


Baltimore Chapter




# Social Psychology & INFOSEC

**ISSA Baltimore Chapter**  
**July 23, 2008**

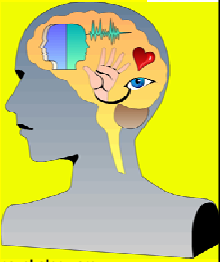
M. E. Kabay, PhD, CISSP-ISSMP  
CTO & MSIA Program Director  
School of Graduate Studies, Norwich University  
[mailto:mekabay@gmail.com](mailto:mailto:mekabay@gmail.com) V: 802.479.7937

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## Topics in CSH4 Ch 35\*


- Rationality is Not Enough
- Getting Your Security Policies Across
- Encouraging Initiative
- Group Behavior



\* NOTES:

- 1) Detailed, narrated lectures on organizational psychology are available from the MSIA program at <http://www2.norwich.edu/mkabay/msia/public/index.htm> as a complete lecture (15.7MB Zipped) or in parts.
- 2) This presentation goes beyond Chapter 35 of the *Computer Security Handbook*, 4<sup>th</sup> Edition in some respects.

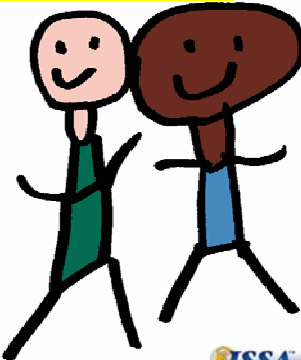
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## Rationality is Not Enough

*People's behavior includes much more than logic and reason*

- The Schema
- Theories of Personality
- Attribution Theory
- Social Cognition: Forming Judgments
- Intercultural Differences
- Framing Reality




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## The Schema

- Cognitive framework
- What allows observations to make sense
- We interpret observations in context
  - ❑ Imagine that your colleague appears at work dressed like this:
  - ❑ But what if your colleague is at the company swimming pool?
  - ❑ Results in radically different interpretation from schema for the business meeting. . . .
- In security, schema for *normal politeness* conflicts with schema for *secure behavior*

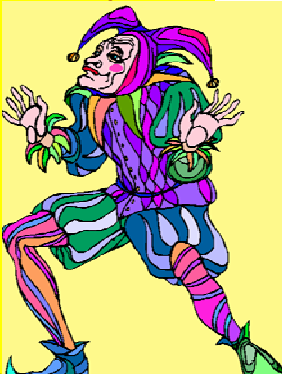


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## Theories of Personality

- Interpersonal conflicts can interfere with security policy
- Beware *rigid categories* for framing behavior in terms of fixed personality patterns
  - ❑ Extroversion / agreeableness etc.
- Especially important not to value one personality style above another
  - ❑ People of all styles can contribute constructively to organization
  - ❑ Perceptions and expectations account for many conflicts
- Role-playing exercises very helpful
- Listen carefully to people's expressions of feelings as well as of opinions



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## Attribution Theory (1)

- How people explain their own and others' behavior
- Weiner's classification:

	Stable	Unstable
Internal	Dispositions; traits; level of ability or intelligence	Effort; mood; physical state
External	Degree of task difficulty; env helps/hindrance	Good/bad luck; opportunity; transient situations

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### Attribution Theory (2)

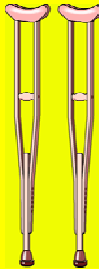


- How we explain behavior
- Fundamental Attribution Error
  - ❑ Star Trek's Leonard Nimoy is really like the character he portrays (Mr Spock)
- Actor-Observer Effect
  - ❑ What I do is a reasonable response to the situation but what you do is in your nature
- Salience
  - ❑ What stands out is perceived as most important even if it isn't

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### Attribution Theory (3)

- Self-Serving Bias
  - ❑ If I succeed it's because of how good I am, but if I lose it's not my fault
- Self-Handicapping
  - ❑ If I expect to fail I'll make sure there's a good excuse
- Depressed People
  - ❑ If I lose it's because of how bad I am, but if I succeed it's not to my credit



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### Attribution Theory: Implications

- Leader and others: remember not to pigeon-hole someone
  - ❑ E.g., "He's always \_\_\_\_\_"
- Reverse situation – think about explanations for perplexing or objectionable behavior
  - ❑ "If I were behaving that way, it would be because \_\_\_\_\_"
- Challenge unthinking reliance on salience – question assumptions about causality
  - ❑ "Why should the fact that he limps make a difference to \_\_\_\_\_?"

