Objectively Measuring the Promulgation of Commander's Intent in a Coalition Effects Based Planning Experiment (MNE3)

Andrew Leggatt
Human Factors Department
BAE SYSTEMS
Advanced Technology Centre, Filton (Bristol)

Acknowledgements

- Nigel Paling, Iain Saker, John Coote, John Admire, Chris Elliott, Mike Kalms, Martin Pepper, Simon Atkinson, Jeremy Wilson, Andrew Preece and Steve Potter

Summary

1. What is commander's intent
2. Why measure it?
3. How did we measure it?
4. Limitations
5. Hypotheses
6. Findings
7. Conclusions
8. Questions

What is commander's intent?

- JWP 01-1.1 "**A concise expression of the purpose of the campaign or operation, the desired results and how operations will progress towards achieving the desired end-state. At the tactical level, the commander's intent should be focused on the effect that he wishes to achieve on the enemy**"
- **"The general intent must be stated for the execution of impending operations, but the method of execution is left to the subordinate commanders. Otherwise it becomes a directive." (Truppenfhrung, para 76, 1933).**
- ***"Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity."***
  - General George S. Patton, Jr
- Concise exposition of the Commander's goals to enable unity of effort between all coalition actors

Why measure commander's intent?

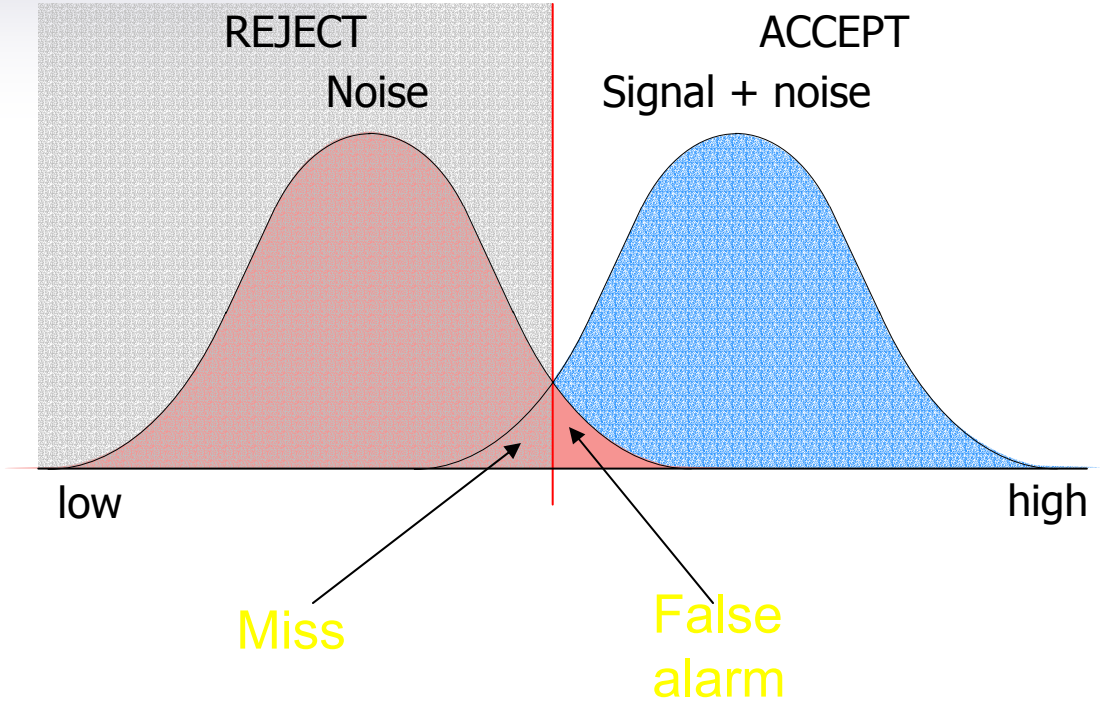
- "We are looking at how mission command in the information age can work. We are agreed that mission command encapsulates one of the best aspects of the British approach to the use of military force, the ability for a commander to articulate his intent and for the people beneath him to decide on the best way of carrying that out. The information age should allow a much greater dissemination, a much clearer exposition, of the commander's intent." (House of Commons Defence Select Committee, 2003, AVM McNicoll)
- "Hi Andrew..as discussed with you during IPC the following sorts of issues should be investigated:1.The dissemination and understanding of the Command intent throughout the players... Martin & Tim."

How did we measure the dissemination of intent?

	Assessed as "Correct"	*Assessed as "Incorrect"*
Actually Correct	***HIT***	***MISS (error)***
Actually Incorrect	***FALSE ALARM (error)***	***CORRECT REJECTION***

- Objective measure of understanding
- Signal Detection Theory (SDT)
- 24 probes over 4 occasions
- Probes set by UK SCD, CJFO, APL and adjusted by the Commander with help of Scientific Officer

SDT measures of performance



- d' sensitivity (distance between distributions)
- ß bias (position of criterion)
- p(hit)
- p(false alarms)
- P(correct performance)
- & Confidence rating

