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absolventská stáž

Daniela Jakubková 2019 / 2020

Akademie věd ČR, Pražská pobočka

Oddelenie kognitívnej psychológie



AKADEMIE VĚD
ČESKÉ REPUBLIKY

Psychologický ústav, Akademie věd ČR Hybernská 8, 110 00 Praha, ČR

- Psychologický ústav bývalej Československej akadémie vied v Prahe, s pobočkou v Brne bol založený 1.4.1967

Činnosti:

- Výskumy v oblasti psychológii osobnosti, sociálnej psychológie a kognitívnej psychológie,
- Rozvoj metodológie psychologických výskumov
- Časopis **Československá psychologie** s impaktovým faktorom 0.193 (r.2017)

Vedúca pražskej pobočky: PhDr. Iva Šolcová, Ph.D.



Laboratoř behaviorálních a lingvistických studií

(zdiel'ané pracovisko FF Univerzity Karlovej a AVČR)

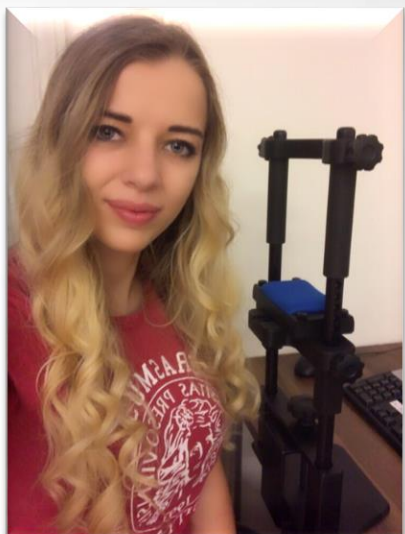


Laboratórium experimentálnej psychológie

- Samostatný útvar – zabezpečuje priestorové a technické možnosti pre prevádzanie experimentálnych a observačných výskumov

Priestory:

- Miestnosť pre zber dát pomocou technických zariadení (počítače, monitory očných pohybov, eye tracker),
- Miestnosť pre pozorovanie a zaznamenávanie voľných interakcií (napr. rodičia s deťmi),
- Dielňa a prípravná miestnosť



Nádherný výhľad z miesta
pôsobenia ako BONUS ☺





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Aktivity počas stáže:

Príprava experimentálnych stimulov, kódovanie a príprava experimentálnych protokolov

Zoznámenie sa s modernými metódami psychologickéj vedy

Rešerše literatúry a spoluúčasť na písaní manuskriptov

Príprava a administrácia experimentu

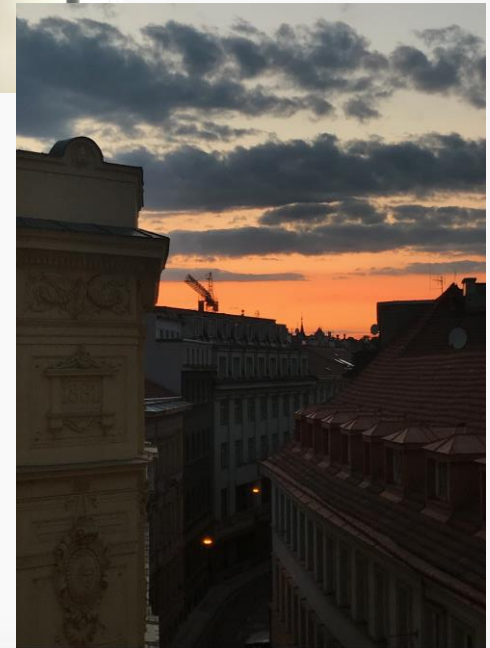
Zber a analýza dát

Príprava materiálov a prednášky na konferenciu Kognitivní škola

UBYTOVANIE

počas stáže

❖ súkromný byt



FOTOGALÉRIA

zo stáže

- ❖ Natáčanie pre českú televíziu $\Rightarrow$ Prémie Otto Wichterleho 2019
– Mgr. Filip Děchtěrenko, Ph.D. (*mentor*)



INTRODUCTION

There are various theories and assumptions about how people track multiple moving objects. For this purposes, researchers commonly use Multiple Object Tracking task. What remains to be questioned is whether this task is relevant to tracking outside of laboratory settings.

