

Conceptual and Methodological Challenges with Interpersonal Skills Assessment

Stephen M. Fiore
University of Central Florida



Fiore, S. M. (2011). Conceptual and Methodological Challenges with Interpersonal Skills Assessment. Presented at the National Academies of Science Workshop on "Assessment of 21st Century Skills", May 4th, 2011, Washington, DC.

Presentation Overview

- What are “Interpersonal Skills”?
- How are Interpersonal Skills Assessed?
 - Situational Judgment Tests
 - Assessment Centers
 - Scenario Based Learning
 - Portfolio Assessment
- What is Missing in Interpersonal Skills Assessment?
- The Next Frontier of Interpersonal Skills Assessment?

"21st Century Interpersonal Skills"

Conceptualizing 21st Century Skills

- Interpersonal Skills have long been promoted by industry
- Proliferation of concepts associated with interpersonal skills
 - May find that different labels describe the same skill or the same label describes different skills

□ **Commonly Used Labels** (Ferris, Witt, & Hochwarter, 2001; Hochwarter et al., 2006; Klein et al., 2006; Riggio, 1986; Schneider, Ackerman, & Kanfer, 1996; Sherer et al., 1982; Sternberg, 1985; Thorndike, 1920)

- | | |
|---------------------|------------------------|
| ■ Social Skills | ■ Soft Skills |
| ■ Social Competence | ■ Social Self-efficacy |
| ■ People Skills | ■ Social Intelligence |

Although notion of interpersonal skills is not "new", the lack of conceptual clarity with 21st Century Skills is deeply problematic at theoretical, methodological, and practical level.

"21st Century Interpersonal Skills"

- **Attitudinal, Behavioral, and Cognitive Components in IPS**
 - Social perception and social cognition involving processes such as attention, and decoding in interpersonal situations.
 - ***A form of social intelligence***
 - knowledge of social customs, expectations, and problem solving (McDonald, Flanagan, Rollins, & Kinch, 2003, p. 220).
 - rests on "ability to understand" behaviors, cognitions, and *attitudes* of individuals (including oneself) and to translate understanding into appropriate behavior in social situations (Marlowe, 1986, p. 52).
 - Involves continuous correction of social performance based on reactions of others during social exchanges (Argyle, 1979).
- **IPS are a complex combination of "goal-directed behaviors" employed during interaction with some "other"**
 - **Characterized by perceptual and cognitive processes**
 - **Involves dynamic verbal and nonverbal interaction**

Assessing IPS

Situational Judgment Tests



- Selection instruments which present applicants with work-related situations and possible responses
- SJT “Response Option”
 - Multiple choice responses (“how would you respond”; choose best/worst option)
 - Constructed response (written or spoken)

■ Formats

- Paper and Pencil
- Computer with Animations or Video

Challenges

- SJT “Perspective” - ask about the “situation” and about their response
- Knowledge response produces better predictive validity and less impact of faking

The screenshot displays a digital interface for a Situational Judgment Test. It is divided into two main sections: "Step 1: Scenario" and "Step 2: Choose".

Step 1: Scenario includes a text description of a customer's complaint and a video player showing a customer service interaction. Below the video, it instructs the user to "Watch the following video and choose the most and least effective course of action from the options below."

Step 2: Choose presents four response options, each with two radio buttons for selection: "Most Effective" and "Least Effective".

Response Option	Most Effective	Least Effective
State that it is likely a problem that is specific to that brand of phone and ask if he would be interested in trying a different brand.	<input type="radio"/>	<input type="radio"/>
Agree to return the phone for the customer, but while you process the return, engage in small talk to build rapport and potentially get him to look at other phones.	<input type="radio"/>	<input type="radio"/>
Return the phone for the customer and apologize for any inconvenience.	<input type="radio"/>	<input checked="" type="radio"/>
Ask him whether he would consider taking home a new phone (same model) and see if he continues to have the same issue.	<input type="radio"/>	<input type="radio"/>

A "Next" button is located at the bottom right of the interface.

