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(PPD)**

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Semantic analysis of Self-Defining Memories (SDM) emotional content among antisocial forensic inpatients without (ASPD) or with psychopathic personality disorder (PPD)

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Introduction

Self-Defining Memories (SDM) are autobiographical memories, associated with an intense affective charge which enables the memory persistence over time and plays a role in the Self identity establishment (self-consistency and self-coherence). SDM exhibit four main characteristics: a) specificity (memory with a time window of less than 24 hours and sensory details), b) affect (memory with positive or negative, or mixed emotions), c) content (memory with a central theme such as relationship, physical threat, etc.) and d) integration (memory from which the person can learn, and which will build his identity). Self-consistency along with the ability to learn from an experience were found to be impaired among antisocial offenders, suggesting to be a key-factor in the perpetration of new offences. ASPD offenders are characterized as highly impulsive and irritable, transgressive of social and legal norms, and disregarding others and their security. A severe form of this PD appears to be the PPD, with interpersonal-affective features as narcissistic traits (loquacity, superficial charm or over-estimation of Self, etc.), lack of remorse and empathy or the inability to assume responsibility, in addition to antisocial traits. Although still rarely studied, a growing body of literature is now focusing on SDM among ASPD/PPD offenders. Previous research highlighted that ASPD exhibit deficit in the integration and recall of integrated and specific SDM. PPD exhibit deficit in their autobiographical memory, consisting in a distancing of memory recall, using the 3rd person during the SDM recall. Thereby, little is known about the words used by ASPD and PPD forensic inpatients during the recall of SDM, whereas the use of words is significant and can reveal clues about the personality, the motivation, the cognitive and social resources of individuals.

Main objective: Comparison of semantic cues between forensic inpatients (ASPD and PPD), and non-clinical participants (NCP) for naturalistic emotions production through the recall of SDM

Method

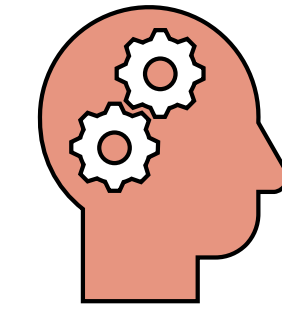
Participants

Sample is composed of 69 male participants: ASPD forensic inpatients ($n = 17$), PPD forensic inpatients ($n = 13$) and non-clinical participants ($n = 39$). Forensic inpatients were interned in a High-Security Forensic Hospital because considered 'not guilty for reason of insanity' (NGRI) according to the Law on the internment of persons (2014). ASPD ($M = 46,59$; $SD = 15,04$) and PPD ($M = 42,38$; $SD = 12,14$) forensic inpatients were significantly older ($U = 58,50$; $p < .001$) than NCP ($M = 26,82$; $SD = 2,64$). Moreover, both forensic samples were significantly less educated (ASPD: $M = 8,12$; $SD = 2,89$ and PPD: $M = 7,15$; $SD = 1,852$) than NCP ($M = 14,49$; $SD = 2,45$). Forensic samples exhibited a least a Major Mental Disorders diagnosis (56,70%) mainly with an Addiction Disorders (43,30%), on substance (23,30%) and on alcohol (10,00%). All forensic inpatients were diagnosed with ASPD (Cluster B) whom a small prevalence exhibited comorbidity with Borderline PD (30,00%) and Narcissistic PD (16,17%). On a criminal level, the most prevalent non-sexual infraction was 'violent robbery' (33%) and the least prevalent was 'threat' (16,70%). For the sexual infraction, the most prevalent sexual infraction was 'rape' (33%) and the least prevalent was 'indecent exposure' (23%).

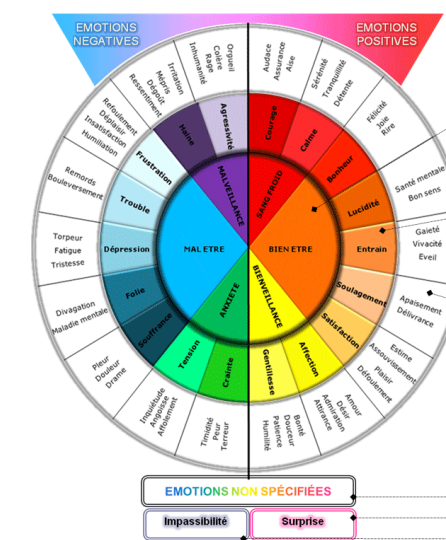
Instruments and Procedure



Diagnostic assessment
 MINI, SCID-II, PCL-R



SDM Task
 Recall 5 SDM
 (recorded speech and video)



EMOTAIX Text Analysis

3 levels:
 Global (6): anxiety, well-being, etc.
 Intermediate (18): hate, affection, etc.
 Specific (56): disgust, love, etc.
 2 valences: positive and negative
 + unspecified emotions, surprise and impassibility

Data Analysis

Each participant had to recall 5 SDM, leading to a sample size of 335 SDM (n ASPD = 83; n PPD = 60; n NCP = 192) for the emotional semantic cues analysis and 336 SDM (n ASPD = 81; n PPD = 62; n NCP = 193) for the SDM characteristics analysis. In the absence of normality of our variables (Kolmogorov-Smirnov), we conducted non-parametric groups comparison analyses (Kruskal-Wallis H), followed with Mann-Whitney U post hoc tests (Dunn-Bonferroni correction). We compared the three groups in term of absolute values and proportions of positive, negative, and not specified words recalled (p -value corrected at .017). High versus low-activation emotions were considered, with a p -value corrected (.025). We also compared the groups on the SDM recalled characteristics (specificity, integration, valence and theme) using Chi-Square (χ^2) and Fischer Exact test analyses.