METHOD → PILOT

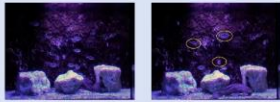
Participants

The pilot version involved 10 University students. There are 3 men in the sample and 7 women. The average age of participants is 22.2 years with a standard deviation of 1.45 years.

Design

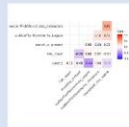
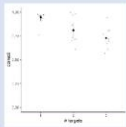
Fishes: 12 – 17
→ targets: 1, 2 or 3
→ distractors: 10 – 16

Experimental trial: 158



RESULTS → PILOT

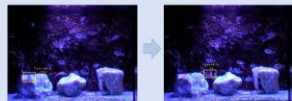
- Considering the results, an attempt was made to decode the possible factors why the task was difficult.
- Individual fish were encoded, and factors were searched to explain this.



FISH MOVEMENT

- After the pilot version, a model of fish movement was created using manual coding.

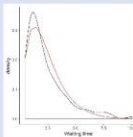
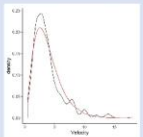
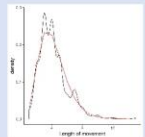
Fish movement coding:



- Analysis of the type of movement showed that the fish either move (81% of cases) or stay still on the place (19%).

- Probabilistic distributions were searched for all these measured values to represent the movement.

- The gamma distribution proved to be the best



Type	Rate	Shape
trajectory length	1.279	5.344
velocity	0.773	2.977
waiting time	0.931	2.223

Model of moving fish



the scheme was used to create artificial fish for the task "fake fish"

METHOD → EXPERIMENT 1

Participants

Experiment 1 involved 13 University students (2 men, 11 women). The average age of participants is 20.5 years with a standard deviation of 2.26 years.

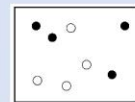
* Data collection is not complete yet.

Design

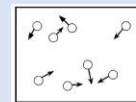
3 conditions:
• normal MOT
• fake fish
• real fish

2 difficulty levels:
• 2 targets
• 4 targets

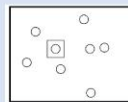
Experimental trials:
• normal MOT: 97
• fake fish: 97
• real fish: 97



(a) Cue phase



(b) Move phase

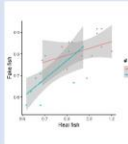
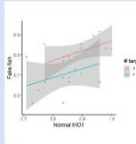
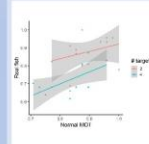


(c) Query phase

RESULTS → EXPERIMENT 1

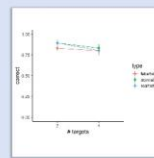
- One participant with search level performance was filtered.

Relations of individual variables



Correlations:

	fake fish	normal	real fish
fake fish	1	0.42	0.69
normal	0.42	1	0.53
real fish	0.69	0.53	1



overall performance graph

CONCLUSIONS

- In view of the results of this study, there appears to be a significant correlation between Multiple Object Tracking in the laboratory task and naturalistic Multiple Object Tracking. Research has shown that there is a medium of strong to strong relationship between tasks. Further research with a larger and more balanced sample is needed to clarify this relationship.

REFERENCES

- Pylyshyn, Z. W., & Storm, R. W. (1988). Tracking multiple independent targets: Evidence for a parallel tracking mechanism. *Spatial Vision*, 3, 179-197.
- Avi, E., & Paulsen, H. (2000). Evidence for split attentional foci. *Journal of Experimental Psychology: Human Perception and Performance*, 26(2), 834-846.
- Zelinsky, G. J., & Neider, M. D. (2008). An eye movement analysis of multiple object tracking in a realistic environment. *Visual Cognition*, 16(3), 553-566.

POSTER – konferencia Kognitivní škola

MULTIPLE FISH TRACKING

Daniela Jakubkova, Filip Dechterenko

Institute of Psychology, Academy of Sciences of the Czech Republic

Conclusions

In view of the results of this study, there appears to be a significant correlation between Multiple Object Tracking in the laboratory task and naturalistic Multiple Object Tracking. Research has shown that there is a medium of strong to strong relationship between tasks. Further research with a larger and more balanced sample is needed to clarify this relationship.

VOLNOČASOVÉ AKTIVITY

Praha a okolí – neobmedzené možnosti 😊





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najlepšia príležitosť a
najkrajšie obdobie