

The Interface Between Cognition, Skills Competence, and Everyday Functional Skills

Philip D. Harvey, PhD

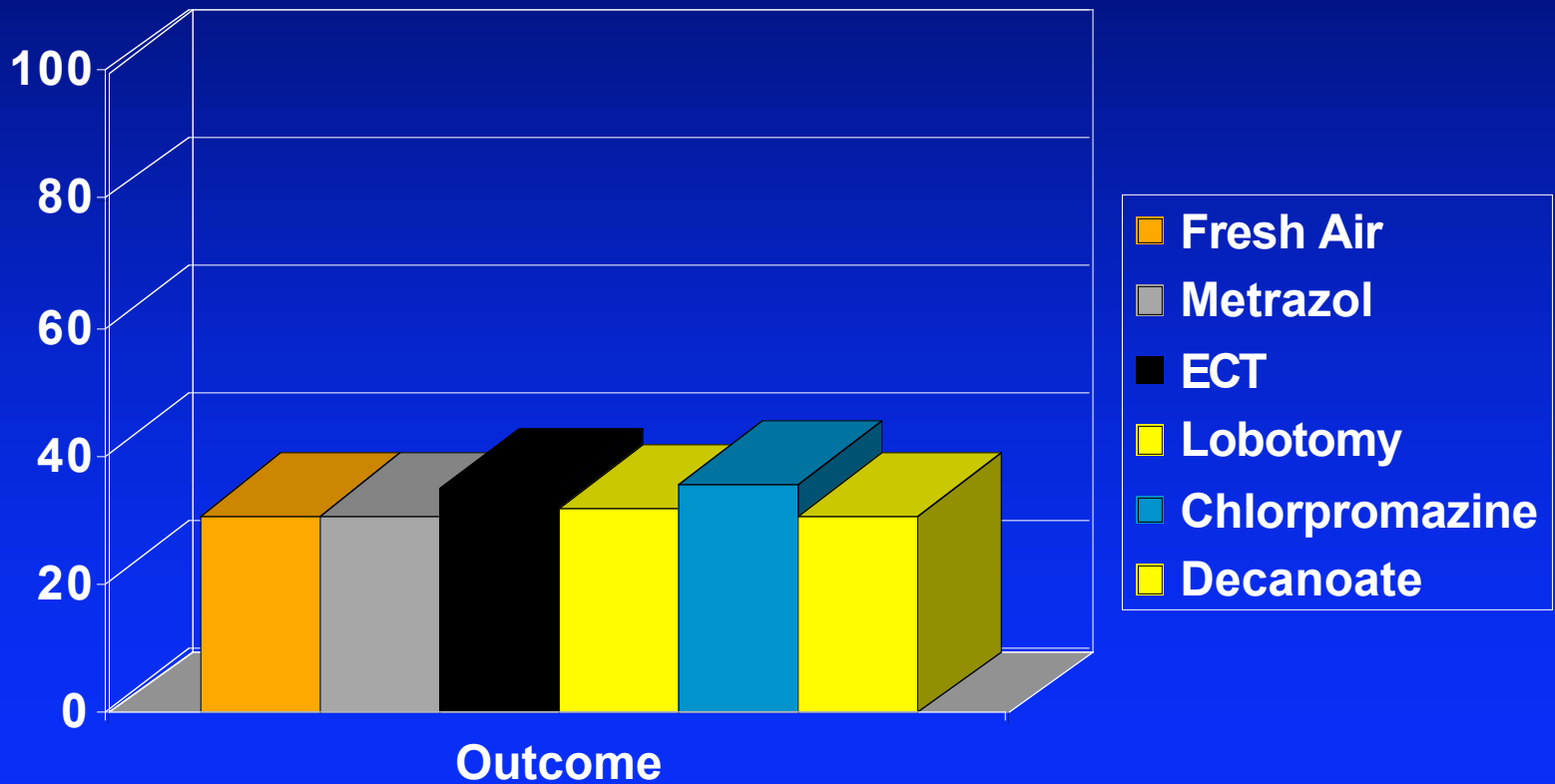
Mt. Sinai School of Medicine

Functional Outcome: The Gold standard

- Functional impairments in schizophrenia appear resistant to current pharmacological treatments
- Treating these impairments may have the potential to improve outcome.
- Before you can treat, you need a target

Functional Outcome and Treatments Offered

Percentage of Patients Living Independently



Data from Hegarty et al., 1994; Am J Psychiatry

The First episode paradox

- 90% of first episode patients experience remission at the end of one year of treatment
- At 5 year follow-up 8% had a job
- 80% had a relapse, of that 80%, most had a second relapse
- A good outcome depends on your definition of outcome