Results

1. Descriptive Statistics on SDM emotional semantic cues for each group:

	ASPD ($n = 83$)		PPD ($n = 60$)		NCP ($n = 192$)	
	M	SD	M	SD	M	SD
tNEW	10,18	16,57	15,13	22,98	12,08	12,76
tNEW/tNW (%)	3,05	3,20	2,58	2,05	2,68	1,53
tNHEAW	4,10	7,77	8,06	12,70	5,65	6,43
tNHEAW/tNW (%)	1,13	1,65	1,38	1,33	1,25	1,09
tNLEAW	4,87	8,24	4,82	7,33	4,21	4,92
tNLEAW/tNW (%)	1,67	2,71	0,83	0,86	0,27	0,43
PEW	4,22	7,36	5,90	9,42	4,72	5,12
Benevolence	1,52	4,05	2,08	3,83	2,10	3,18
Well-being	3,04	4,95	3,05	4,98	2,13	2,41
Composure	0,66	1,75	0,65	1,92	0,49	1,06
PEW/tNW (%)	1,47	2,21	1,01	1,17	1,15	1,02
NeEW	4,75	8,62	7,10	11,51	5,15	6,88
Malevolence	1,04	2,75	2,40	4,89	1,01	2,11
Ill-being	3,41	5,44	3,79	6,13	3,34	4,94
Anxiety	0,72	1,61	0,82	2,58	0,78	1,39
NeEW/tNW (%)	1,33	2,54	1,19	1,16	1,06	0,99
NSEW	1,22	2,45	2,08	3,53	2,16	2,98
NSEW/tNW (%)	0,25	0,65	0,42	0,68	0,46	0,50
SW	0,15	0,92	0,06	0,25	0,15	0,50
IW	0,13	0,89	0,05	0,22	0,15	0,64

Note: tNEW = total number of emotional words; tNW = total number of words; tNHEAW = total number of high emotional activation words; tNLEAW = total number of low emotional activation words; PEW = positive emotional words; NeEW = negative emotional words; NSEW = non-specified emotional words; SW = surprise words; IW = impassibility words

2. Comparison analyses (Mann-Whitney U) of SDM emotional semantic cues between groups:

With regard to the absolute values of words pronounced was considered, ASPD forensic inpatients pronounced significantly less: a) tNEW than NCP ($U = 5702,50$; $p \leq .001$), b) tNHEAW than NCP ($U = 5544,50$; $p \leq .001$) and PPD ($U = 1951,00$; $p \leq .05$), c) PEW than NCP ($U = 6334,50$; $p \leq .01$), d) NeEW than NCP ($U = 6615,00$; $p \leq .05$) and NSEW than NCP ($U = 5860,50$; $p \leq .001$).

However, when the proportion (%) of these words on the total number of words pronounced was considered, results are slightly different. Besides the confirmation of ASPD pronouncing less tNHEAW than NCP ($U = 5973,00$; $p \leq .001$) and PPD ($U = 1994,00$; $p \leq .05$), and less NSEW than NCP ($U = 5309,50$; $p \leq .001$), they also pronounced more tNLEAW than NCP ($U = 5262,00$; $p \leq .001$) and less NSEW than PPD ($U = 1976,50$; $p \leq .05$). Finally, PPD pronounced more tNLEAW than NCP ($U = 4262,00$; $p \leq .001$).

3. Comparison analyses (χ^2 and Fischer Exact test) of SDM characteristics between groups:

	ASPD ($n = 81$)		PPD ($n = 62$)		NCP ($n = 193$)		χ^2
	n	%	n	%	n	%	
Specific	40	49,40	35	56,50	130	67,40	8,41*
Non-Specific	41	50,60	27	43,50	63	32,60	

Note: * $p \leq .05$

ASPD forensic inpatients recalled less specific SDM than NCP ($p \leq .01$). No difference was found between the two forensic inpatients groups and between PPD forensic inpatients and NCP.

	ASPD ($n = 81$)		PPD ($n = 62$)		NCP ($n = 193$)		χ^2
	n	%	n	%	n	%	
Integrated	12	14,80	7	11,30	87	45,10	38,64**
Non-Integrated	69	86,20	55	88,70	106	54,90	

Note: ** $p \leq .001$

ASPD ($p \leq .001$) and PPD ($p \leq .001$) forensic inpatients recalled less integrated SDM than NCP. No difference was found between the two forensic inpatients groups.

