# Sensemaking in the Fog of War:

## An Experimental Study of How Command Teams Arrive at a Basis for Action

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# Sensemaking in Command and Control is **action oriented**

It is focused on the accomplishment of an assigned **mission**.

The **purpose** is to arrive at an understanding of the situation in terms of **what should be done**, and not merely what is happening. This affects how the task is approached.

In real combat there is no way to know if the situation is correctly understood, but one will notice if actions taken are followed by the desired consequences.

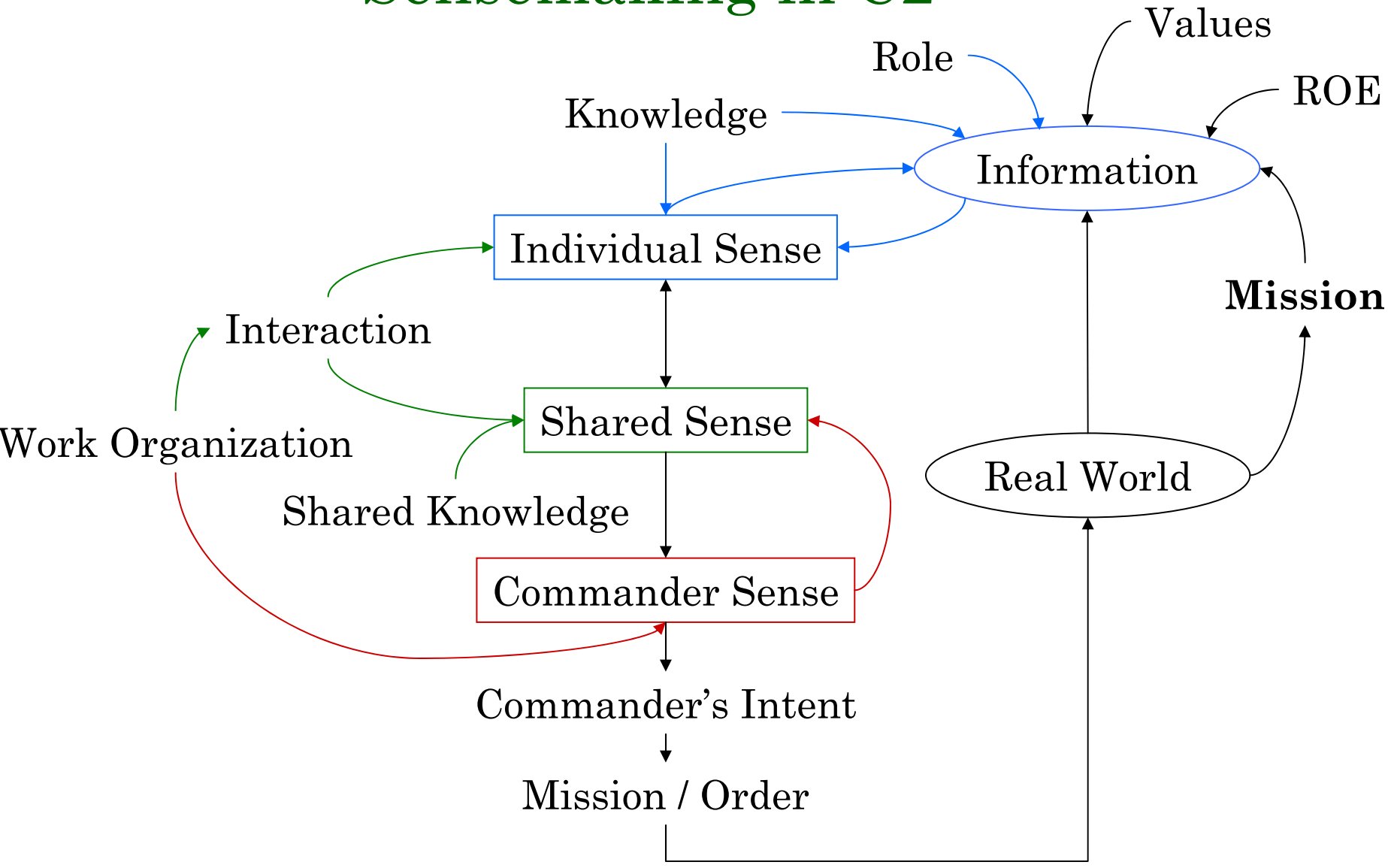
# Purpose of Research

to find a suitable **model** for describing sensemaking in a military command team, and the factors that affect this process