Assessment of Functional Status

- Objective Information
- Self-report
- Observation
- Performance-Based Assessments

Limitations of Assessment Domains

- Objective information
 - Availability; Relevance; low rate of occurrence
- Self-report
 - Bias; Cognitive limitations
- Observation
 - Situation-specificity of behavior
- Performance-based
 - Practicality; content validity

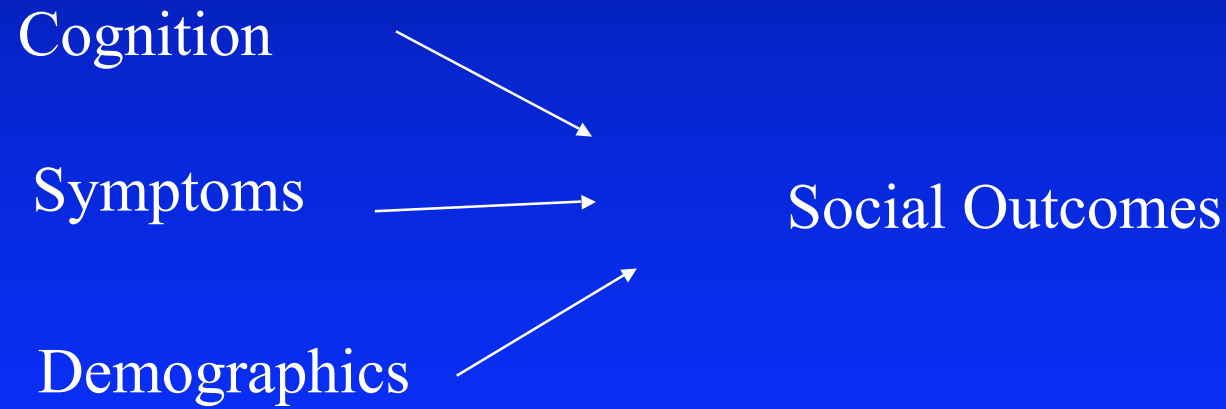
Previous Assessment Devices

- Specific Levels of Functioning
- Heinrich Carpenter QoL Scale
- Social-Behavior Schedule
- Social Adjustment Scale
- Direct Assessment of Functional Status
- UCSD Performance Skills Assessment
- Social Performance Skills Assessment
- Direct Observation of Medication Management

Where do you look?

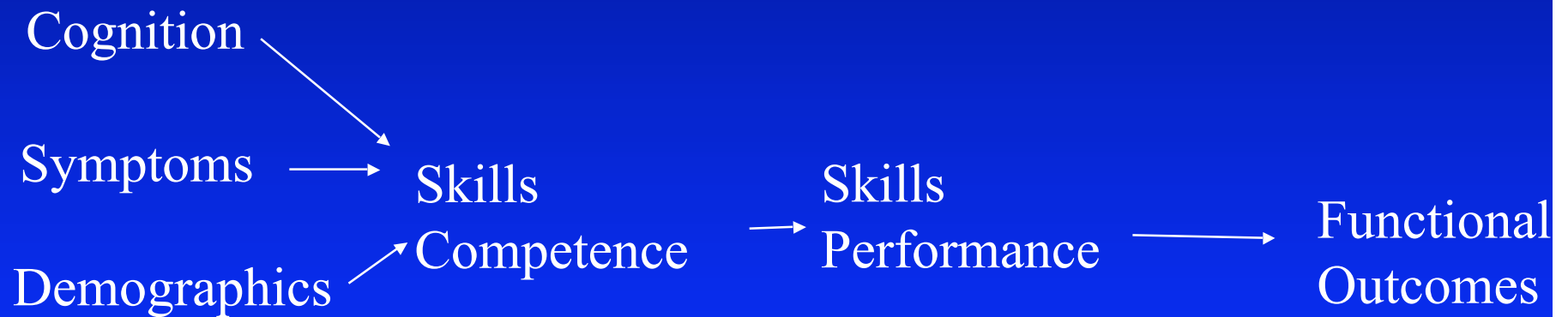
- For years behaviorally oriented therapists have appreciated the “competence-performance distinction”
 - Competence: Can I do it?
 - Performance: Do I do it?
- This is a critical distinction for attempting to enhance social outcomes by changing cognition

The Simplified Model



Note. This was the FDA's Model

The Advanced Simplified Model



This is the new FDA Model

Relationship of Competence and Performance

- In a practical sense, real-world outcomes are unrealistic targets for treatment studies
- Thus, competence measures may be most important as outcomes
- Can you change them?
- We hope so, the TURNS study is using them as outcomes measures