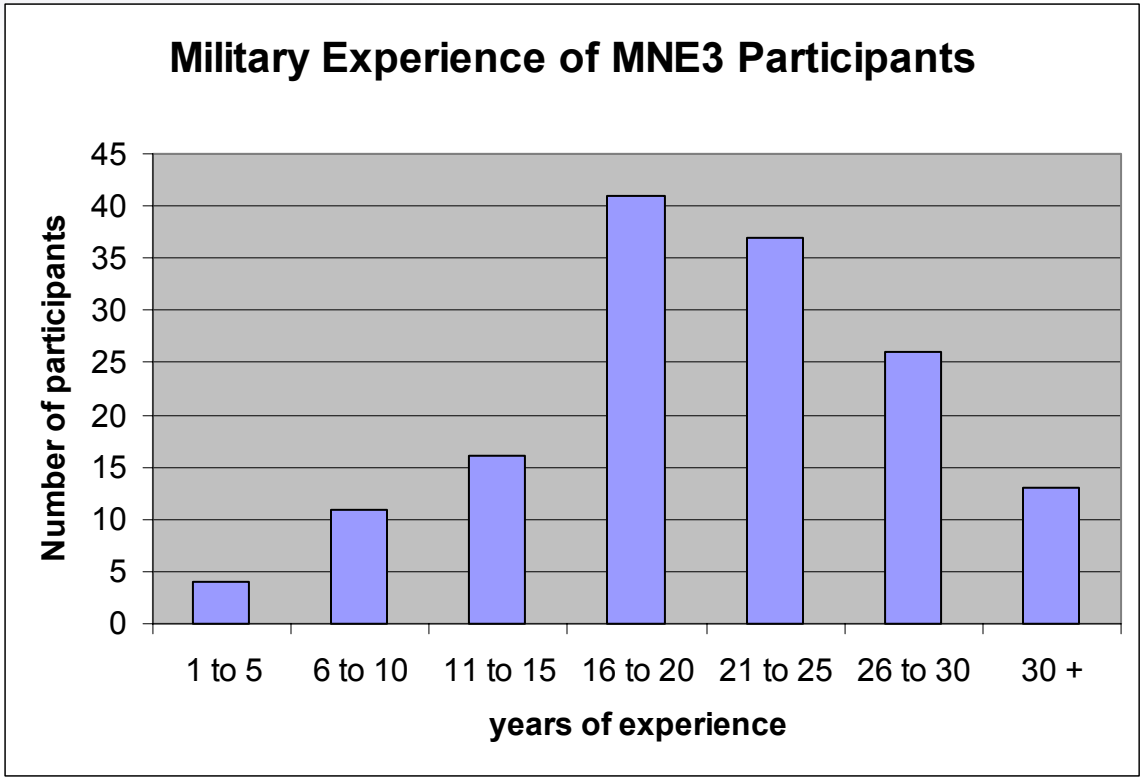
Constructing probes

The probe statements shall:

- Reflect the commander's intent,
- Use simple language (probes should not be a language test for non-native English speakers)
- Not be a verbatim copy of the published guidance
- Be a mixture of implicit and explicit issues.
- Be operationally relevant.
- Be equal in number true and false.

The Commander will escalate measures against uncooperatives (true).
CTF considers that food aid will be controlled to exert influence (false).

Participants



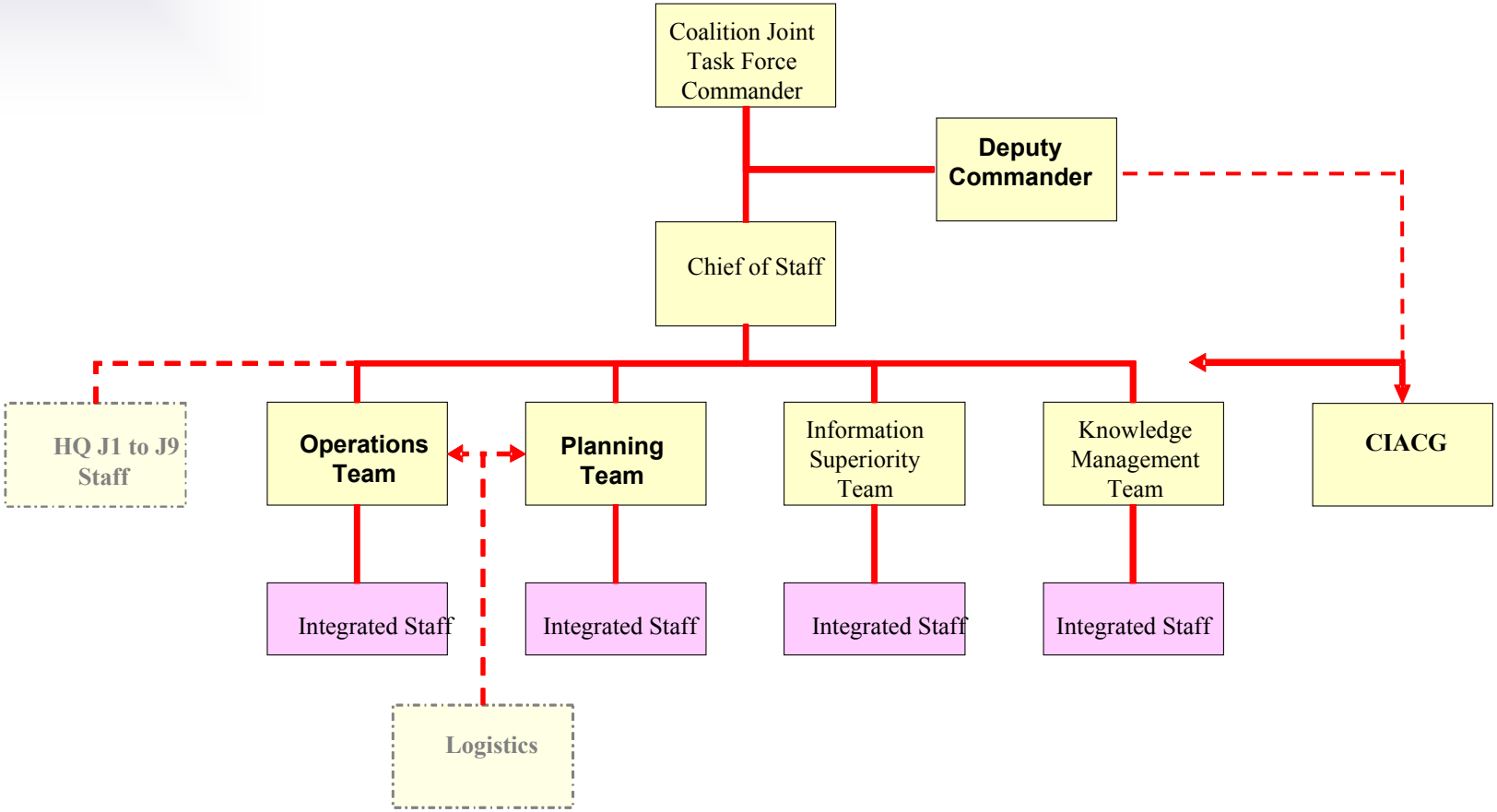
- Tested most participants (105 out of 115 registered members of CTFHQ during MNE3).
- Experienced individuals