Assessing IPS

Assessment Center Simulations



- Participants engage in fairly complex job-related simulation
 - Assumes some role (e.g., supervisor, customer service) and simulation designed to reflect "day in the life"
 - Background materials provided to orient participant to role
- Faced with a series of inter-related, yet distinct, problems and interactions throughout the course of simulation
- Raters used for evaluation
 - Behaviors rated
 - Written communications rated

Challenges

- Expensive and complicated to coordinate assessors

A screenshot of a web-based email interface. The browser window title is "E-evaluation™ - Program - Windows Internet Explorer" and the address bar shows "https://assess.fenestrainc.net/candidate/". The page title is "Verizon Leadership Skills Assessment" with a login for "Matt Dreyer" and a "Sign Out" link. On the left is a navigation menu with "Mail" selected, and sub-items for "New Mail Message", "Inbox", "Sent Items", and "Deleted Items". The main area shows "My Inbox" with a table of emails. The selected email is "Adjustment to Sales Incentives" from "romar.routh@cpxcom.com [Romar Routh, SVP, Sales]" received on "Mar 13 2008 3:02AM". Below the table are buttons for "Print", "Reply", "Reply to All", "Forward", and "Delete". The email content shows "From: romar.routh@cpxcom.com [Romar Routh, SVP, Sales]", "To: Matt.Dreyer@cpxcom.com; [CAPAX Global Distribution List]", and "Received: 3/13/2008 3:02:00 AM". The body text starts with "Sales incentives are based on the projected annual revenue for products and services sold to a new or existing account. Monthly sales goals were set for each team just over 6 months ago. At that time all Sales Teams were told that there would be extra incentives for sales of FON™ and CPTV."

Assessing IPS

Scenario Based Learning and Assessment



Workplace problems with some complexity

- Students introduced to problem (e.g., online letters from a manager)
- Students work in teams, collaborating on how to approach a complex problem, delegate tasks, and learn “on the fly”
- Instructor plays role of workplace manager (conducts team check-ins)

Assessment Rubrics for Instructors

- Technical skills
 - Research and analysis
 - Using tools
- Social skills
 - Information sharing
- Social-technical skills
 - Listening to client needs
 - Communicating ideas to client
- **Challenge assessing reliability and validity given variations in implementation - Evaluation of Method Mixed**

Belland et al. (2009). Validity and Problem-Based Learning Research... *Interdisciplinary Journal of Problem-based Learning*

QuickSoft Associates-- Ajax

1.3: Two Features Fully Implemented

Overview Requirements Resources Dobrief

From	Project Manager
Subject	Deliverable 3

I'm glad to see that most of you have implemented one feature. Our client is impressed with the quick results, and it is very helpful for marketing to have something concrete to show them.

In fact, our clients are so impressed that they have offered a bonus of \$1000 per team. You will each be able to divide up this \$1000 between team members in whatever way you feel is fair. When you submit the fourth and final deliverable as a group, you will each (individually, and privately) also submit a note telling me how you think the bonus should be divided up between your group's members.

For the meeting next week, you need to fully implement another feature. Again, the screen layout doesn't have to be real pretty because we'll put the graphic designers on it later. Please just make it easy to read.

Again, please post questions and post your deliverable to the website.

Assessing IPS Portfolio Assessments



- **Performance-based assessment (problem-solving scenarios, projects)**
 - Structured collection of student work documenting application of knowledge and skill in a variety of authentic contexts.
 - **Work Samples**
 - Demonstrates mastery of, for example, “Technology Literacy” (CAD; Databases)
 - **Writing Sample**
 - Demonstrates ability to reach conclusion based on writing and analytical reasoning
 - **Interpersonal Skills Evaluation**
 - Teamwork and leadership – done by supervisor or teacher or peers after a project

Challenges

- Portfolio models difficult to sustain/scale (e.g., expensive to administer and score)
- Requires significant professional development for teachers
- Portfolios not viewed as rigorous