The Quartz Study

- Large sample size
- Comparison of the two most commonly used schizophrenia treatments
- Use of performance-based outcome measures

Cognitive Assessments

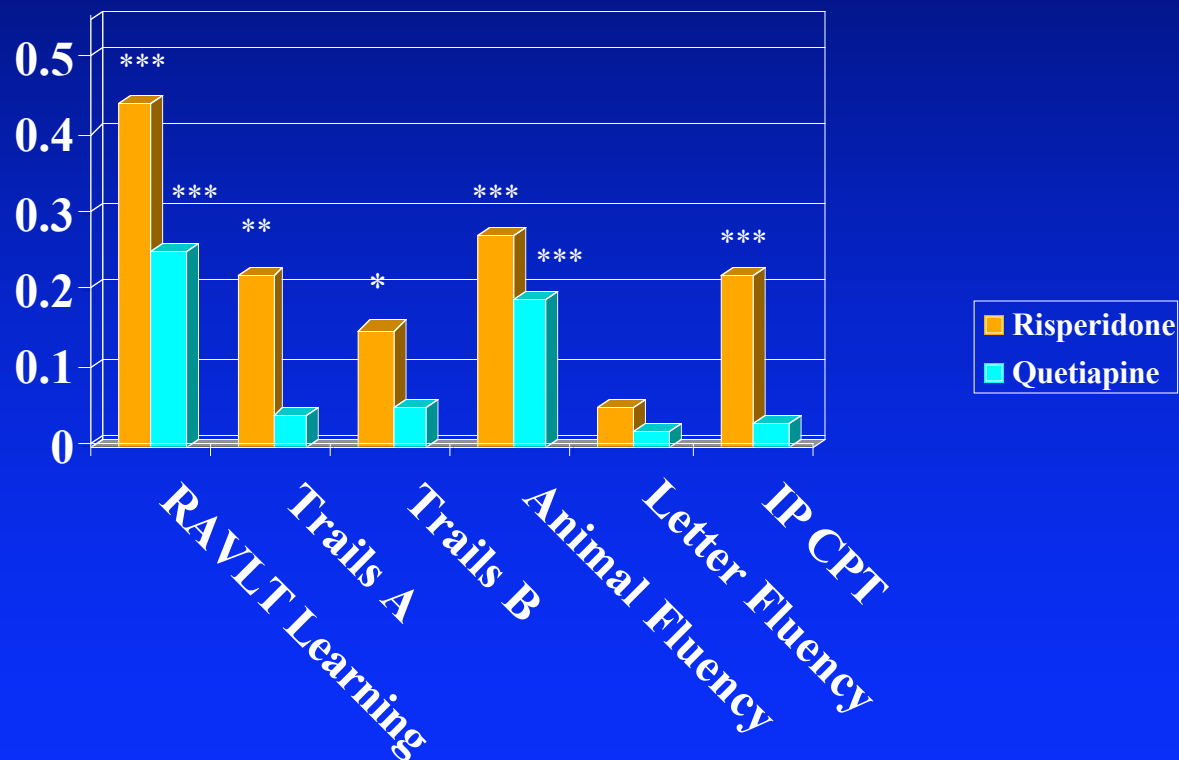
- Rey Auditory verbal learning test
- Continuous Performance Test
 - A-X Version
- Trail making test parts A and B
- Fluency Examination
 - Letter and Category
- PENN affect recognition test

Social Skills performance assessment (SSPA)

- Two role-played interactions
 - Meeting a neighbor
 - Requesting attention from a landlord
- Scored on 1-5 point scale
- Cases with perfect baseline scores are excluded from the analysis
- Interaction audio taped, sent to UCSD for blind ratings

