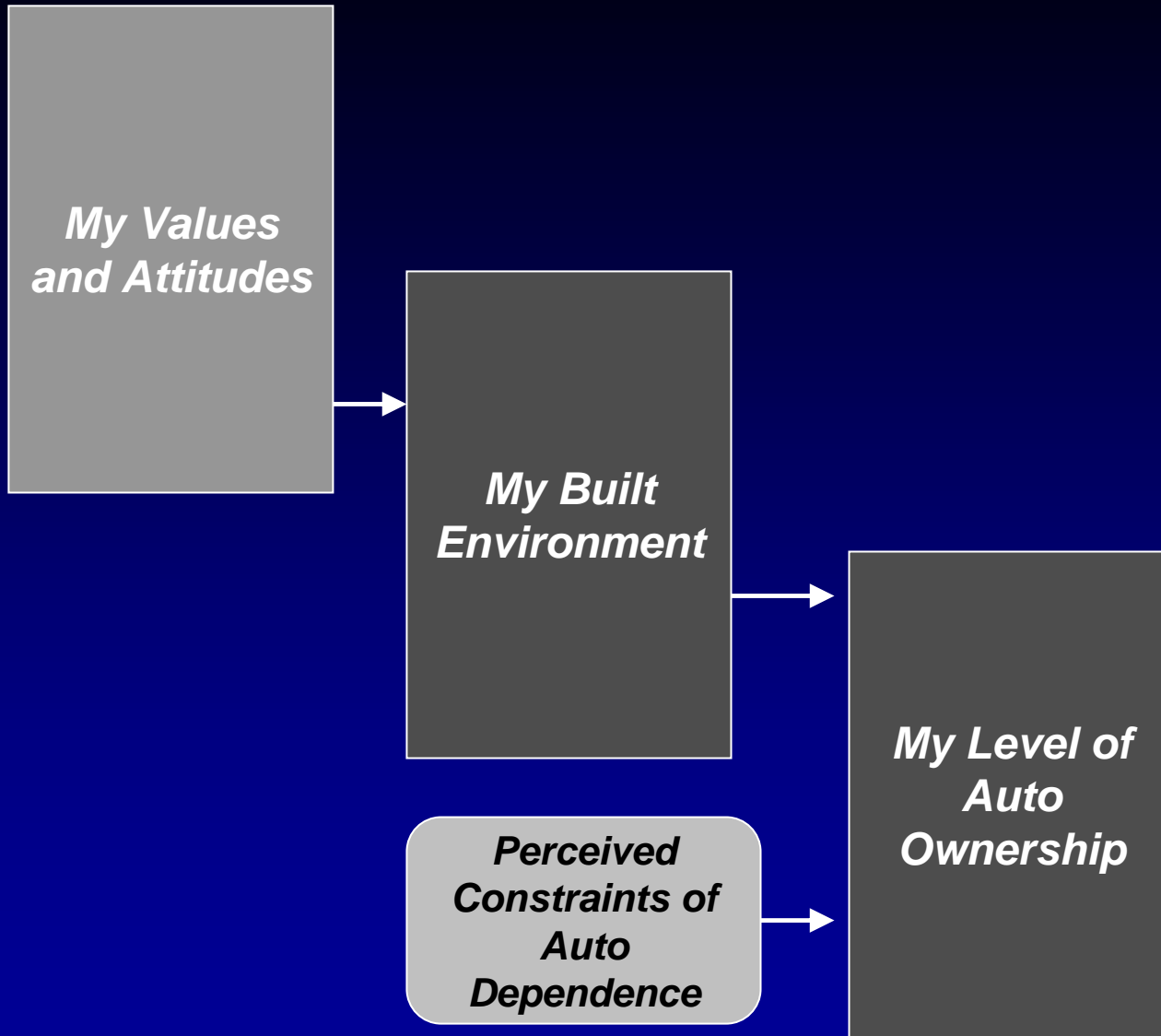
***My Values
and Attitudes***



***My Built
Environment***

***Perceived
Constraints in
Choice of
Neighborhood***





*My Values
and Attitudes*



*My Built
Environment*



*My Level of
Auto
Orientation
(Ownership +
Dependence)*

