

The affective touch and pain perceptions are distinct phenomena in both vicarious and first-hand somatosensory experience



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INTRODUCTION:

The perception of interoceptive stimuli such as pain and affective touch has a multi-component nature and results from the interaction of different aspects, such as perceptive, cognitive and emotional.

AIM:

- To improve knowledge about the perception of pleasant vs painful stimuli in observed and direct modes.
- To Disentangle whether the pain threshold or empathy for others' pain can influence the perception of the vicarious or direct experience of affective touch.

METHODS

1-Self Report Questionnaires

- Social Touch Questionnaire (STQ)
- Beck Depression Inventory (BDI-I)
- Allodynia Symptom Checklist 12 (ASC-12)
- State-trait anxiety inventory (STAI-Y 1,2)

2-PAIN ASSESSMENT

Vicarious Pain Experiences Questionnaire (VPQ)

- 16 video clips depicting mild-moderate pain
 - N. pain responses
 - Average pain intensity

Direct Pain Perception

- Electrical stimuli: 500 μ s duration, frequency of 1Hz
- Pain threshold (T): average of 3 pain threshold intensities
- Twelve stimuli: 6 <T (TX0,5) + 6 >T (from TX1,5 to TX2)
- 0-10 Pain numerical ratings scale

3-AFFECTIVE TOUCH PROTOCOL

4 Stroking Velocity Conditions:

- two CT-optimal (AT: 3 cm/s and 6 cm/s) 10s x 3
- two not CT- optimal (NAT: 18 cm/s and 30 cm/s) 10s x 3

2 Randomized Sessions:

- Vicarious touch (12 video clips of hand stroking)
- Direct touch (12 skin-to-skin hand stroking)



Vicarious touch



Direct touch

Pleasantness
Vividness
11-points Likert scale
Measures

RESULTS

PAIN PERCEPTION

MATRIX OF CORRELATIONS

VARIABLE	VPQ N. Pain responses	Pain perception (> T)	STQ	BDI-I
Pain perception (> T)	0.368*	—	0.311*	—
VPQ Pain intensity	0.616***	—	—	—
STQ	—	0.311*	—	0.352*
STAY-S	—	—	0.307*	—
STAY-T	0.361*	0.349*	—	—
ASC-12	—	—	—	0.302*

* p < .05, ** p < .01, *** p < .001

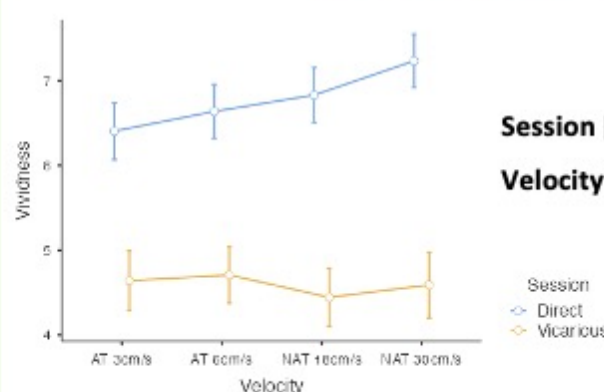
N 43 healthy participants (29 F, mean age 26 y.o. \pm 5,89)

AFFECTIVE TOUCH BEHAVIOUR

ANOVA RM

Session [F(1, 42)=36.16; p < .001]

Velocity*Session [F(1.87, 78.61)=4.33; p = .018]

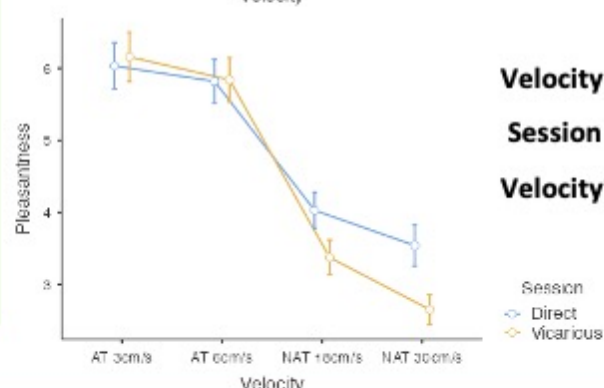


ANOVA RM

Velocity [F(1.4, 58.94)=69.99; p < .001]

Session [F(1, 42)=4.62; p = .04]

Velocity*Session [F(2.73, 114.53)=7.94; p < .001]



CONCLUSION

- Pain and Affective Touch (AT) perception could not be mutually influenced, as they seem to be distinct phenomena.
- How we experience the pain on our skin is linked to the pain we feel when watching someone else suffering.
- Vicarious and direct experiences of the pleasantness of AT are similar; also, AT is more pleasant than Not-AT.
- Experiencing real touch is more agreeable and vivid than a video.

- Meijer, L. L., Ruis, C., van der Smagt, M. J., Scherder, E. J., & Dijkerman, H. C. (2022). Neural basis of affective touch and pain: A novel model suggests possible targets for pain amelioration. *Journal of Neuropsychology*, 16(1), 38-53.

- Ward, J., & Li, M. (2022). The Vicarious Experiences Questionnaire (s): Online Tools for Measuring Mirror-Touch and Vicarious Pain.

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