Assessing IPS Summary



Notional Comparison Across Methods

	Situational Judgment Tests	Assessment Centers	Scenario Based Learning	Portfolio Assessment
Context	Testing	Testing	Embedded	Embedded
Reliability/Validity	Strong	Strong	Variable	Variable
Item Sampling – <i>how many IPS are assessed</i>	Shallow but Broad	Deep and Narrow	Deep and Mixed (not fully controlled)	Deep and Mixed (not controlled)
Item Complexity – <i>how many components and interactions present</i>	Low	Medium	Mixed	Mixed
Enactive Fidelity – <i>how much true interaction takes place</i>	Low – Only an imagined other	Medium – Imagined other or confederate other	High – authentic interactions	High – authentic interactions
Affective Fidelity – <i>how much does experience actually elicit emotional response</i>	Low	Medium	High	High

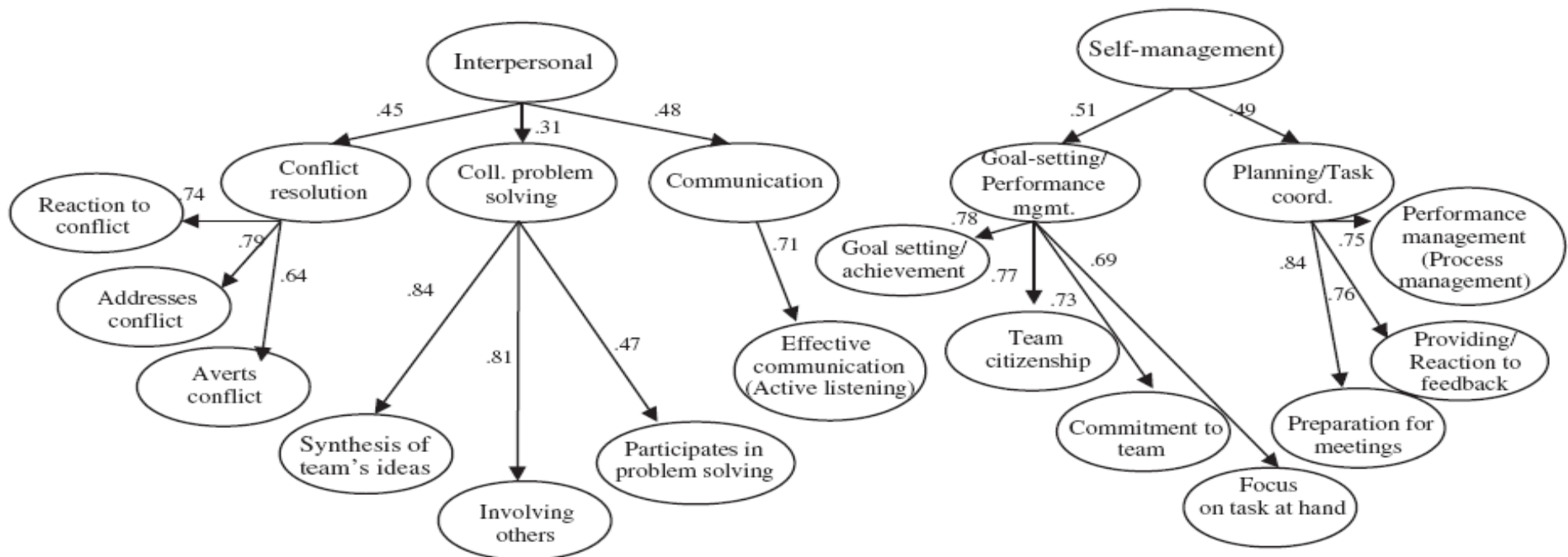
Gaps in IPS Assessments (and some Interdisciplinary Solutions)

Dealing with Item Sampling

- Problem is broad nature of IPS not always being assessed

Can gain insights from the Organizational Science and study of teams

- Taggar & Brown (2001) developed BOS for interpersonal skills and self-management.
- **IPS assessment needs to more consistently sample from broad variety behaviors required for interaction.**



Gaps in IPS Assessments (and some Interdisciplinary Solutions)

Standards for Scaling Item Complexity

- Across items and across methods we see:
 - Some items populated with lots of sub-components; some with few
 - Some items have components which need to be integrated; some not
- Operationalizing Complexity may add important level of diagnosticity
 - Provides greater level of specificity of where errors may reside
 - May help diagnose "level of expertise" one has in IPS
- Can gain insights from the **Organizational Sciences** and theory of "Task Complexity" (Wood, 1986)
 - Number of problem components and their integration
 - Component Complexity
 - Amount of distinct acts associated with task and amount of problem elements to be processed
 - Coordinative Complexity
 - Degree to which acts/elements need to be integrated for successful task completion