CTFHQ grouping

GROUP	NO. OF PARTICIPANTS
Plans	20
IS (Information Superiority)	45
Command Team	6
CIACG	8
OPS	11
Logistics	3
KM (Knowledge Management)	5
Medical	7
All Groups	**105**

- Command team
  - COS, D Cdr, group leaders
- Plans
- Ops
- IS (information superiority)
- KM (Knowledge Management)
- CIACG (FCO, State dept, DFID, HMCE)
- Log and medical

CTFHQ grouping



Limitations

- Experimental environment not established to just measure CI.
- Site and group confounded
- MNE3 was a planning experiment - Ops didn't have a substantial role.
- The HQ was distributed.
- The HQ was composed of a coalition with lots of associated variance.
- New planning process - Effects Based Planning Process.

Hypotheses

- H_1: The method will provide a clear insight into the promulgation of commander's intent throughout the CTFHQ (simulated in MNE3).
- H_1: Those staff geographically closest to the Commander will have higher levels of commander's intent than those further away (i.e. US site greater commander's intent than UK, Australia, Canada, etc.).

Hypotheses

- H_1: Those staff organisationally closest (i.e. the Command team and to a lesser extent the plans team) to the Commander will have higher levels of commander's intent (irrespective of geography).
- H_1: The probe performance on different days/events will provide an indication of whether there were problems with the Staffs' understanding of commander's intent.

