

Paper #047

Command and Control Effectiveness And Operational Success: An Exploration

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Visualization of Research Question

**Measures of C2
Effectiveness**



Real Life Results

Posited Relationships Among C2 Variables

**Measures of C2
Effectiveness**



C2 System



**Operational Success
Or Failure**



**Exogenous
Variables**




Definitions of C2 Effectiveness Variables

Situational Awareness - is the ability of two or more entities (e.g. individuals, units, organizations) to develop a similar awareness of a situation.

Situational Understanding - exists when two or more entities are able to develop a similar understanding of a situation.

Collective Adaptability - the ability of C2 to cope with a Variety of circumstances and stresses by altering structures and Processes (adaptability).

Edge C2	Broad, Deep, Tailored and Dynamic	Broad, Deep, Tailored and Dynamic	High
Collaborative C2	Significant	Significant	Moderate
Coordinated C2	Limited	Limited	Limited
De-Conflicted C2	Focused on the Boundaries	None	Extremely Limited
Conflicted C2	None	None	None
C2 Approach	Degree of Shared Awareness	Degree of Shared Understanding	Adaptability of the Collective C2 Process



Major Combat Operations Statistical Model

A Visual Depiction

Variables

Training (Individual/Collective)
Integrated Combat Power
Decision-Making
Information Processing
Timing
Operational Leadership
Opponent

Factors

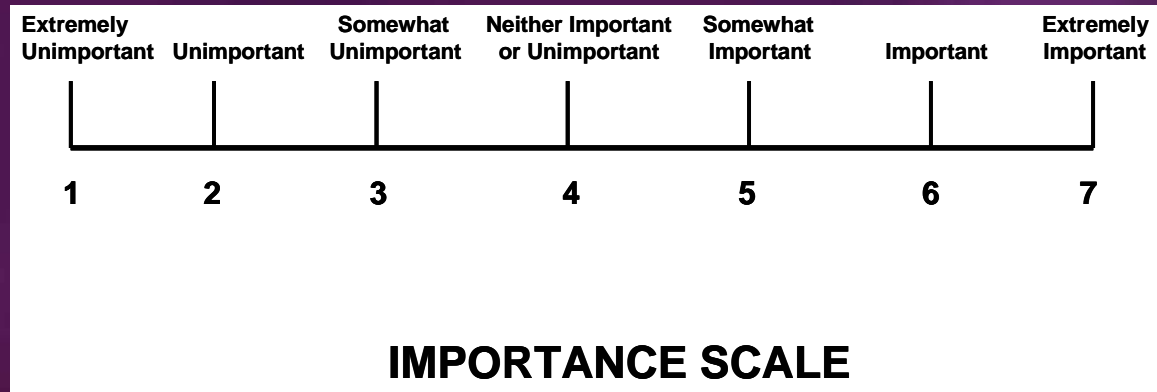
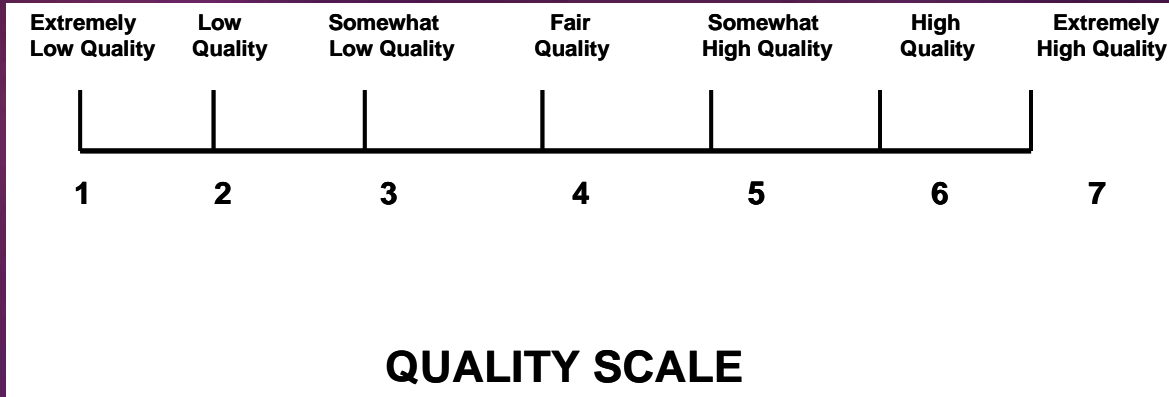
- Capabilities
- Information
- Leadership

Dependency

Joint Operations
Outcome (Success
Or Failure)

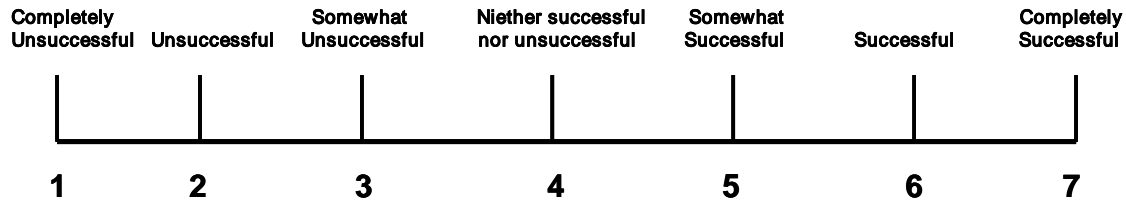


Measurement Scales for Quality and Importance



Measurement of Operational Success

Joint Operational Success means the degree to which the specific major combat operation succeeded in achieving its objectives and/or effects.



Correlational Results

	<i>OS-M</i>	<i>OS-C</i>	<i>SA</i>	<i>SU</i>	<i>CA</i>
OS-M	1.000				
OS-C	0.743	1.000			
SA	0.312	0.373	1.000		
SU	0.319	0.420	0.673	1.000	
CA	0.259	0.439	0.226	0.282	1.000

LEGEND:

- OS-M Operational Success from Main Model
- OS-C Operational Success from Cohort
- SA Situational Awareness
- SU Situational Understanding
- CA Collective Adaptability

Conclusions

- 1. NATO C2 Effectiveness is correlated with Operational Success.**
- 2. Hedge: measured through quality, not effectiveness. Fuzziness.**
- 3. Effectiveness itself not well defined in NATO Model.**
- 4. Strong inter-correlation between Awareness and Understanding.
(Possible statistical bias from the degree of correlation.)**
- 5. Findings reinforce validity of NATO C2 Maturity Model.**