<i>Task Complexity</i>		<i>Component Complexity</i>	
		Low	High
<i>Coordinative Complexity</i>	Low		
	High		

Gaps in IPS Assessments (and some Interdisciplinary Solutions)

IPS Assessment may want to explore notion of “Interpersonal Complexity”

- Way to quantify socialness of items?
- Variations in amount of interaction required

Interpersonal Component Complexity

- Amount of people present

Interpersonal Coordinative Complexity

- Amount of interaction required with people present

<i>Interpersonal Complexity</i>		<i>Component Complexity</i>	
		<i>Low</i>	<i>High</i>
<i>Coordinative Complexity</i>	<i>Low</i>	Few People Few Interactions	Many People Few Interactions
	<i>High</i>	Few People Many Interactions	Many People Many Interactions

Gaps in IPS Assessments (and some Interdisciplinary Solutions)

Related to Complexity is Assessment of Workload Experienced During Testing

- Problem is that we have no indication of difficulty experienced
- Determining difficulty adds a level of diagnosticity over and above accuracy

Can gain insights from the Learning Sciences and Cognitive Load Theory and Instructional Efficiency (Paas & Van Merriënboer, 1993)

- Observed relation between mental workload and performance

IPS Assessment May Want to Explore Notion of “Interpersonal Efficiency”

- Help us determine if challenge is from the task or from the interaction
 - **Interpersonal Workload?**
 - Challenge arising from number of people with whom to deal
 - Challenge arising from “how” one needs to deal with people
 - **Interpersonal Efficiency**
 - Those performing well and reporting lower reported workload in test items with high degree of interaction

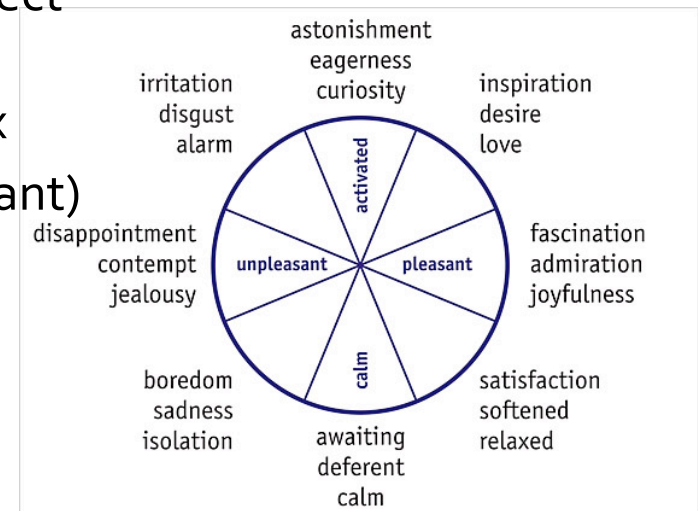
Gaps in IPS Assessments (and some Interdisciplinary Solutions)

Affective Fidelity and Understanding the Affective Response

- IPS often requires being comfortable with uncomfortable situations
- Problem is that bodily response to IPS assessments not being fully explored
- Examining this adds a level of diagnosticity by telling us degree and type of discomfort with situation

Can gain insights from the Social and Clinical Sciences

- Affective state refers to all types of valenced subjective experiences
 - Perceived goodness or badness, pleasantness or unpleasantness
- Russell (1980, 2003) introduced concept of 'core affect'
 - Combines affect dimension with physiological arousal describable as a position on a circumplex
 - Horizontal – shows valence (unpleasant to pleasant)
 - Vertical – shows arousal (calm to excitement)



