

Adaptive coordination in anaesthesia teams and its relationship to clinical performance

Joint research project of three research groups:

Gudela Grote, Michaela Kolbe,
Barbara Künzle & Enikő Zala-
Mező (OAT; ETH Zurich)

Donath Spahn &
Johannes Wacker
(Anesthesia, Univ. Zurich)

Tanja Manser &
Michael Burtscher
(PDA; ETH Zurich)

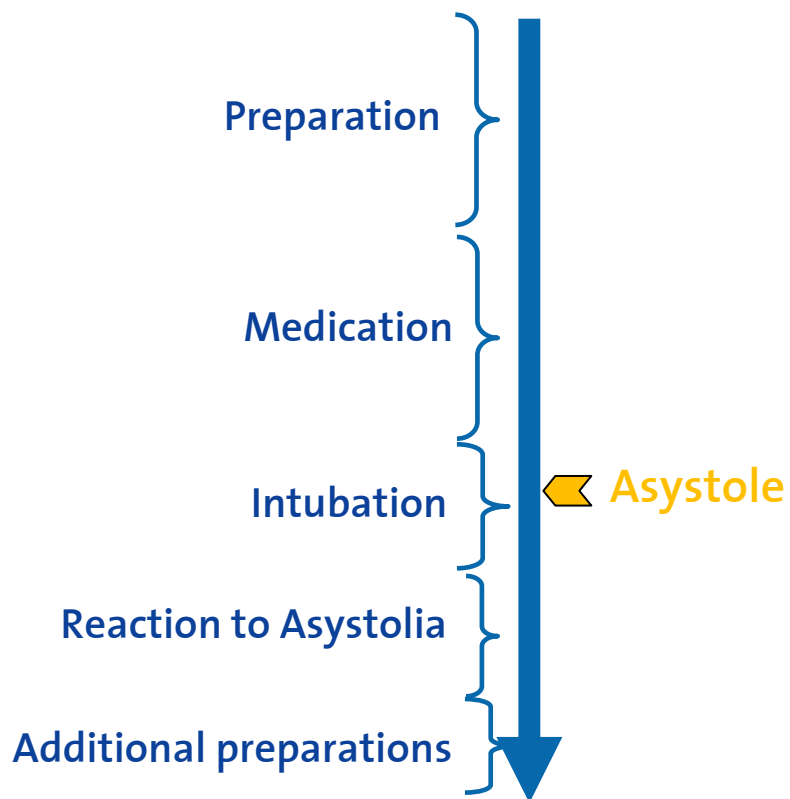
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Theory: Adaptive coordination

- **Work of anaesthesia teams:**
 - Routine as well as high uncertainty and rapidly shifting priorities
- **Assumptions:**
 - Team coordination should be adaptive to situation and workload (Entin & Serfaty, 1999; Espinosa, Kraut & Lerch, 2004; Rico, Sánchez-Manzanares, Gil & Gibson, in press; Serfaty & Kleinman, 1990; Wittenbaum, Vaughan & Stasser, 1998).
 - Adaptive coordination ... appropriate switching from implicit to explicit coordination and vice versa
- **Research questions:**
 - How can adaptive coordination be assessed?
 - Do high-performing teams coordinate more adaptively?

Methods – simulator setting



- Video recordings of 15 inductions to general anaesthesia with one non-routine event (Asystole)
- Team members: 1 resident, 1 nurse anaesthetist, 1 staff anaesthetist (stand by)
- Micro-level coding of coordination behaviour with 2 theory- and behaviour-based taxonomies
- ANTS
- Reaction-time based performance measure