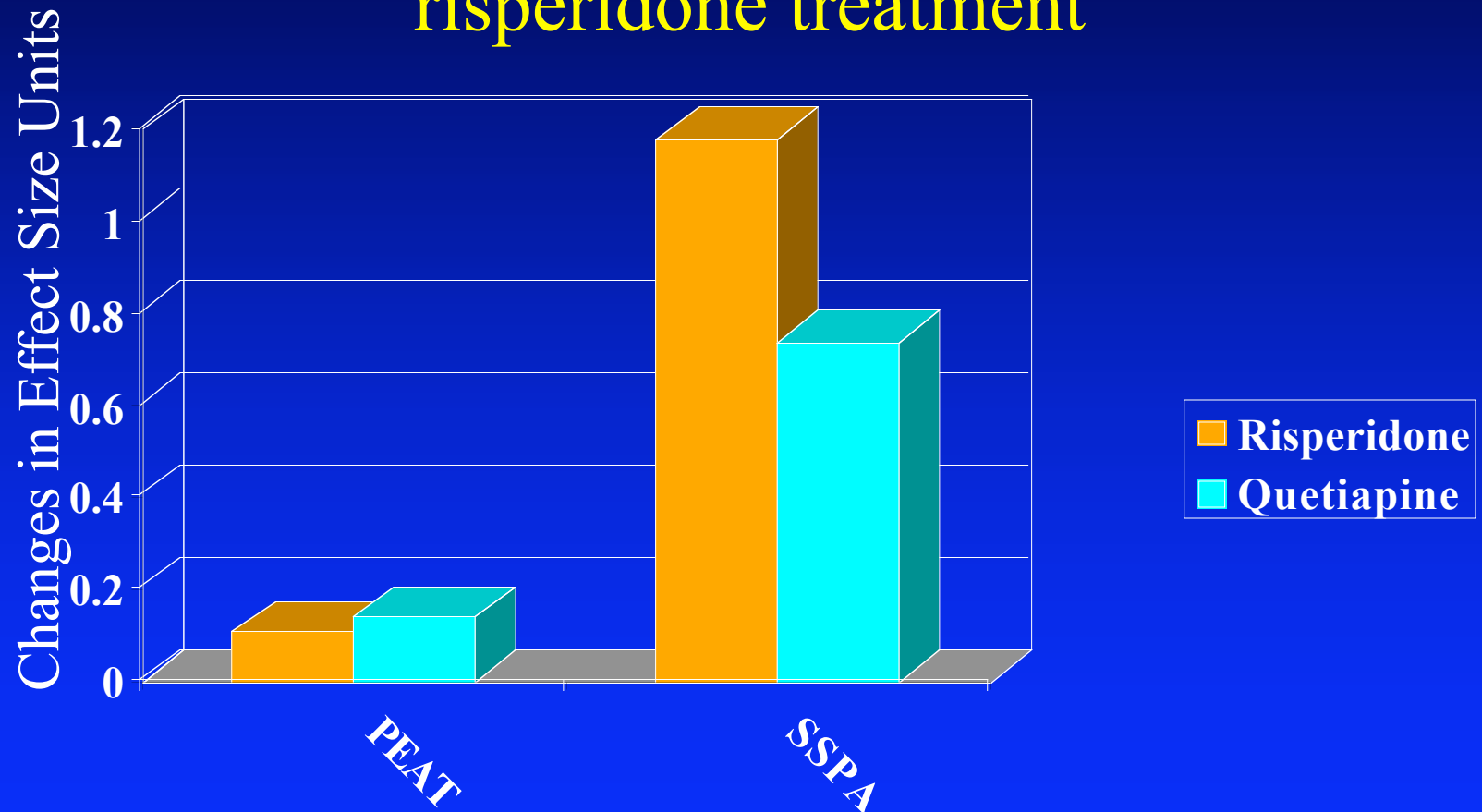
Improvements in Cognition Associated with quetiapine and risperidone treatment