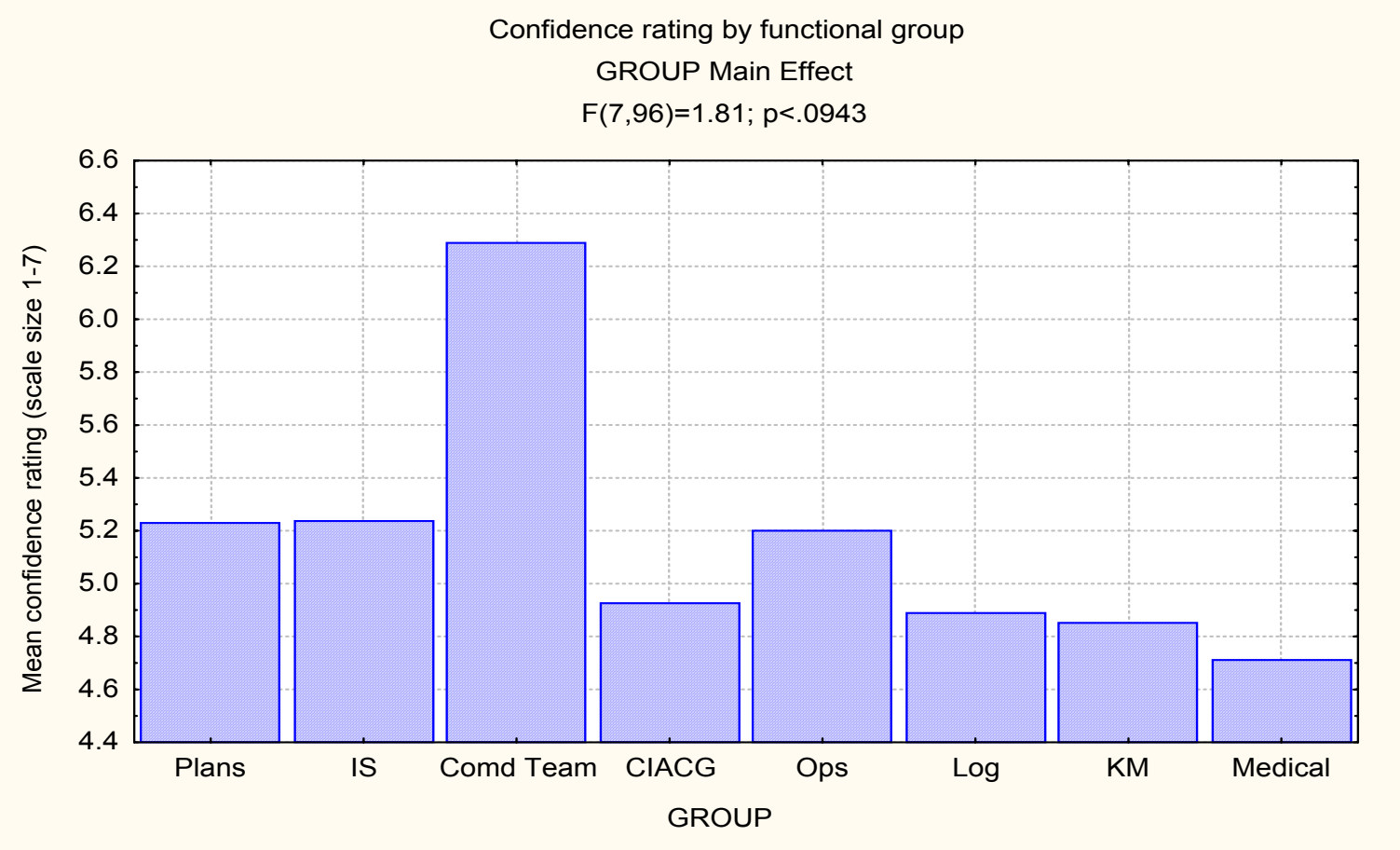
Results

Confidence data

Confidence rating by site and date

- No significant differences
- Could this mean there was similar levels of difficulty between dates/events?