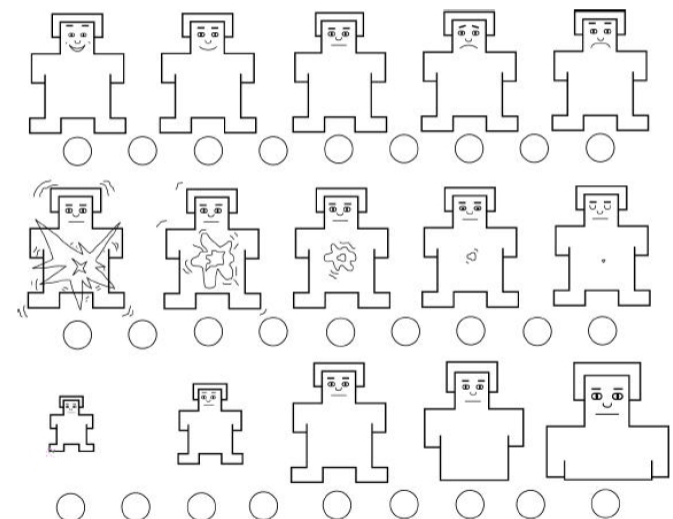
Gaps in IPS Assessments (and some Interdisciplinary Solutions)

Ways for IPS Assessment to Explore Affect

- **Positive and Negative Affect Scale (PANAS) - Watson, Clark, and Tellegen (1988)**
 - Negative Affect - Subjective distress and unpleasurable engagement
 - Positive Affect - Pleasurable engagement with the environment (e.g., emotions such as enthusiasm and alertness)
- **Self-Assessment Mannequin (Lang, 1980)**
 - Assesses 3 Dimensions of Emotional Response
 1. 'Pleasure-displeasure' -- assesses affective quality
 2. 'Arousal-non-arousal' addresses physical activity
 3. 'Dominance-submissiveness' defines individuals feeling of control, or lack thereof

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly	a little	moderately	quite a bit	extremely
___	interested	___	irritable	___
___	distressed	___	alert	___
___	excited	___	ashamed	___
___	upset	___	inspired	___
___	strong	___	nervous	___
___	guilty	___	determined	___
___	scared	___	attentive	___
___	hostile	___	jittery	___
___	enthusiastic	___	active	___
___	proud	___	afraid	___



The Next Frontier in IPS Assessments?

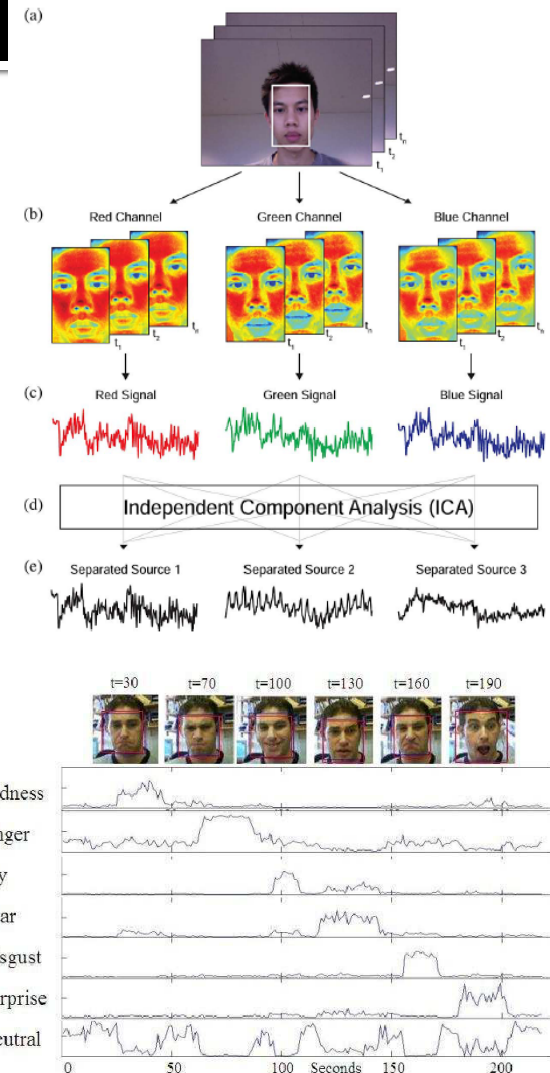
From the Computer and Engineering Sciences

- **Arousal measured automatically via face RGB**
 - Analyze color channels in video to extract blood volume pulse
 - Non-intrusive measures of heart rate and respiratory rate
 - Heart respiratory rate and variability were quantified and compared to measurements FDA-approved sensors

Poh, McDuff, & Picard (2011). Advancements in Noncontact, Multiparameter Physiological Measurements Using a Webcam. *IEEE Transactions on Biomedical Engineering*, 58, 1, 7-11.