Changes in Effect Size Units



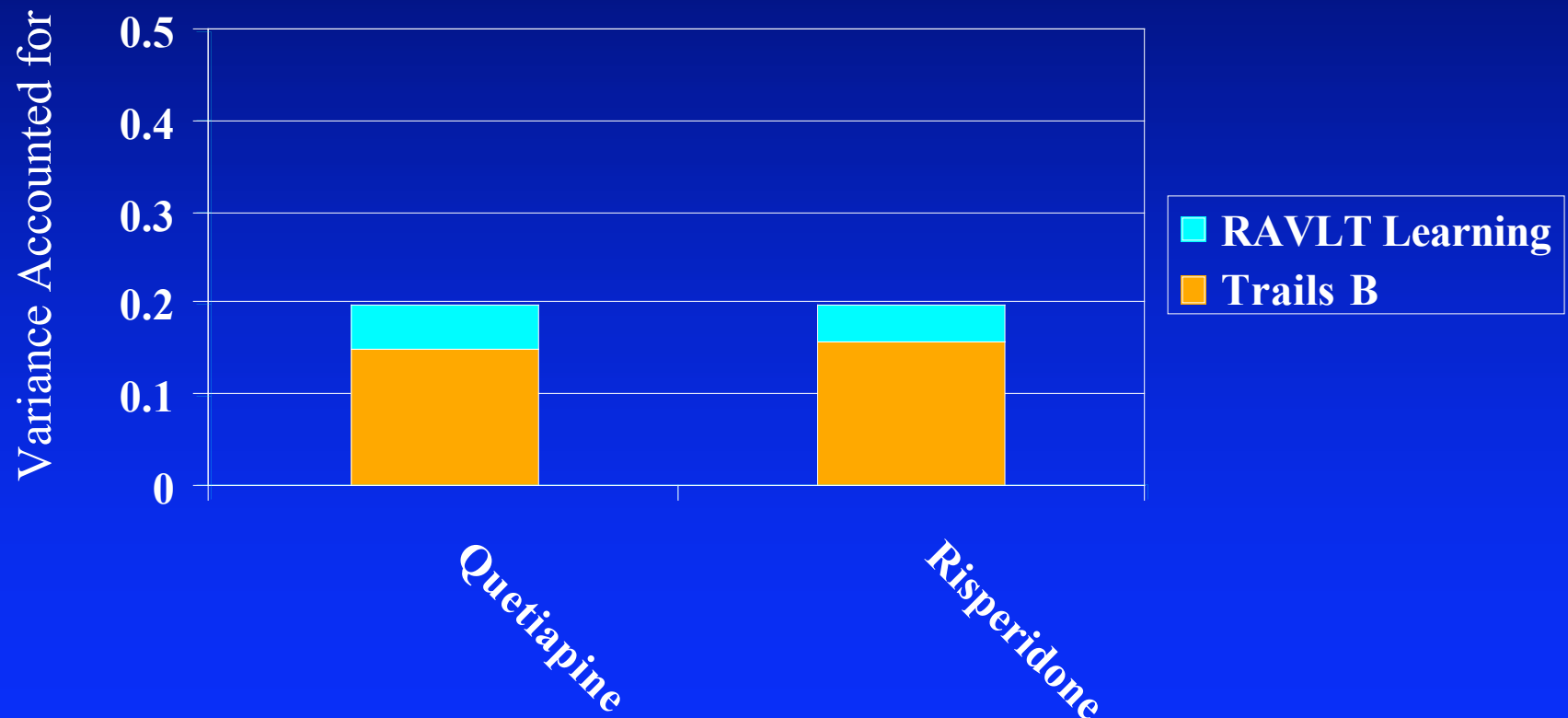
Note. Change from baseline: * $p < .05$; ** $p < .01$; *** $p < .001$

Improvements in Social Cognition and Social competence associated with quetiapine and risperidone treatment



Note. Changes on the SSPA are significant at $p < .001$

Variance in SSPA changes accounted for by cognitive changes



Note. Both regressions were significant at $p < .05$

Real-World outcome: A moving Target

- Looks good so far, but there is a wrench in the works
- Real world outcome may not be so real after all
- Very different correlations have been found between measures of real world outcome and functional capacity

Three Studies of Cognition, Functional Capacity, and Real World Outcome

- Bowie et al., in press
- Keefe et al., in press
- The PASS study

Commonalities

- All used the UCSD Performance Based assessment scales
- All assessed cognition
- All examined real-world outcomes

Discrepancies

- Different assessments of cognition
 - Bowie et al : Comprehensive NP assessment
 - Keefe et al: Brief Assessment of Cognition (BACS)
 - PASS: MATRICS Battery

Discrepancies

- Different Assessments of Real-World Outcome
 - Bowie et al: SLOF
 - Keefe et al: ILSI
 - PASS: Birchwood

What is consistent across studies?

- UPSA is correlated to cognition
 - Bowie et al: $r=.60$
 - Keefe et al: $r=.65$
 - PASS: $r=.61$

Thus, the correlation among the performance-based measures is remarkably consistent

Where are the wobbles?

- Correlation of cognition and real-world outcome
 - Bowie et al., $r=.42$
 - Keefe et al., $r=.42$
 - PASS $r=.31$
- Correlation of functional capacity and real-world outcome
 - Bowie et al., $r=.48$
 - Keefe et al., $r=.40$
 - PASS $r=.23$