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### Social Cognition: Forming Judgements

1. Schemas influence perception
2. Decision-making usually includes only a small subset of available information
3. Language influences perception
4. Reasoning is only a small part of forming judgments or opinions



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### Inadequate Sampling



- Judgments are often based on inadequate samples
- Early, negative, information weighted heavily
- The *availability heuristic* can lead to errors in judgment
  - ❑ What's easy to remember weighs too heavily in decision
  - ❑ Anecdotal evidence inappropriately strong

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### Inadequate Sampling (cont'd)


**THEREFORE**

1. Provide decision makers with *powerful arguments first*
2. Ensure there's lots of *striking, memorable evidence* in presentation
3. Explicitly *challenge* incorrect intuition, preconceptions, conclusions

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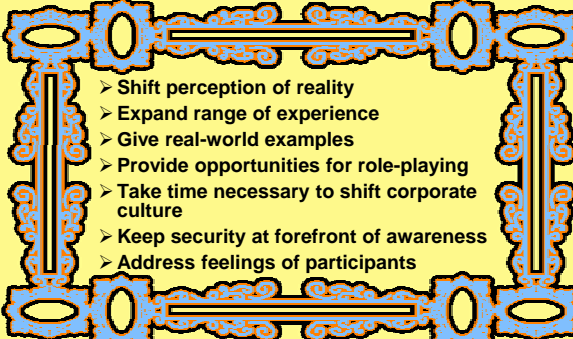
## Intercultural Differences

- International differences can lead to
  - ❑ Misunderstandings
  - ❑ Conflicts
- History, interpretation can be different; e.g.,
  - ❑ Afghani Taliban forced non-Muslims to wear badges in public
  - ❑ So how *might* a particular Hindu refugee from Afghanistan feel in the USA being forced to wear a badge to work?
- DISCUSS such problems rather than dismissing them



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## Framing Reality



- Shift perception of reality
- Expand range of experience
- Give real-world examples
- Provide opportunities for role-playing
- Take time necessary to shift corporate culture
- Keep security at forefront of awareness
- Address feelings of participants

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## Getting Your Policies Across: Effective Communication

What influences pace of change:


- Audience/Listener variables
- Channel variables
- Communicator/Presenter variables
- Message variables

For narrated lectures on effective communications, see LEADERSHIP parts 3 and 4 on <http://www2.norwich.edu/mkabay/msia/public/index.htm>



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## Beliefs and Attitudes (1)





- Belief: cognitive information without affect (feelings)
  - ❑ "The operators are responsible for tape mounts."
- Attitude: evaluation or emotional response
  - ❑ "The \*/\$&! operators are supposed to be responsible for tape mounts!"
- Cognitive dissonance: incompatible beliefs, attitudes or behavior
  - ❑ "I am an honest person – but I have taken home three dozen blank CD-RW disks this month from the company stockroom."

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## Beliefs and Attitudes (2)

- Before attempting to change beliefs and attitudes, study what they are
  - ❑ Interviews
  - ❑ Focus groups
  - ❑ Surveys
- Use language carefully
  - ❑ Positive terms for desired end-point
- Encouragement is effective
  - ❑ Even minor praise, smile can shape beliefs and attitudes\*
- Allow time for change – weeks at least

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## Beliefs and Attitudes (3)



- Suggestions for security group:
  - Explore current beliefs and attitudes towards security
    - ❑ Identify areas of conflict, negative affect
    - ❑ Correct erroneous beliefs fast
    - ❑ Explore why some policies are successful
  - Provide consistent pro-security messages to avoid dissonance
    - ❑ E.g., managers should not ignore policies
  - Rewards more effective than punishment
    - ❑ Encouraging positive attitudes & behavior

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## Prejudice

- Stereotypes – simple models of others;
  - ❑ e.g., racial profiling, assumptions about security officers
- Roots of prejudice are many – historical, social, familial, psychological, personal
- Authoritarian personality includes prejudice
- Minimal-group research – easy to generate inter-group hostility and prejudice simply by grouping
- Group competition exacerbates prejudice
  - ❑ Creating common goals and projects for hostile groups mitigates prejudice
- Favorable depictions improve inter-group relations

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## Encouraging Initiative

- Prosocial Behavior
- Conformity, Compliance and Obedience



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## Pro-Social (Helpful) Behavior


- Acting helpfully requires 4 steps:
  - ❑ Notice problem
  - ❑ Need awareness
- Recognize as emergency
  - ❑ Need training
- Take responsibility for action
  - ❑ Need climate for responsible action
  - ❑ No worry about looking foolish
- Decide on action
  - ❑ Sound training, good policies



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## Pro-Sociality (2)


- Bystander Effect
  - ❑ Larger groups have slower reaction time
  - ❑ Diffusion of responsibility
  - ❑ Uncertainty about social climate
- Counter bystander effect using rewards for responsible behavior
  - ❑ E.g., reporting security violations
  - ❑ Challenging unbadged strangers



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## Pro-Sociality (3)