	ASPD ($n = 81$)		PPD ($n = 62$)		NCP ($n = 193$)		χ^2
	n	%	n	%	n	%	
Positive Valence	27	33,30	10	16,10	43	22,30	24,41**
Negative Valence	19	23,50	17	27,50	57	29,50	
Neutral Valence	21	25,90	26	41,90	34	17,60	
Mixed Valence	14	17,30	9	14,50	59	30,60	

Note: ** $p \leq .001$

PPD forensic inpatients recalled less positive valenced SDM than ASPD forensic inpatients ($p \leq .05$). However, they recalled more neutral valenced SDM than both ASPD forensic inpatients ($p \leq .05$) and NCP ($p \leq .001$).

Finally, both forensic inpatients recalled less mixed valenced SDM than NCP ($p \leq .05$).

	ASPD ($n = 81$)		PPD ($n = 62$)		NCP ($n = 193$)		χ^2
	n	%	n	%	n	%	
TLE	17	21,00	13	21,00	46	23,80	64,61**
P-RLE	11	13,60	4	6,50	38	19,70	
IR	16	19,80	23	37,10	48	24,90	
S	12	14,80	5	8,10	49	25,40	
MC/Sh/G	0	0,00	2	3,20	7	3,60	
SC	1	1,20	2	3,20	1	0,50	
Other	24	29,60	13	21,00	4	2,10	

Note: TLE = Threatening Life Events; P-RLE = Pleasant/Recreational Life Events; IR = Interpersonal Relationships; S = Success; MC/Sh/G = Moral Choice, Shame, Guilt; SC = Substance Consumption; ** $p \leq .001$

ASPD forensic inpatients recalled significantly more SDM whose theme was 'Other' than NCP ($p \leq .001$) but significantly less SDM whose theme was 'Interpersonal Relationships' than PPD forensic inpatients ($p \leq .05$).

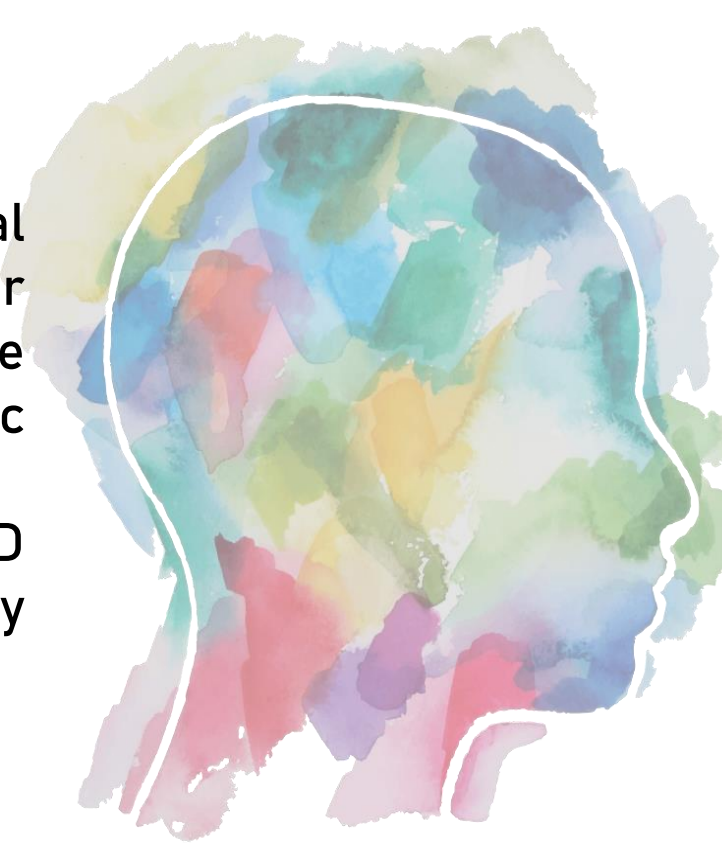
Furthermore, PPD forensic inpatients recalled less SDM whose theme were 'Pleasant/Recreational Events' ($p \leq .05$) and 'Success' ($p \leq .01$) than NCP. Conversely, PPD forensic inpatients recalled more SDM whose theme was 'Other' than NCP ($p \leq .001$).

Discussion

- Semantic analyses indicated that both ASPD and PPD forensic inpatients use more low activation emotional words when recalling SDM. This suggest that both forensic inpatients groups distance themselves from their emotions. Nevertheless, and specifically for PPD forensic inpatients, semantic results tend to disagree with the global emotional deficit hypothesis. At the contrary, it suggests that PPD forensic inpatients exhibited specific deficits in the semantic emotional sphere.
- As previously found, forensic inpatients (ASPD and PPD) exhibit difficulties to integrate SDM. Moreover, PPD forensic inpatients recall mainly SDM with a neutral valence. This result supports Baumeister's theory concerning the Self coherence deficit among antisocial offenders.

Future perspectives

- In-depth analyses using the four PPD profiles: primary, secondary, manipulative and explosive
- Analyze SDM recalling (structure and coherence) using an interview analyze instrument and reflexive functions



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