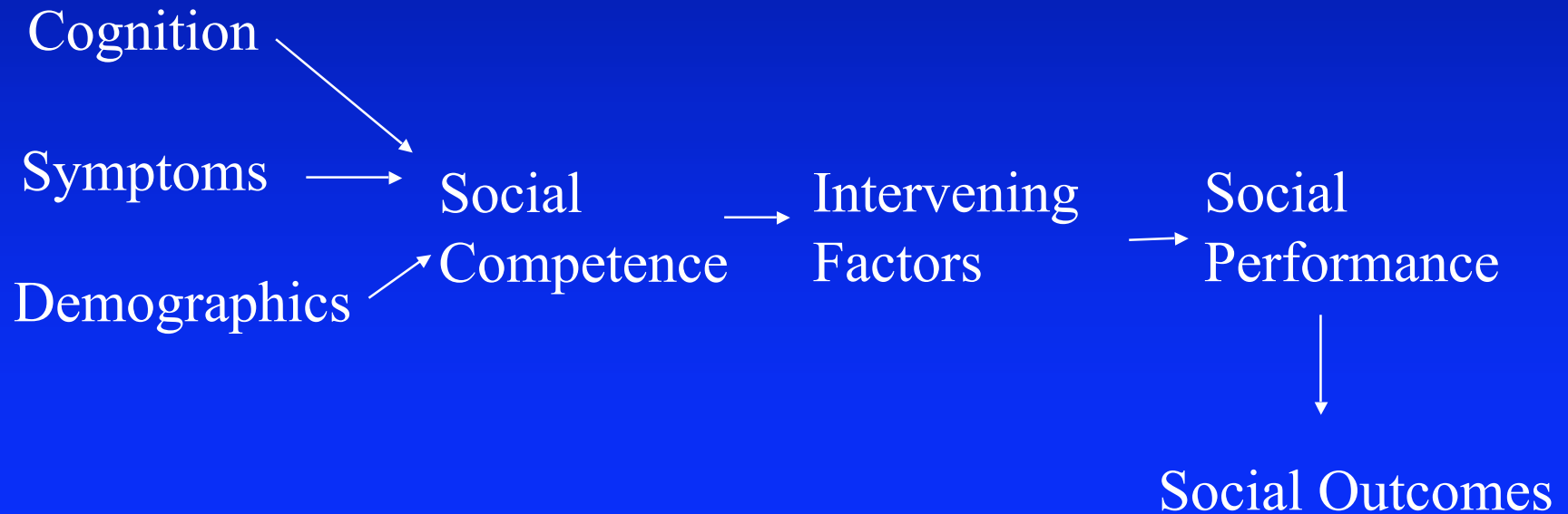
Real world outcome is not a real thing

- The UPSA cognition correlation is very consistent
- The correlates of real-world measures are very wobbly
- There are considerable differences in correlation patterns as a function of which “real world” measure you use

