

Static versus dynamic emotion recognition in primary progressive aphasia: evidence for primary or secondary deficits

Natacha Cordonier^{1,2}, James Carrick^{1,2}, Her Teng^{1,2}, Rebekah Ahmed^{3,4}, and Olivier Piguet^{1,2}

¹Brain and Mind Centre, The University of Sydney, AU; ²School of Psychology, The University of Sydney, AU; ³School of Medical Sciences, The University of Sydney, AU; ⁴Memory and Cognition Clinic, Royal Prince Alfred Hospital, Sydney, AU

TAKE-HOME

All three PPA variants show **emotion recognition deficits** with **distinct task-specific profiles**, suggesting **different underlying mechanisms**
→ task modality should be considered in both research and clinical assessment of PPA

Background

Emotion recognition is impaired in primary progressive aphasia (PPA)¹

KNOWLEDGE GAPS

- Few studies compare all three PPA variants: nonfluent (nfvPPA), semantic (svPPA), logopenic (lvPPA)^{2,3}
- No study has directly compared static and dynamic task modalities across variants

Objectives

- Compare static and dynamic emotion recognition across the three PPA variants
- Determine whether deficits are primary or secondary to other cognitive impairments

Methods

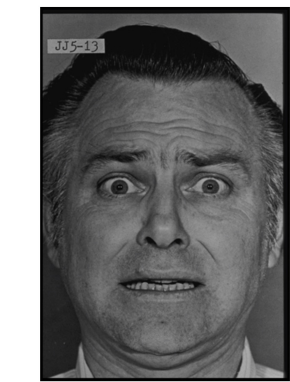
PARTICIPANTS

	HC	nfvPPA	svPPA	lvPPA	p
N	53	12	14	11	-
Age (y)	67.1	66.8	62.2	65.0	.190
Education (y)	13.0	12.6	12.2	13.6	.675
Disease dur. (y)	-	2.08	5.14	4.18	<.001
CDR SoB	-	1.33	3.05	3.1	.023

TASKS

Emotion recognition

Static B&W faces:
Ekman 60



Happy Surprised Neutral Sad
Disgusted Angry

Dynamic video clips:
TASIT



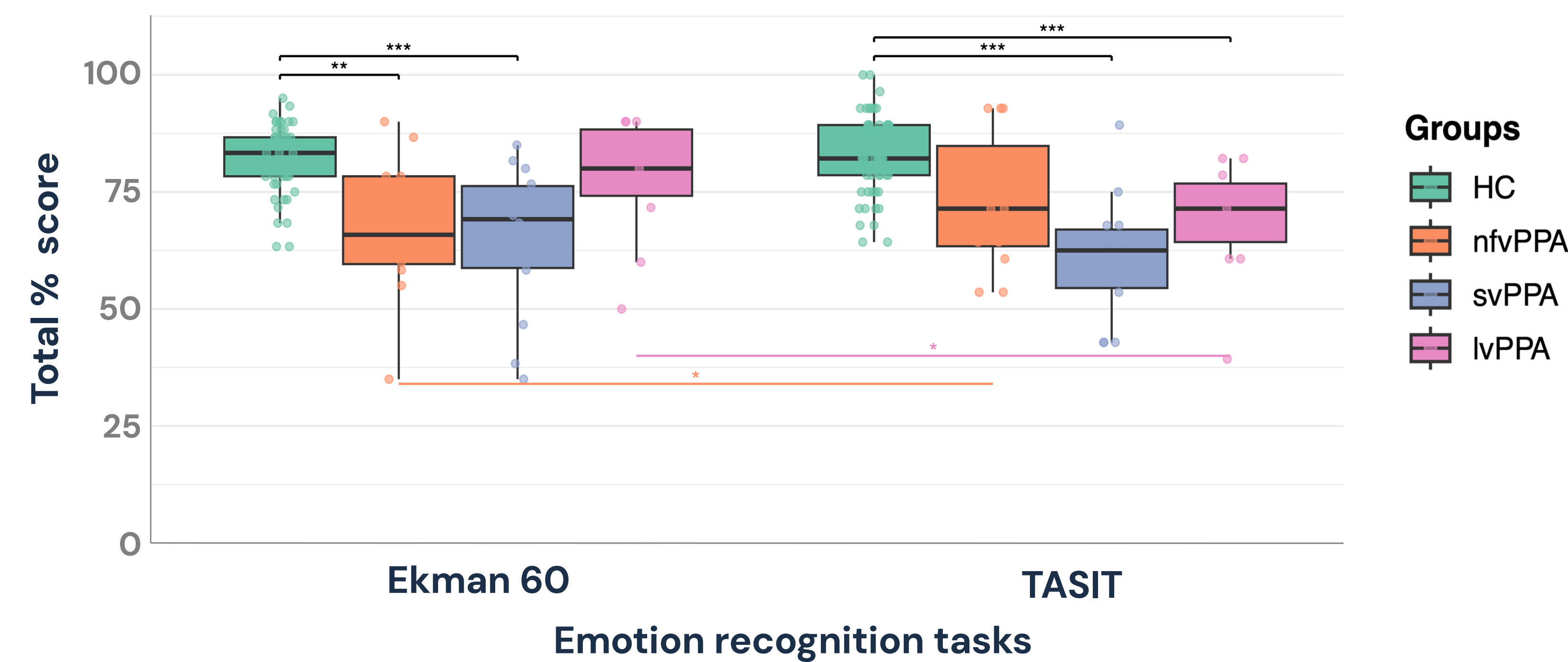
Happy Sad Angry Anxious
Surprised Revolted Neutral

Neuropsychological assessment

Global cognition, language (SYDBAT), face perception, memory, and executive functions.

Results

FIGURE 1 – PERFORMANCE PER GROUP AND TASK



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

BETWEEN-GROUP COMPARISONS

nfvPPA

↓ vs HC on **static** task only

svPPA

↓ vs HC on **both** tasks

lvPPA

↓ vs HC on **dynamic** task only

ACROSS PPA

No differences

WITHIN-GROUP COMPARISONS

nfvPPA

Static < Dynamic

svPPA

Static = Dynamic

lvPPA

Static > Dynamic

COGNITIVE CORRELATES OF EMOTION RECOGNITION

nfvPPA:

marginal correlations with **face perception** in both tasks

svPPA:

correlations with **language** and **face perception** in both tasks

lvPPA:

no significant correlations in both tasks

Discussion

Emotion recognition is impaired across all PPA variants^{1,4}, with distinct task profiles and cognitive correlates

Variant	Task ↓	Correlates	Deficit
nfvPPA	Static only	Face perception	Secondary
svPPA	Both	Language + face	Primary
lvPPA	Dynamic only	None	Primary

Pattern consistent with dissociable neural pathways for static vs. dynamic processing⁵

Clinical implications

- Accurate PPA diagnosis requires **considering the full cognitive profile**, beyond language functions alone
- Task selection matters:** both static and dynamic tasks are needed
 - Supports differential diagnosis
 - Informs tailored therapeutic approaches

References

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