- **Valence automatically coded via facial expressions**
 - Video frames scanned in real-time to detect upright-frontal faces.
 - The faces found are scaled and passed to a recognition engine
 - Codes facial expressions into 7 dimensions in real time:
 - **neutral, anger, disgust, fear, joy, sadness, surprise.**

Littlewort, Bartlett, Fasel, Susskind, Movellan (2004). Dynamics of Facial Expression Extracted Automatically from Video. Conference on Computer Vision and Pattern Recognition. Volume 5.



The Next Frontier in IPS Assessments?

Virtual Worlds may support contextually rich assessment of interpersonal skills

- Can immerse students in challenging social scenarios and diagnose degree to which interpersonal skills demonstrated.
- **Recent studies find that personalities are expressed in VWs**
 - VW behavioral cues reflect trait definitions of standard personality factors
 - “Extraverts” prefer group-oriented activities
 - “Agreeable” use more positive emotes and prefer non-combat activities

Yee, N.; Ducheneaut, N.; Nelson, L.; Likarish, P. (2011). **Introverted elves and conscientious gnomes: The expression of personality in World of Warcraft.** ACM CHI Conference on Human Factors in Computing Systems (May 7-12), Vancouver, BC, Canada.



Summary

□ Points About IPS

1. Methods available vary in contextual authenticity of test experience
2. Methods vary in time-frame and complexity of assessment

□ Challenges for IPS

1. Need to improve item sampling
2. Need to operationalize complexity of interpersonal experience
3. Need to understand level and type of workload experienced
4. Need to more fully examine affective responses to experience
5. Emerging technologies may help to automate some of the above analyses
6. Emerging technologies may provide authentic context in which to assess IPS