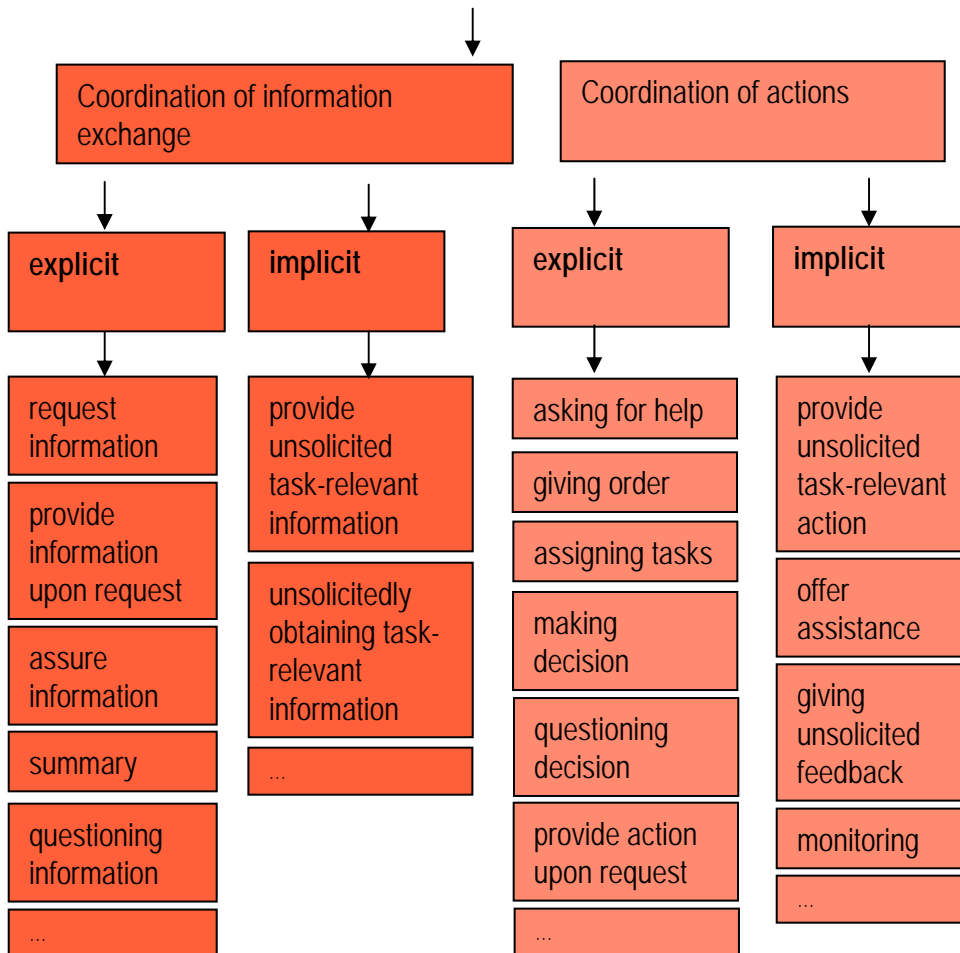
Methods - taxonomy 1

Content	Number of categories	Who executes the coordination activity?					PA / FR addressing ...			Total
		PA	FR	S	RN	O	S	RN	O	
Information management	12	✓	✓	✓	✓	✓	✓	✓	✓	132
Task management	12	✓	✓	✓	✓	✓	✓	✓	✓	132
Coord. via work environment	3	✓	✓	-	-	-	-	-	-	6
Metacoordination	1	✓	✓	✓	-	-	-	-	-	3
Clinical work process	3	-	-	-	-	-	-	-	-	3
Other communication	3	-	-	-	-	-	-	-	-	3
Other	1	-	-	-	-	-	-	-	-	1
Total	34									280

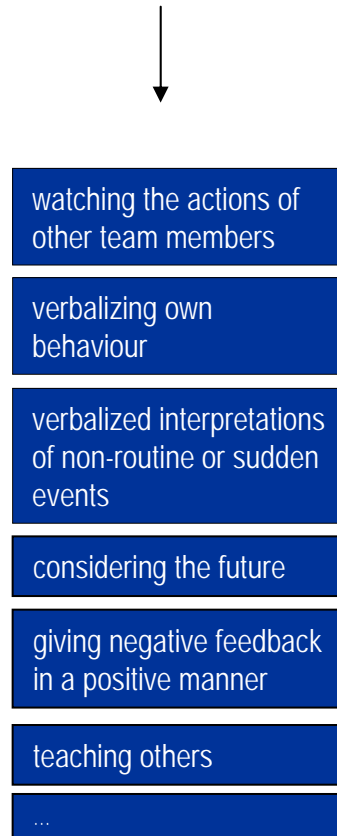
PA=Primary Anesthetologist; FR=First Responder; S=Surgical Crew; RN=Nursing Crew; O=Other (e.g. Pharmacy)

Methods - taxonomy 2

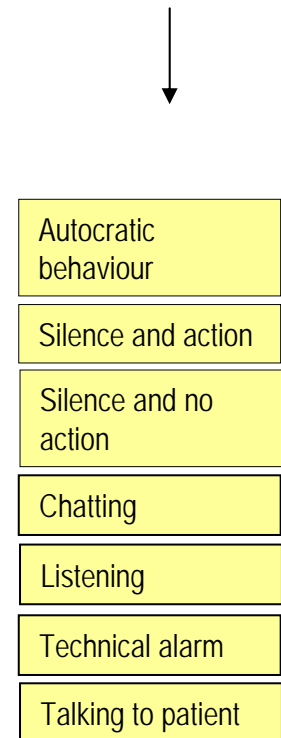
Coordination



Heedful Interrelating



Others



Expected results and further steps

■ **Expected results:**

- Relationship between “adaptiveness” of coordination behaviour and team performance
- Integration of two existing coding schemes based on their psychometric and predictive qualities

■ **Further steps:**

- From simulator to live setting: analysis of 30 general anaesthesia inductions in a live setting and development of a typology of non-routine events
- Use of validated taxonomy and typology of non-routine events to conduct a second simulator study

Thank you!