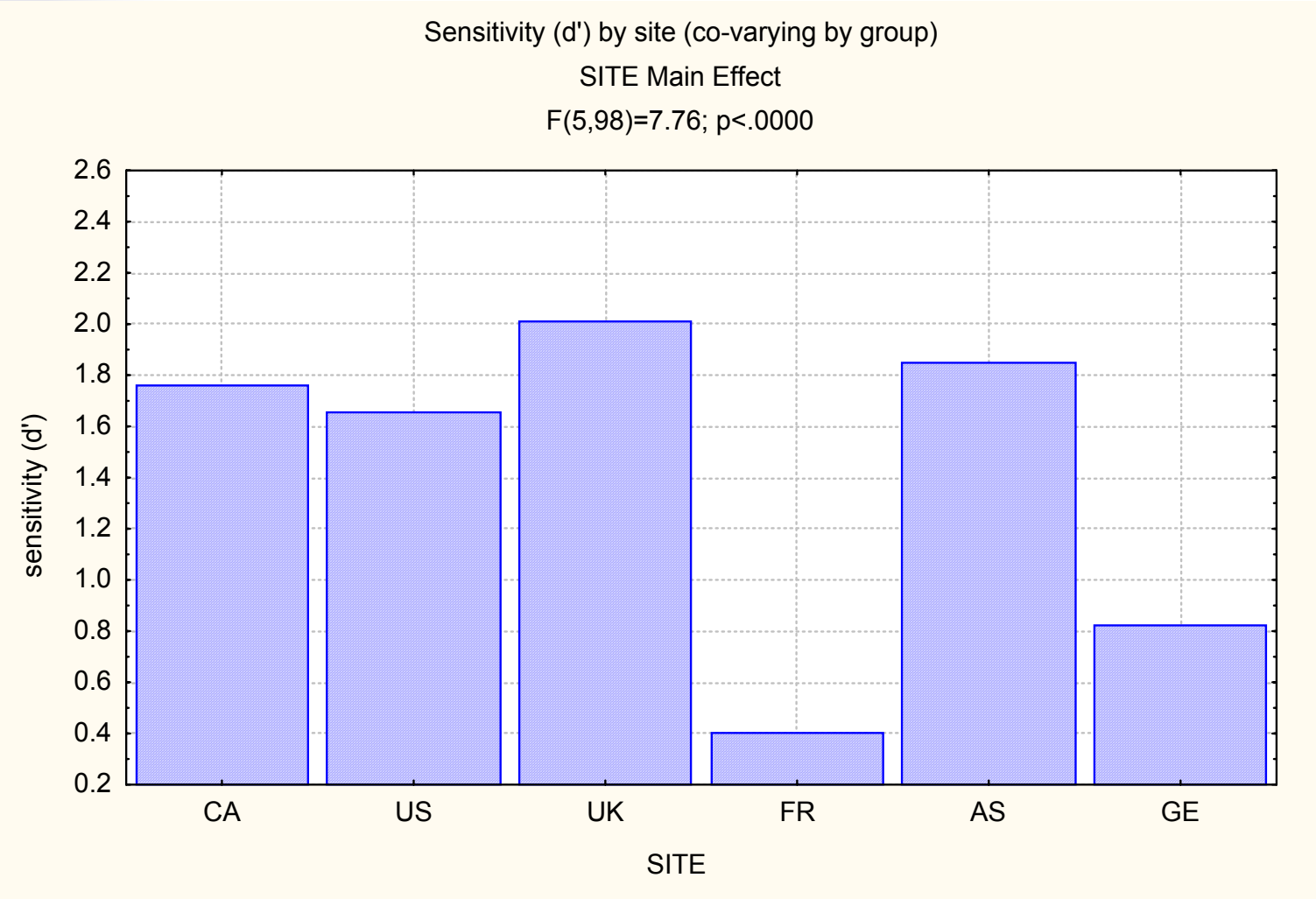
Confidence rating by functional groups



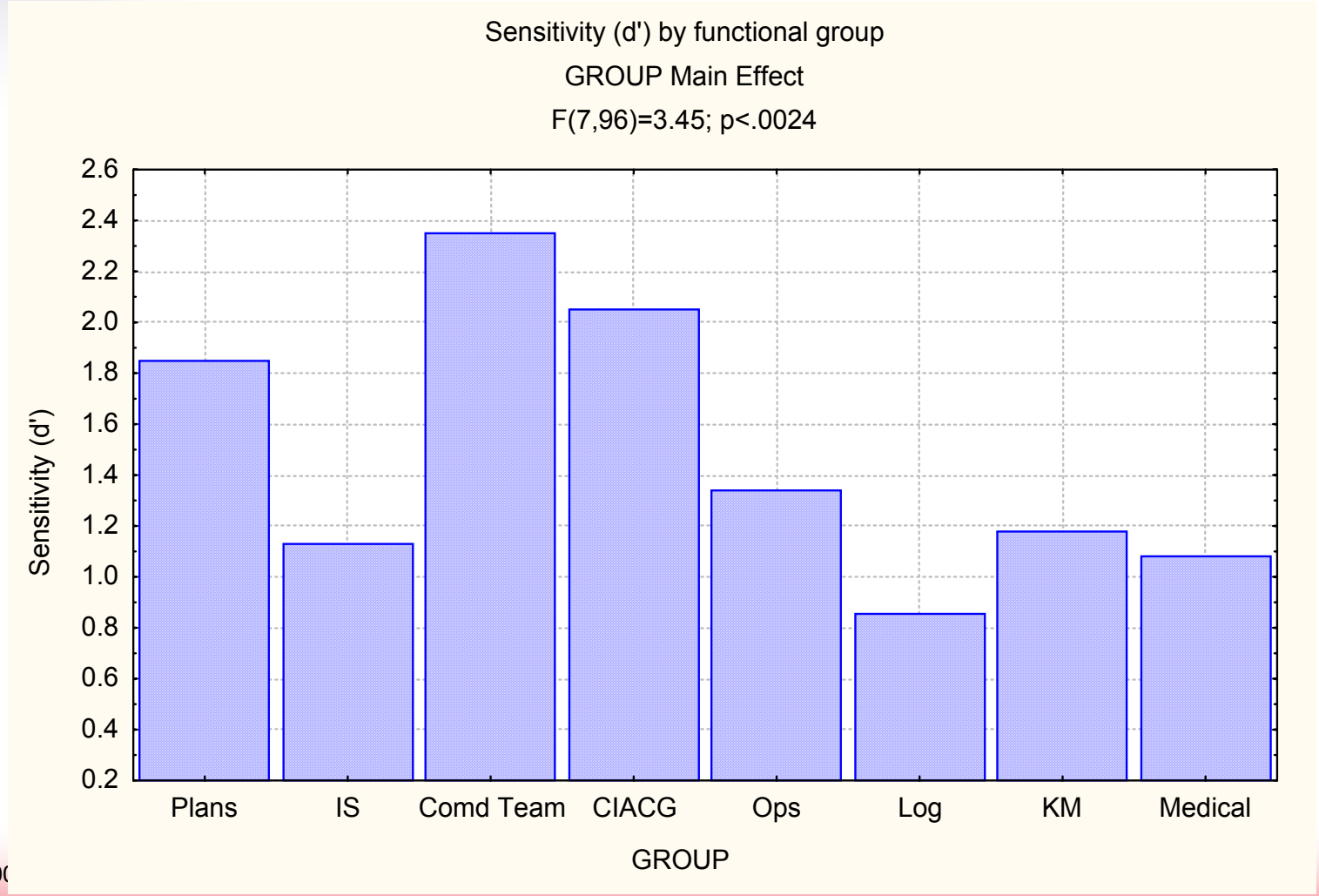
Results

Sensitivity data (d') AKA Performance