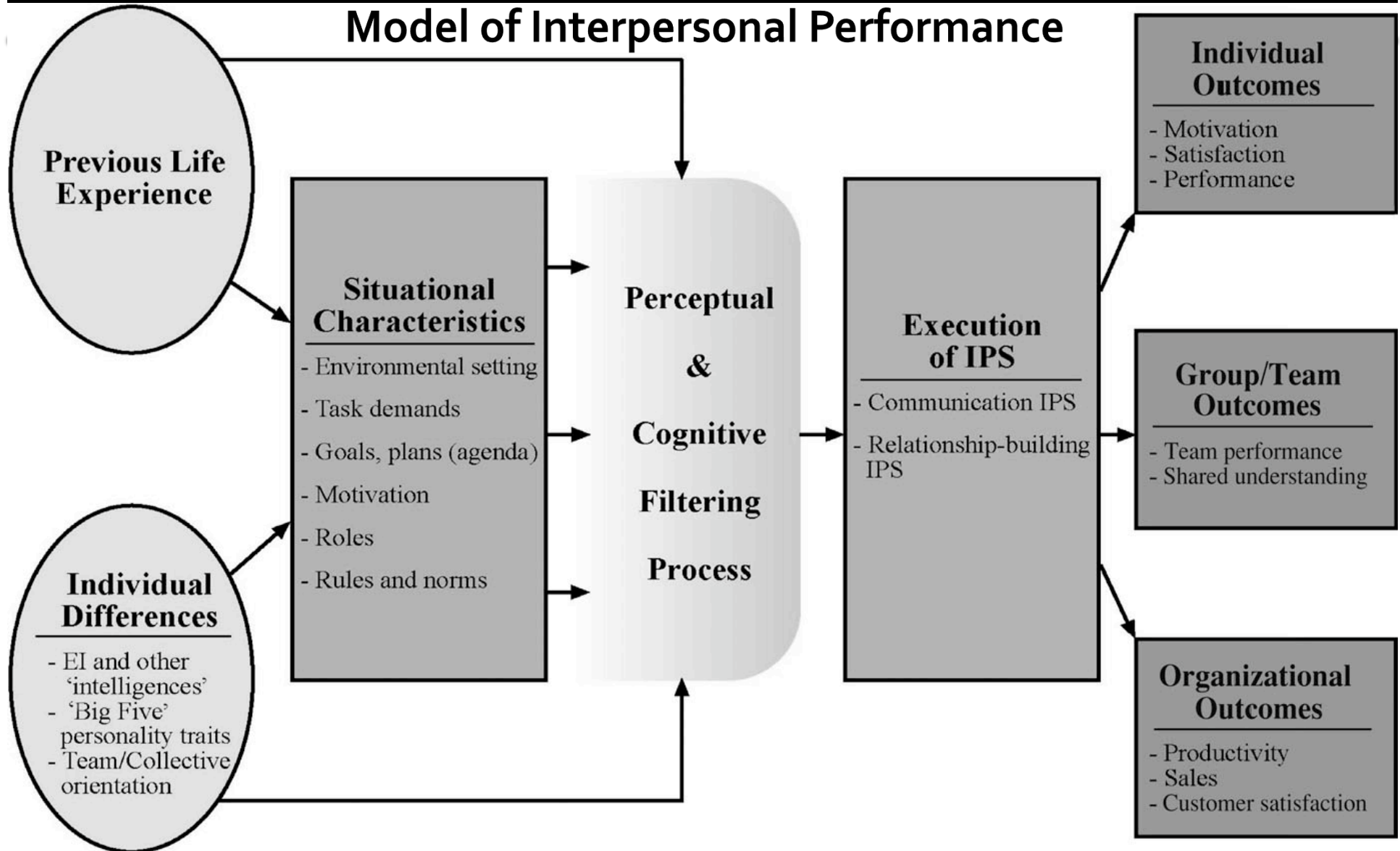
Thank You

sfiore@ist.ucf.edu



Making Sense of IPS

Model of Interpersonal Performance



"21st Century Interpersonal Skills"

Interpersonal Skill	Description	Related Skill(s)
RELATIONSHIP-BUILDING SKILLS		
<i>Cooperation and coordination</i>	Understanding and working with others in groups/teams; includes offering help and pacing activities to fit the needs of the team	<u>Adaptability</u> ; shared awareness; <u>monitoring and feedback</u> ; interpersonal relations; communication; decision making; group problem solving
<i>Trust</i>	An individual's faith or belief in the integrity or reliability of another person or thing; willingness of a party to be vulnerable to the actions of another party based on the expectation that certain actions important to the trustor will be performed	Self-awareness; <u>self-disclosure</u> ; swift trust
<i>Intercultural sensitivity</i>	Appreciating individual differences among people	Acceptance; openness to new ideas; sensitivity to others; cross-cultural relations
<i>Service orientation</i>	Basic predispositions and an inclination to provide service, to be courteous and helpful in dealing with customers, clients, and associates	Exceeding customer's expectations; customer satisfaction skills; ability to maintain positive client relationship; building rapport
<i>Self-presentation</i>	Process by which individuals attempt to influence the reactions and images people have of them and their ideas; managing these impressions encompasses a wide range of behaviors designed to create a positive influence on work associates	Self-expression; face-saving and impression management; managing perceptions; self-promotion

"21st Century Interpersonal Skills"

COMMUNICATION SKILLS

<i>Active listening</i>	Paying close attention to what is being said, asking the other party to explain exactly what he or she means, and requesting that ambiguous ideas or statements are repeated	<u>Listening with empathy and sympathy</u> ; listening for understanding
<i>Oral communication</i>	Sending verbal messages constructively	<u>Enunciating</u> ; expressing yourself clearly; <u>communicating emotion</u> ; interpersonal communication
<i>Written communication</i>	Writing clearly and appropriately	Clarity; communicating intended meaning
<i>Assertive communication</i>	Directly expressing one's feelings, preferences, needs, and opinions in a way that is neither threatening nor punishing to another person	Proposing ideas; social assertiveness; defense of rights; directive; asserting your needs
<i>Nonverbal communication</i>	Reinforcing or replacing spoken communication through the use of body language, gestures, voice, or artifacts	Expression of feelings; perception/recognition of feelings; facial regard