The Dance Sophistication Index[1]

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Rationale:

- Dancing includes elements of memory, motor actions, perception, performance, and nonverbal social communication.
- As such, dance is an important topic for psychology, cognitive neuroscience and embodied art-based interventions.
- E.g. Dance can facilitate therapies for neurodegenerative conditions such as Parkinson's disease and dementia.
- But, no standardized psychometric instrument exists to assess people's dance experience.
- Inspired by the Goldsmiths Music Sophistication Index[2], 'dance sophistication' was operationalized as a combination of perceptual and practical dance experience[3], leading to a new standardized self-report measure: The Dance Sophistication Index (DSI).

Workshop → Data Reduction → Factor Modelling

Development of DSI Measure:

1. Item Generation included two approaches during a workshop:
- a) novel questions devised using Grounded Theory
- b) the 39 questions from the MSI were adapted for dance.

2. Data Reduction Processes
- 140 initial questions reduced to 76 (+4 demographic; n=424)
- 12 variables with skewness or kurtosis >±2 removed
- McDonald's Omega = 0.69
- Series of hierarchical factor models compared in Bayesian Information Criterion model = one primary factor, and six secondary factors.

3. Model Development, Evaluation and Validation
Two new sample sets (Construction of Factorial Model, n=127; Confirmatory Factor Analysis, n=190) to avoid overfitting and enable generalizability.
- 7 new items to capture participant demographics
- 3 additional questionnaires to validate DSI:
- Multidimensional Assessment of Interoceptive Awareness[4]
- Openness to Experience subscale from Big Five Inventory[5]
- Gold-MSI[2]

Results

The 4+1 DSI model captures primarily practical dance performance experience, and a separate model captures the perceptual experience of watching dance.
The final DSI questionnaire contains 26 items and takes 5 minutes to complete.

Internal validity by DSI Factor	Items	Cronbach's
Active Dance Experience	20	0.93
Body Awareness	6	0.90
Social Dancing	6	0.91
Urge to Dance	5	0.83
Dance Training	3	0.82
Observational Dance Experience	6	0.79
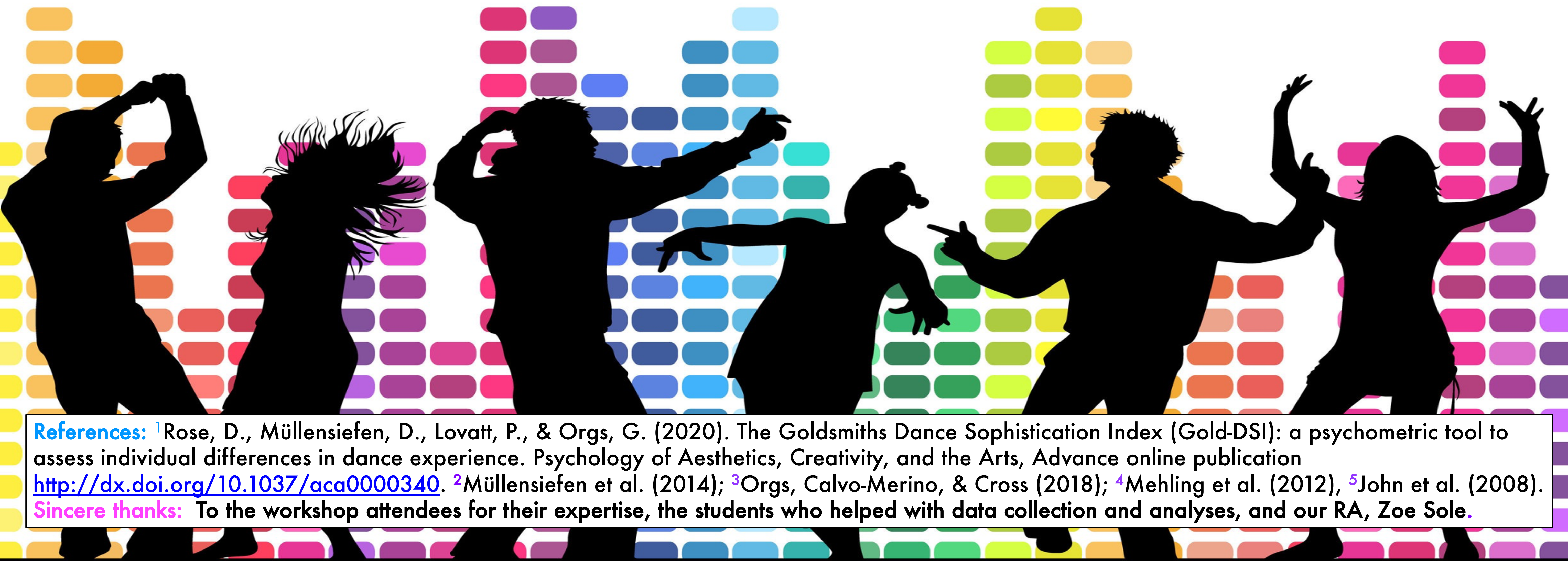
References: [1]Rose, D., Müllensiefen, D., Lovatt, P., & Orgs, G. (2020). The Goldsmiths Dance Sophistication Index (Gold-DSI): a psychometric tool to assess individual differences in dance experience. Psychology of Aesthetics, Creativity, and the Arts, Advance online publication http://dx.doi.org/10.1037/aca0000340. [2]Müllensiefen et al. (2014); [3]Orgs, Calvo-Merino, & Cross (2018); [4]Mehling et al. (2012), [5]John et al. (2008).