Sensitivity (d') by site



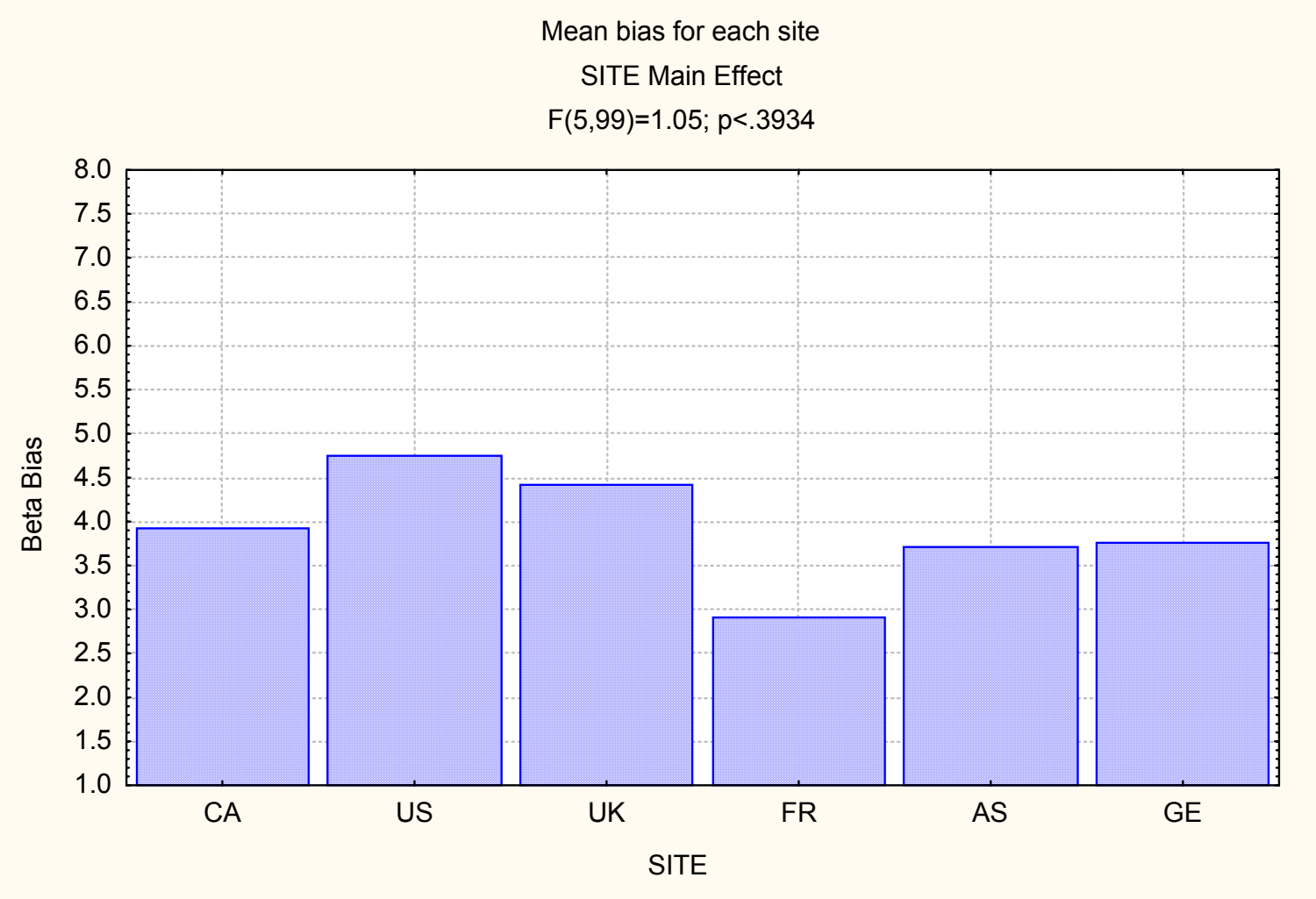
Sensitivity (d') by functional group



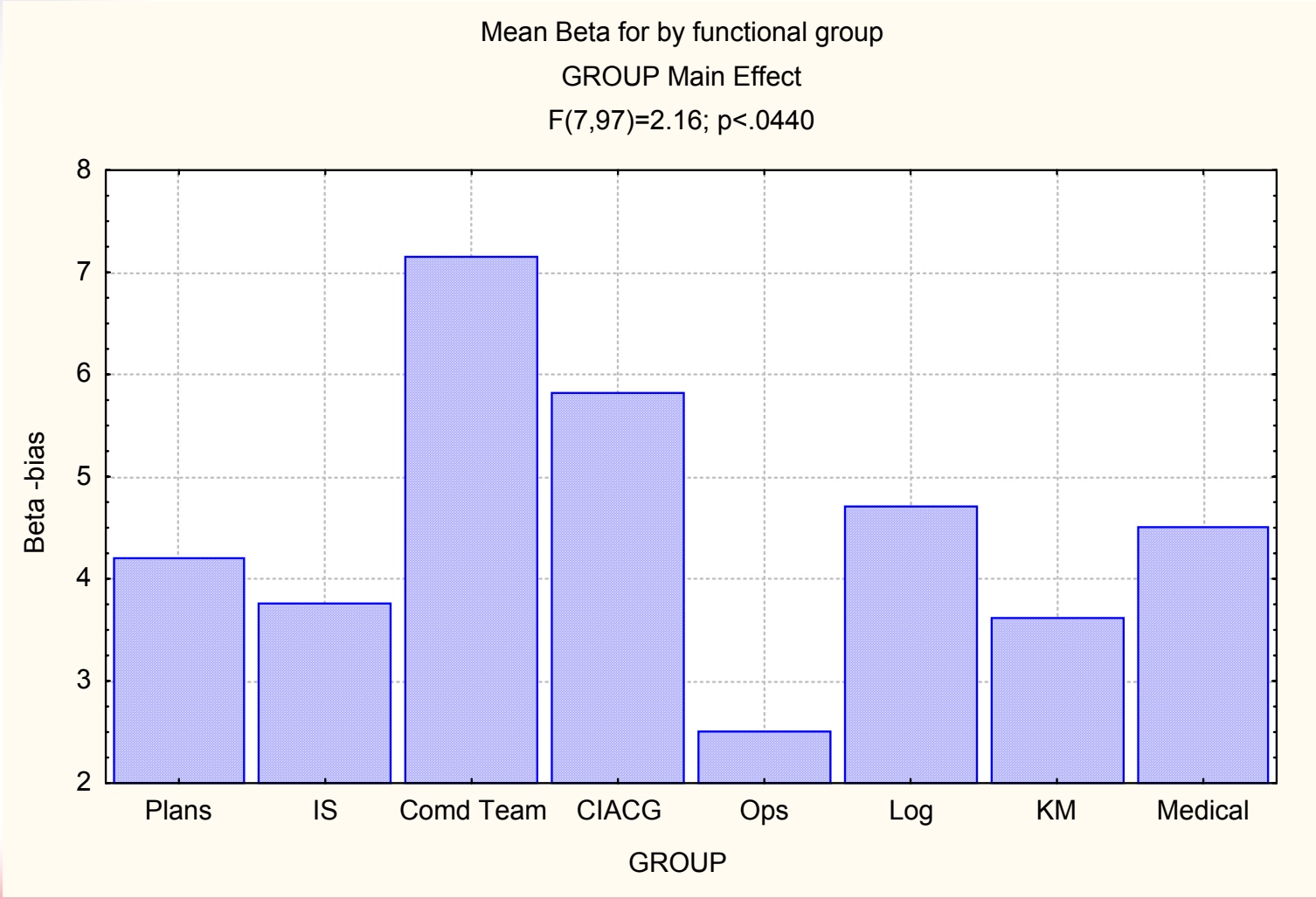
Results

Bias or ß

Bias by site


Mean bias for each site
SITE Main Effect
F(5,99)=1.05; p<.3934
Beta Bias
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
CA
US
UK
FR
AS
GE
SITE