- Cost-benefit analysis
  - ❑ Make prosociality low cost / high gain
  - ❑ Provide hotline for security violations
  - ❑ Allow anonymity in reports
- Make failing to support policy expensive
  - ❑ Personnel policies: clear sanctions
  - ❑ Performance review
  - ❑ Possible dismissal



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## Conformity, Compliance and Obedience

- Shift normative values towards goal
  - ❑ Express expectation of cooperation – “We”
- Group solidarity increases conformity
  - ❑ Group exercises, games, teamwork
  - ❑ If using contests, mix up the teams
- Outliers are especially important
  - ❑ Both enthusiasts and resisters
- Norm of reciprocity
  - ❑ Give a little, get a little
- Foot in the door
  - ❑ Get a little, get more



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## Group Behavior

- Social Arousal
- Locus of Control
- Group Polarization
- Groupthink



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## Social Arousal

- Large groups cause "social arousal"
  - ❑ Increased awareness of self and others
  - ❑ Facilitates *well-learned* habits
  - ❑ *Interferes* with *poorly-learned* habits
- Therefore *avoid large groups* for early security training
- Provide individualized learning as major tool




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## Locus of Control (1)

- People work better when they feel in control
  - ❑ Able to affect outcomes
  - ❑ Considered by decision-makers
  - ❑ Listened-to
- Experimental evidence
  - ❑ Teams working in noisy environment
  - ❑ Patients in convalescence homes



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## Locus of Control (2)

Locus of Control Group 1



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## Locus of Control (3)

Locus of Control Group 2



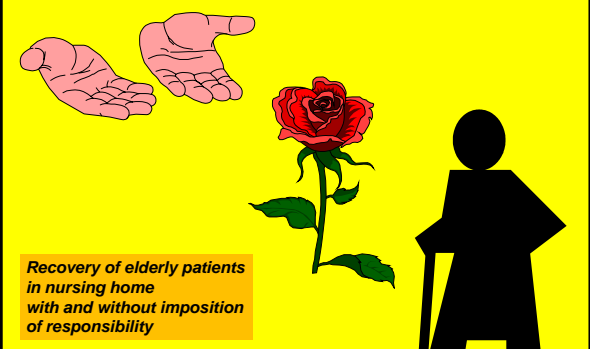
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## Locus of Control (4)



*Recovery of elderly patients in nursing home with and without imposition of responsibility*

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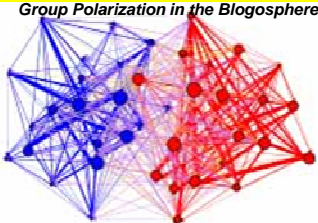
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### Group Polarization

- Groups take on more extreme positions than any one member would
- E.g., can decide to take more risks (or fewer) than reasonable
- Emphasize one-on-one discussions to counter polarization
- Re-evaluate group decisions after enthusiasm has cooled

*Group Polarization in the Blogosphere*



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From [http://www.zonaeuropa.com/20050312\\_1.htm](http://www.zonaeuropa.com/20050312_1.htm)

### Groupthink of Irving Janis

- Desire for social cohesion can lead to flawed thinking
  - ❑ Reject contrary evidence
  - ❑ Condemn anyone questioning consensus
  - ❑ Protect leader against "disturbing" views
- Factors increasing likelihood of groupthink
  - ❑ Authoritarian leader
  - ❑ Pre-existing agenda
  - ❑ Rejection of debate
- Should fight groupthink at all levels

**Challenger:**  
January 28, 1986



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### Review Questions (1)

1. How does the schema affect information assurance?
2. How can faulty interpretations of personality interfere with IA practitioners' ability to work effectively in an organization?
3. How do unsophisticated explanations of behavior interfere with effective security administration?
4. What is meant by "making security part of the corporate culture"?
5. Discuss three key elements for changing employees' schemas to improve receptivity to security policies.
6. Why is it valuable to evaluate current beliefs about security issues (explain with respect to cognitive theory).

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### Review Questions (2)

7. What are the most effective mechanisms for motivating better attitudes toward security and greater compliance with security policies?
8. Analyze the case of the Hershey's Kisses on the keyboard.
9. Name and define the four types of variables affecting the effectiveness of communications designed to change attitudes.
10. Explain how each of the four communications variables can be optimized for effective attitude change in security training.
11. How can one encourage employees to take the initiative in responding to security breaches and reporting questionable behavior?

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### Review Questions (3)

12. How does team spirit influence the work of IA trainers?
13. Why should IA trainers and security personnel pay attention to outliers?
14. How does the norm of reciprocity play a role in security policy efforts?
15. What is the significance of the "foot-in-the-door" technique for security training and awareness efforts?
16. When should security training be offered to large groups and when to small groups? Why?
17. What is the meaning of "locus of control" for security efforts?
18. How can one avoid the dangers of group polarization and groupthink in security training and awareness efforts?

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# DISCUSSION

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