A Qualitative Study of Volunteers’ Awareness of the Acute Effects of Ethanol on Speed and Accuracy of Performance

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Speed and Accuracy

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- Faster performance is associated with more errors
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Speed-Accuracy Trade-off

- Inter-individual differences
- Instruction set
- Feedback or pay-offs
- How the person construes the task

It is essential to take both speed and errors into account when interpreting test results.
Speed-Accuracy Trade-off

- Speed and errors may be differentially affected by drugs
- Sedative drugs tend to slow performance
- Alcohol has greater effect on errors
Alcohol and Errors

Doesn’t seem to be due to:

• Impaired error processing
• Alcohol myopia
• Increased willingness to take risk
Alcohol and Errors

Volunteers know:

- They are making errors
- They are making more errors with alcohol

Are they making conscious decisions about errors and about SATO?

Are these decisions affected by alcohol?
Alcohol Study

• A hybrid everyday/laboratory study using mobile phones for performance testing
• Laboratory part compared alcohol (mean peak BAC 121 mg/100 ml) and placebo in two-period crossover
• 30 healthy volunteers (16 M 14 F) aged 19-64 years (mean 37.4) took part
• Qualitative interviews carried out at end of second session
Performance Tests

• Word-Number: Episodic memory
• Memory Scanning: Working memory
• Number-Pair: Attention/Psychomotor
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• Word-Number: Episodic memory
• Memory Scanning: Working memory
• Number-Pair: Attention/Psychomotor
Number-Pairs

- Significant increase in errors with alcohol
- Small, non-significant slowing of response time
Qualitative Interviews

• Approach to tests, strategies
• Awareness of performance
• Responses to errors when they occurred
• Attitudes concerning speed and errors
• Awareness of SATO
• Awareness of alcohol effects on test performance
• Attitudes to alcohol in everyday life
• 22 / 30 volunteers were aware of alcohol impairment to at least one aspect of performance
Awareness of Performance

- Five volunteers said they sped up with alcohol
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Awareness of Performance

- 26/30 volunteers were explicitly aware of the inverse relationship between speed and errors
  – “More errors because I was going more quickly”
  – “Better going slower making fewer errors”
  – “I try and avoid error rather than be fast”
  – “Take time, could do it without errors, no bother”
  – “If I’d been slower, I wouldn’t have made the mistakes”

- Five volunteers reported consciously slowing down (or trying to) with alcohol to avoid making more errors
Alcohol Themes

• Concentration impaired
• Less conscientious
• Try harder or slow down to compensate for effects of alcohol
• Over-confidence or dissociation
Concentration Impaired

- Kind of get a biy hazy, weren’t as switched on
- Lack of concentration
- Concentration span less
- Needed to concentrate
- Alcohol stops you concentrating
- I focussed less, my concentration was less
- My concentration was poor
- I was losing concentration
Less Conscientious with Alcohol

- I didn’t take the task so seriously
- I didn’t care as much
- Care less if you got it right- just wanted to get test over
- If I get it wrong I don’t react with the same vigour as when I’m sober
- I didn’t care so much
- Can I actually be bothered to get all these right?
- More relaxed about it all, less conscientious
- It doesn’t make the errors seem so important
Trying Harder to Compensate for the Effects of Alcohol

- Have to concentrate harder
- Trying to keep the same pace [...] still wanted to do as well as I could
- I’m a bit drunk and need to like slow and think about it properly
- I really focussed on it more
- You’re thinking about it and concentrating more
- Still trying to get it right as possible
- I tried to slow myself down when I’d had the alcohol
- I slowed down definitely, but I still made more errors
Over-Confidence or Dissociation

- Sense of confidence, you feel that anything you do drunk is valid
- It pushes behaviour to extremities, either misplaced self-confidence or more aware of impairment
- I felt I was doing better but I think I was doing worse
- You think you’re wonderful but you’re absolute rubbish
- If you’ve had alcohol you try and pretend [to yourself] you don’t have
Thematic Development

• Themes fragmented, and to some extent conflicting
• Different people react to alcohol in different ways
  – Personality
  – Stimulant vs sedative effects

*Development of questionnaire to collect more systematic data on different responses to alcohol*
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Questions?