to find a **method** to measure the quality of the sensemaking process at its different stages, and the products resulting from it

in order to be able to **test** in controlled **experiments** the effect of various efforts to **improve** military sensemaking, and thereby also military planning

# Sensemaking in C2



# Sensemaking in C2

Each individual identifies information relevant to his or her professional role in the present situation, based on the mission, rules of engagement, and his or her knowledge base and personal values, and creates his or her **individual sense**.

Each individual creates his or her own sense, and by interacting with each other, communicating and exchanging thought a, to some extent, **shared sense** emerges.

The commander is the person who ultimately decides on the course of action, and the **commander sense** is , for this and other reasons, treated separately.

# Important Factors

Shared knowledge: The more the team members have to explain to each other the slower and more cumbersome the process.

Social climate and interaction: The more information and thoughts are shared, constructive ideas as well as critique, the better.

Organization of work: Well-organized work where good use is made of all team members is desirable. The role taken by the **commander** is considered an important aspect.

# Method (I)

Participants: 16 Teams of 5-7 Army captains, one team member acting as commander

Scenario: A battle scenario at the tactical (brigade) level, in the area of Stockholm, the capital of Sweden.

Task: To produce parts of a brigade order.

Time: 6 hours.

All teams were video recorded.

# Method (II)

Experimental Design:

Two Conditions: 8 teams NCW Info – Low Uncertainty
8 teams – Normal Uncertainty

Expert ratings of plan quality: Two independent raters (inter-rater agreement $r = 0.64$)

Sensemaking ratings: The teams producing two **best** and two **worst** plans in each condition, in total eight teams, were selected, and their sensemaking-process were rated blindly.

# Analysis (I)

## Coding of Videos:

The actions of the team members were observed:

- which **stage** of the planning process the teams were performing: understanding the mission, understanding the present situation, identifying possible courses of actions (COAs), evaluating suggested COAs, and deciding on a COA, and
- **how the team members worked**. If they were working by themselves, together with someone, discussing all team together, giving more formal reports, leading and organizing the work, and so on.

# Analysis (II)

## Sensemaking Performance:

On basis of the observations, the teams' sensemaking performance in the stages **understanding the mission, understanding the present situation, identifying possible COAs, and evaluating suggested COA(s)** was graded, and so was **generation of criteria for success**, an estimate of the **team sense**, and **commander behavior**.

The grades were made on a six-step scale, where 1 was very bad and 6 very good. (Max = 42, Min = 7)

# Results (I)

| Expert Rating | Uncertainty | Sensemaking |
|---|---|---|
| Good | Low | 38 |
| Good | Low | 32 |
| Good | Normal | 33 |
| Good | Normal | 37 |
| Bad | Low | 19 |
| Bad | Low | 21 |
| Bad | Normal | 15 |
| Bad | Normal | 29 |

# Results (II)

## Good Teams Make Good Sense

The teams producing the best plans were also the teams with the best sensemaking process, mean = 35, compared to a mean of 21 for the teams producing the worst plans. $t_6 = 4.24$

There was no difference in performance, neither in plan quality, nor in sensemaking between the experimental, uncertainty conditions.

# Conclusions

Sensemaking in C2 consists of two processes:

- understanding the mission itself, the task at hand
- finding out how to best solve it under the present conditions

The first is more independent of planning, the second is also part of the planning process.

Sensemaking central and important activity in command and control. A good sensemaking process is a precondition for successful planning and subsequent good orders/missions to subordinates.

# Questions or Comments?