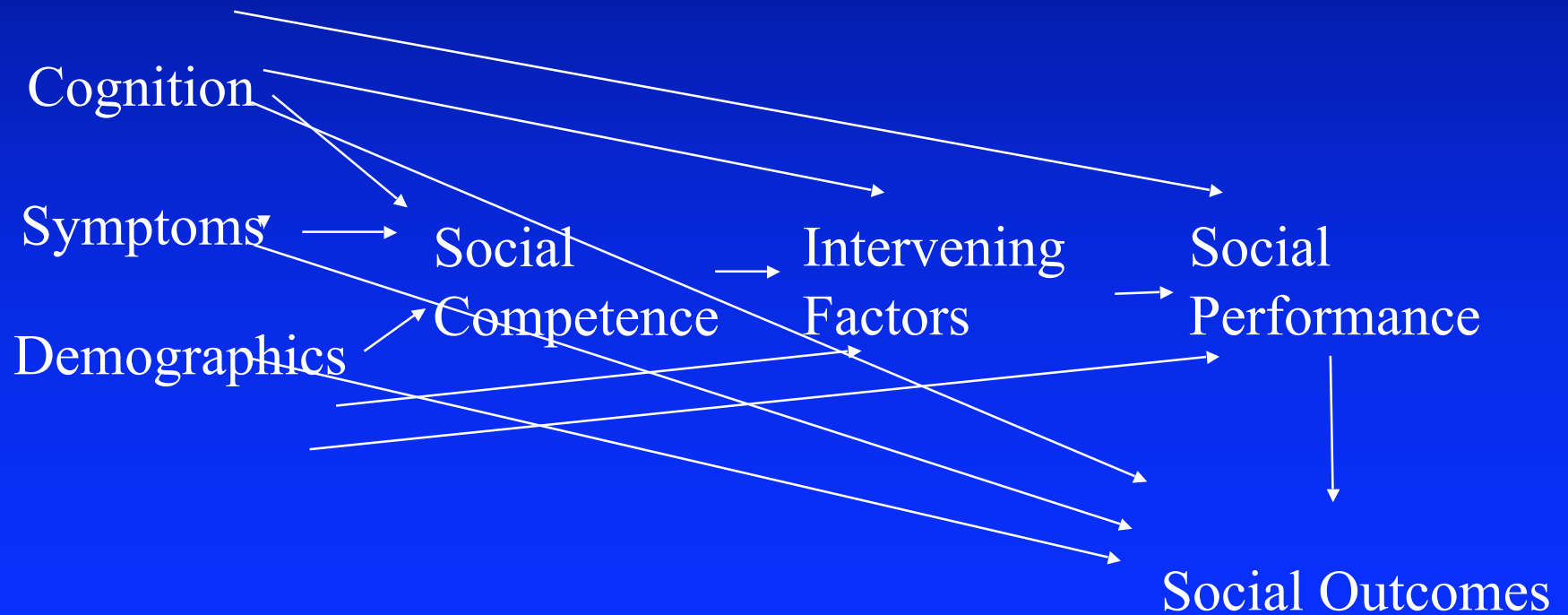
It can be worse, however

- It gets worse if you ask the patient: McKibbin et al. found the correlation between two performance based measures, NP performance and the UPSA, were uncorrelated with subjective reports of disability or QoL
- The correlation between patient reported QoL and disability was $r=.65$.
- Thus, the patients give internally consistent reports, they are just not correlated with any objective measures

The More Advanced Model



The More Realistic, but still simplistic, Model



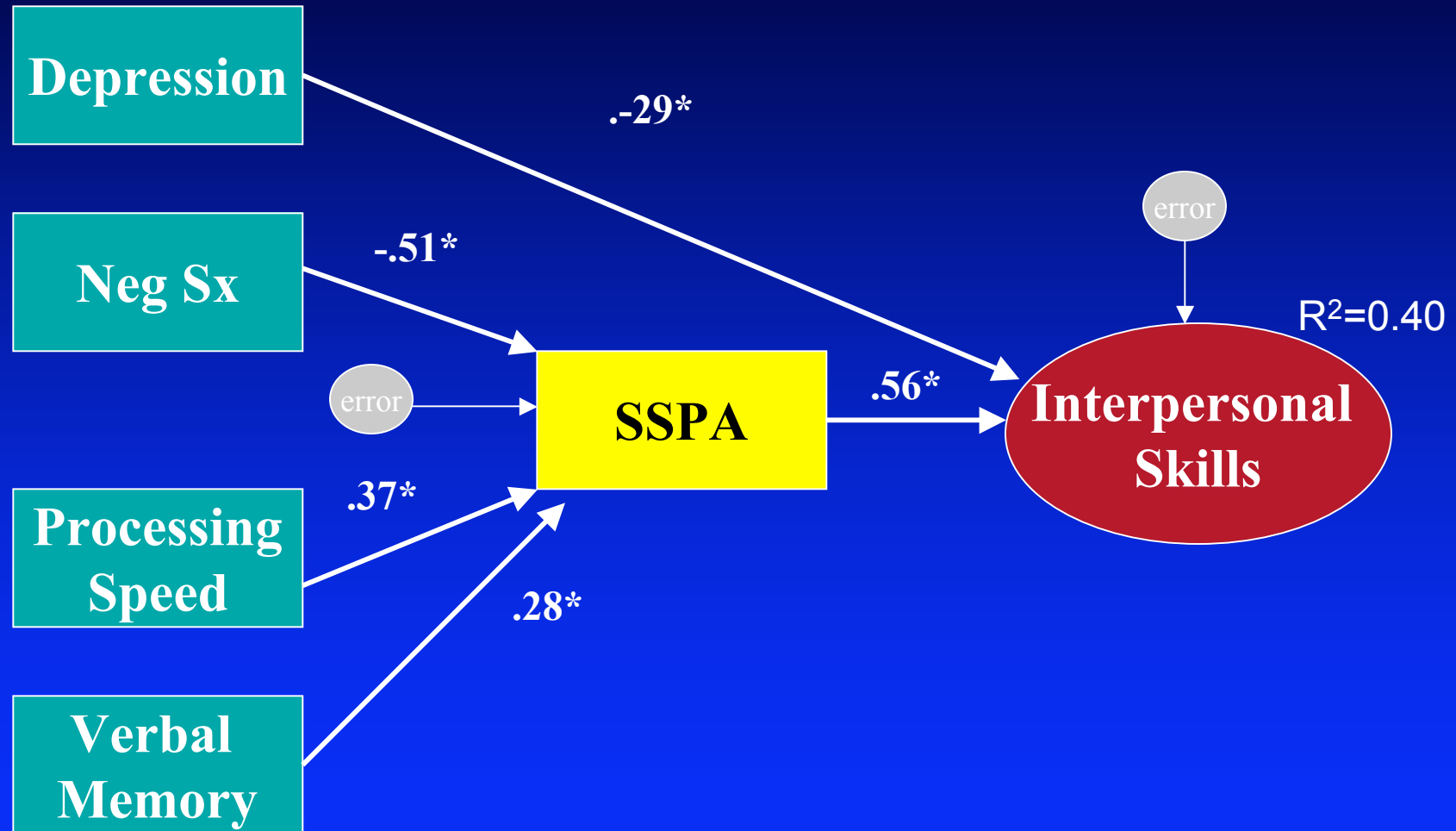
Intervening Factors (limited set)