***My Values
and Attitudes***



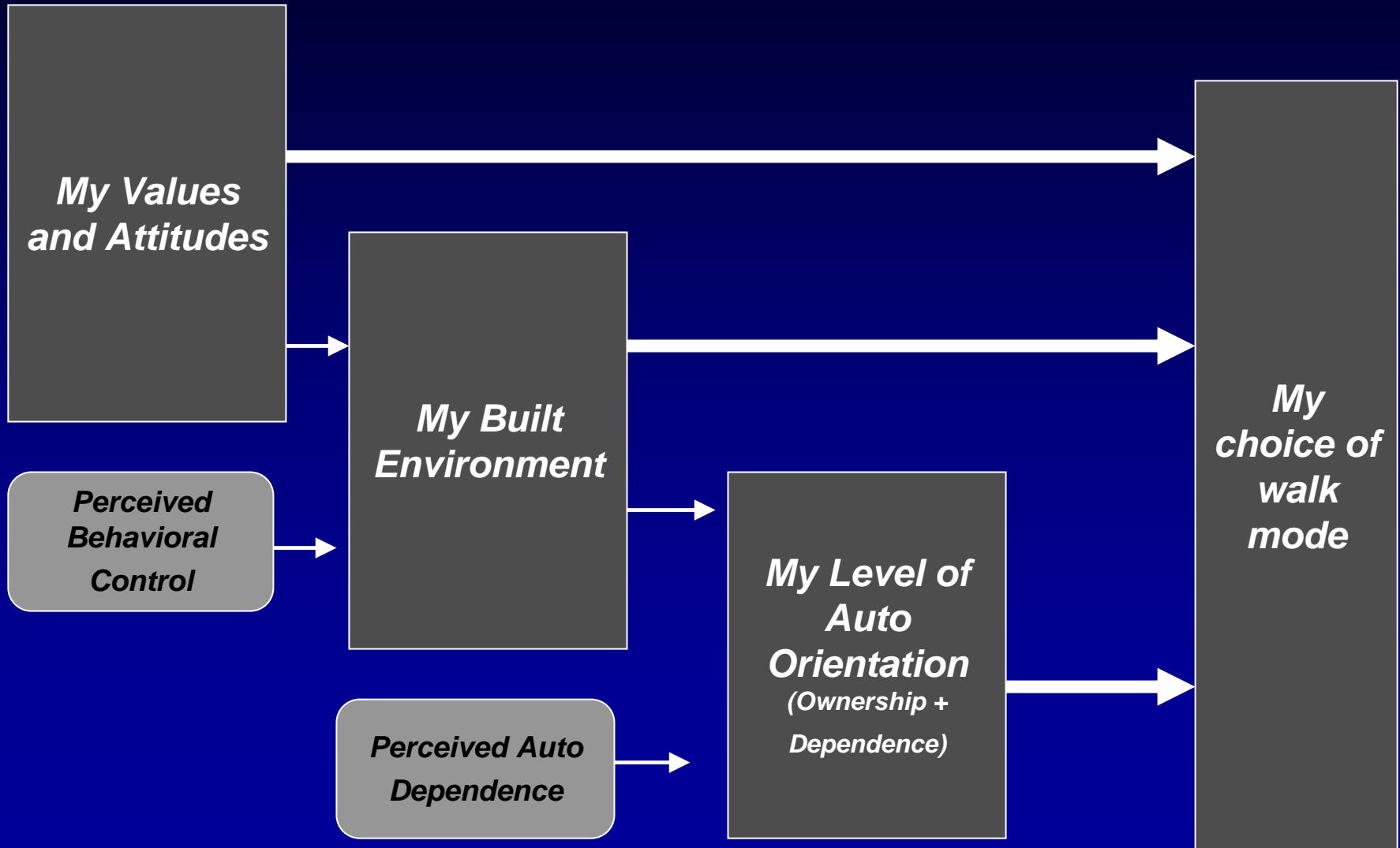
***My Built
Environment***



***My Level of
Auto
Orientation
(Ownership +
Dependence)***

***My
choice of
walk
mode***

Integrated Model of Location and Mode Choice



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