Knowledge Acquisition in Small Groups: Consequences of Different Ways of Power Exertion

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INPUT → PROCESS → OUTPUT

1. Theoretical Assumptions

- … are presented by means of the graphical model (see the poster as a whole).

2. Participants and Group Task

- 223 **participants** in 62 mixed-gender groups of three or four members
  - 82 % university students from a lot of different disciplines (average age = 27 years)
  - Experimental analyses with 31 groups (because experimental manipulations were improved in the second set of experiments)
- Complex **group task** with face to face interaction
  - Computer-simulated shirt company (SCHNEIDERWERKSTATT, Süß & Faulhaber, 1990)
  - Possible interventions: Buy new machines, hire or fire workers, advertise etc.
- Experiment advertised as **„Assessment Centre exercise"** with the possibility of receiving a feedback on performance and team behaviour and a compensation depending on team performance (raffle tickets for 600 € in total)
- **Selection of** one male participant for each group as **the actor (who exerts power)** on the basis of different indicators for dominance and cognitive ability

Power exertion
Change of behaviour or experience of another person

Scholl (1999)

Promotive control
Power exertion in line with the interests of target

Restrictive control
Power exertion against the interests of target

Legend of effects:
positive — negative — assumed, but not confirmed — with sign. beta-coefficient (p < .05)

3. Experimental Manipulations (in the second set of experiments)

1. Control mode: promotive vs. restrictive

- Actor was instructed to exert power restrictively or promotively respectively (with examples of relevant behaviour, e.g. „interrupt fruitless discussions" or „provide enough speaking opportunity for each member" respectively)
- Announcement of additional raffle tickets depending on a convincing representation of instructions
- Manipulation check: Targets perceived more restrictive control in the corresponding condition (Eta^2 = .24, p < .01). For perceived promotive control, expected effect only under position power (onetailed p < .10)

2. Power base: expert vs. position

Expert power	Position power
• Actor got expert text about shirt company	• One „company owner" (the actor) + two to three employees
• „Shirt company is owned by all group members"	• Actor was allowed to delegate tasks and to make decisions on his own
	• Actor got PC keyboard

- Manipulation check: Targets perceived more expert power in the expert condition (Eta^2 = .45, p< .001) and more position power in the position condition (Eta^2 = .33, p < .01).

4. Research Questions

1. Does power exertion against the interests of the targets (restrictive compared to promotive control) interfere with the acquisition and application of knowledge in groups? If so …
2. *Why* does this effect occur? ⇨ Explain mediating processes
3. Are the effects of control mode (restrictive vs. promotive) valid independently of the power base? ⇨ Clarify area of validity

SUBJECTIVE EXPERIENCE: Questionnaires after the group task

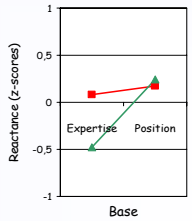
COMMUNICATIVE BEHAVIOUR: Video-based analysis of 22 groups

Reactance of the targets

Item Examples (Cb. Alpha = .83)
- Thoughts and beliefs: „What rubbish!"
- Feelings: „irritated"
- Intentions: „to interrupt him"

Ignoring the ideas of the actor

Unfounded criticism of ideas of actor



	Eta^2
Mode: restr. vs. promot.	.05
Base	.09
Mode x base	.04

- Mode-contrast (one-tailed p < .10) under expert power

⇨ Assumption partially confirmed

- Coding of every speech unit in three sequences of 11 minutes in total per group
- Interrater-reliability (Cohens Kappa) of the measured constructs > .50
- Validity of constructs is unclear, because there are no correlations of indicators of helplessness and reactance with subjective experience

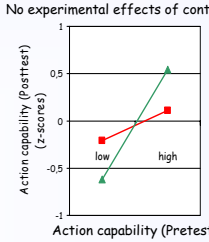
⇨ Difficult to identify mediating processes with regard to communicative behaviour (Exception: see below in this column)

-.29

Action capability

Item Examples (Cb. Alpha = .71)
- „… clear decisions were made." / „… translated into action."

No experimental effects of control mode or power base, but . . .



Multiple regression:
- Stand. *Beta* for product term of the pretest of action capability and control mode (restr. vs. promot.) is -.24 (onetailed p < .10)

⇨ If action capability is low, restrictive control can rise it to a medium level. If it is high, only promotive control can further enhance it.

.56

without inclusion of helplessness: -.29
with inclusion of helplessness: -.13 (not sign.)

.42

-.32

5. General Information about the Analyses

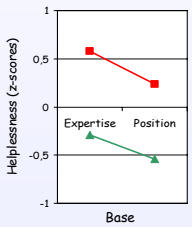
- Pretest-posttest-design
- Pretests of dependent variables (and sometimes additional variables) were partialled out in all analyses: experimental, regression, correlational !!

Helplessness of the targets

Item Examples (Cb. Alpha = .86)
- Thoughts and beliefs: „I can't concentrate."
- Feelings: „intimidated"
- Intentions: „I felt as if I were paralysed."

Less own ideas expressed

Uncritical approval of the ideas of the actor



	Eta^2
Mode: restr. vs. promot.	*** .27
Base	.05
Mode x base	.00

*** p < .01

⇨ Assumption confirmed

- The negative effect of restrictive control on the actor's task knowledge is **m e d i a t e d** by the helplessness of the targets.

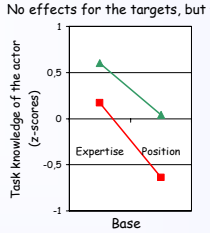
Why is there less task knowledge due to helplessness?
- The helplessness of the target is positively correlated (.38, p < .10) with unfounded simple suggestions of the targets (e. g. „Let's hire two workers.").
- Unfounded simple suggestions of the targets are negatively correlated (-.47, p < .05) with task knowledge of the group.

⇨ Restrictively controlling actors learned less from the targets because those reacted helplessly and thus contributed more unfounded simple ideas.

Acquisition of task knowledge

Knowledge test about the shirt company (Kersting and Süß, 1995)
- System knowledge and action knowledge
- Cb. Alpha = .69

No effects for the targets, but for the actor . . .



	Eta^2
Mode	** .21
Base	*** .29
Mode x base	.02

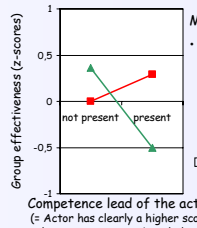
** p < .05 *** p < .01

⇨ Assumption partially confirmed

Group effectiveness

Total capital of the shirt company after 12 simulated months

No experimental effects of control mode or power base, but . . .



Multiple Regression:
- Stand. *Beta* for product term of competence lead of the actor and control mode (restr. vs. promot.) is .23 (onetailed p = .130)

⇨ There is a tendency for the assumed effect if actor has the same or less competence than targets on the task

6. Summary and Conclusions

- It is important, *how* power is used: against (restrictively) or in line with (promotively) the interests of the targets.
- Restrictive control harms the actors themselves: They do not benefit from the knowledge of the targets, because the targets react helplessly and make more „helpless" contributions.
- This effect is independent of the power base (expertise or position).
- Promotive control is especially useful if . . .
  - the targets' knowledge and active involvement is crucial (e. g. in complex tasks)
  - action capability is not threatened

References
- Kersting, M. & Süß, H.-M. (1995). Kontentvalide Wissensdiagnostik und Problemlösen: Zur Entwicklung, testtheoretischen Begründung und empirischen Bewährung eines problemspezifischen Diagnoseverfahrens. *Zeitschrift für Pädagogische Psychologie, 9,* 83-93.
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