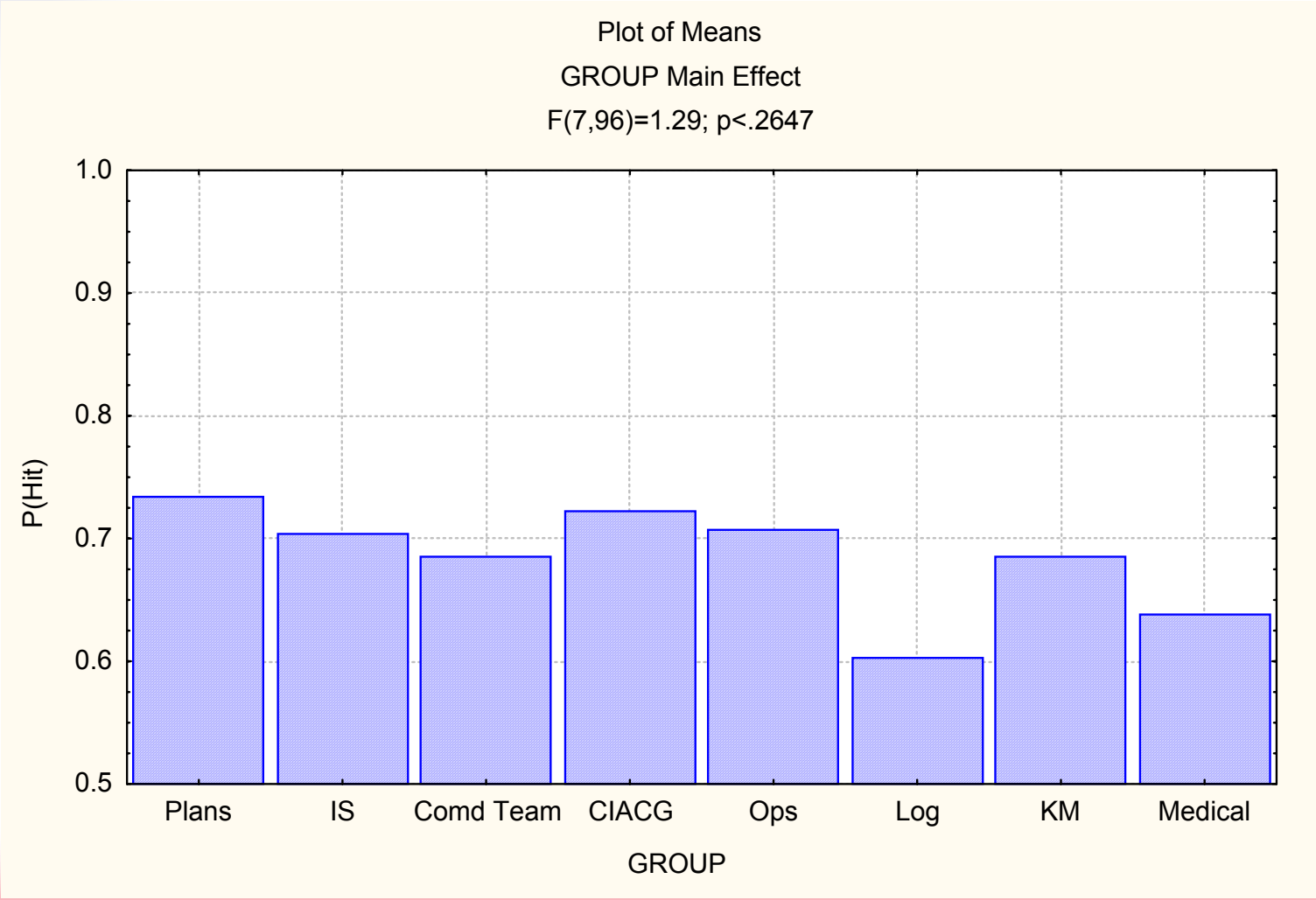
Bias by functional group



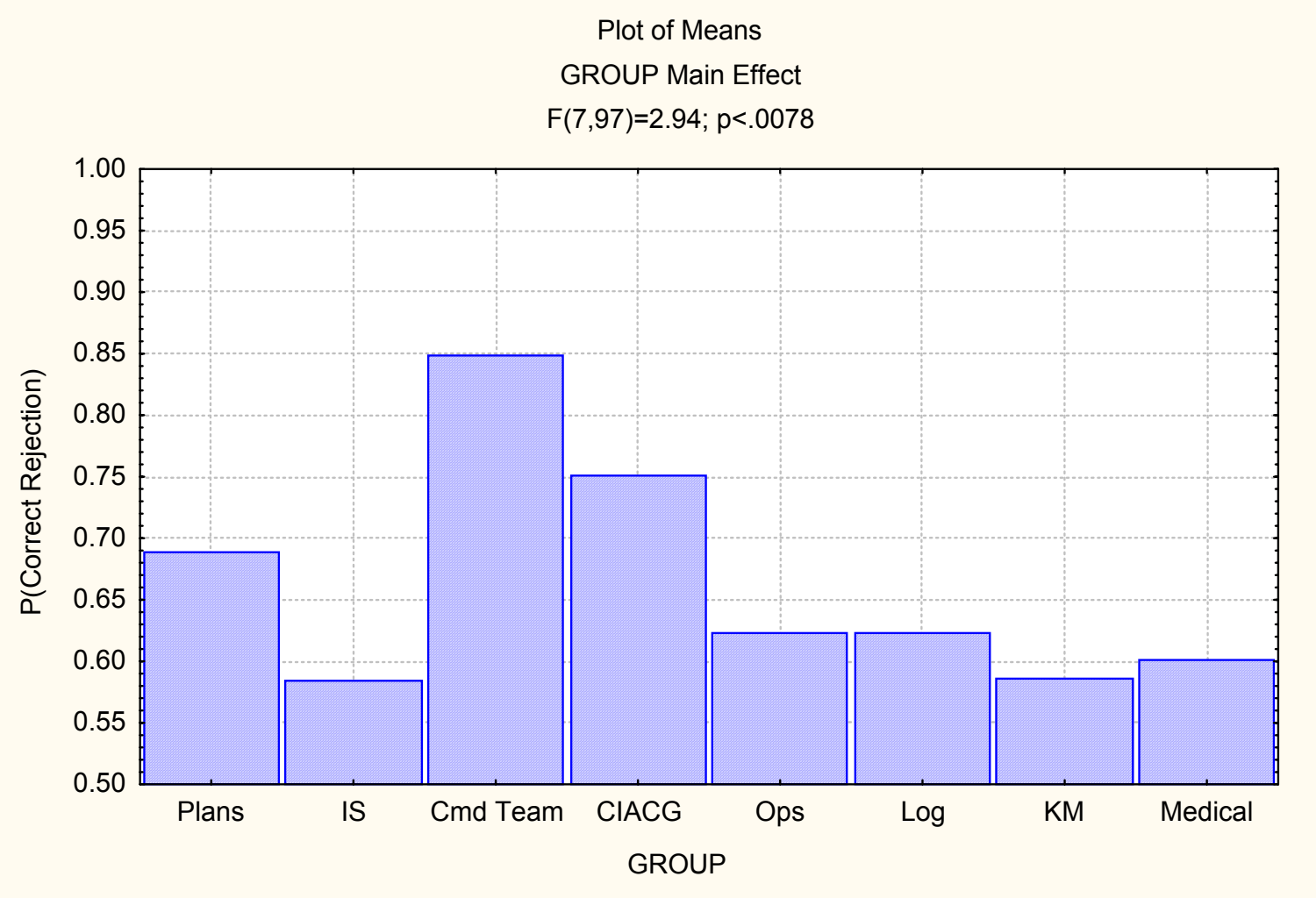
Results

Probability of performance
(Hits and Correct Rejection)

P(Hit)


Plot of Means
GROUP Main Effect
F(7,96)=1.29; p<.2647
P(Hit)
1.0
0.9
0.8
0.7
0.6
0.5
Plans
IS
Comd Team
CIACG
Ops
Log
KM
Medical
GROUP

P(Correct Rejection)



Discussion

d' sensitivity

- Difference between sites (language test or real phenomena in Coalition HQ?)
- Command team, CIACG & to lesser extent Plans were sensitive but not Logs, Medical, KM and IS
- Geographical proximity to the Commander did not appear to assist understanding of intent
- Organisational proximity did appear to assist (executive vs support functions?)
- Generally poor understanding of commander's intent (SCD judgement)

Discussion

ß bias

- No difference between sites
- Command team and CIACG were significantly more risk averse/cautious than rest of CTFHQ
- These groups more willing to reject false information (but miss more true information).
- Could this phenomena provide insight into those people who have the Commander's understanding or is this a function of responsibility/accountability.

Conclusions

1. Commander's intent was quantitatively measured and seemingly sensible results obtained.
2. Generally poor understanding of Commander's intent outside the inner sanctum. A challenge for NEC and EBO? Artefact of experiment? More training required to send and receive a really good CI?
3. Close Geographical proximity to Commander does not determine understanding. Close Organisational proximity does seem to determine understanding. Potentially supportive of NEC, IT can overcome some aspects of geography.

Conclusions

4. A strong language effect identified. Could be an artefact of the test or a real effect. Translated version could provide more data on this issue.
5. Non military participants (CIACG) had a good understanding of the Commander's intent (better than some military participants). Good news for EBP alignment of instruments of power.

Questions