- Personal resources
- Insight
- Metacognitive skills
- Familial resources
- Source of income
- Source of insurance
- Support
- Values
- Motivation
- History
- Cultural factors

NP performance, functional capacity, and functional outcome

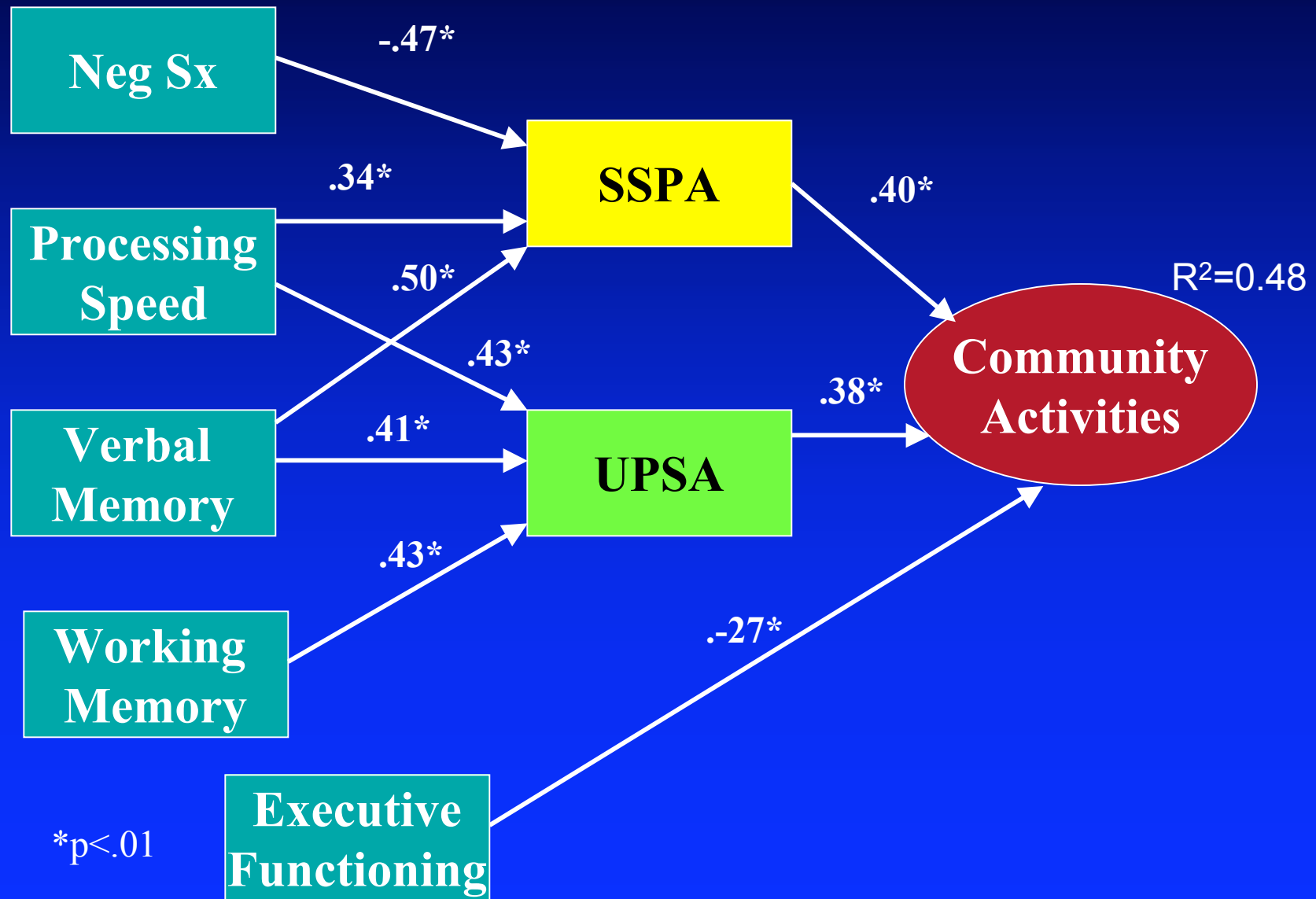
- Comprehensive NP assessment
- Assessment with UPSA and SSPA
- Informant based, real world functional ratings
- PANSS
- BDI
- 125 Older ambulatory patients
- Confirmatory path analysis
- Question: If you have a performance based measure of functional capacity, is there anything else you need to know?

Prediction of Interpersonal Skills



* $p < .01$

Prediction of Community Activities



Prediction of Work Skills

