

**Drug of Choice as Related to
Percept-Genetic Reconstruction of Personality in Terms of
the Spiral Aftereffect Technique (SAT) and
the Defense Mechanism Technique modified (DMTm)**

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This study concerns whether the personality of drug addicts is related to their drug of choice. A group of 112 heavy drug addicts participated, each selected for either heroin (29 women, 52 men) or amphetamine (31 men) being their basic drug. Their personality was assessed by means of two percept-genetic techniques, the Spiral Aftereffect Technique (SAT) and the Defense Mechanism Technique modified (DMTm). The data was examined by use of Multidimensional Scaling. The most typical signs for the male heroin abusers were LLs on SAT and denial 1 and repression 3 but not repression 6 on DMTm. Both the female heroin and the male amphetamine abusers were characterized by L- on SAT and denial through reversal III and repression 6 on DMTm. It is suggested that male abusers for whom heroin is the drug of choice reconstruct the very first position of the Andersson developmental and psychodynamic model of the mind, linked in particular with primary dependency. This contrasts with both the male and the female abusers, for whom amphetamine and heroin, respectively, are the basic drugs, and who reconstruct positions in the Andersson model linked with hystero-phobia.

Key words: Andersson model of the mind, Defense Mechanism Technique modified (DMTm), drug of choice, percept-genesis, Spiral Aftereffect Technique (SAT)

A recent investigation by one of us examined the question of whether, as Wieder and Kaplan suggested in 1969, the personality of drug addicts is related to their drug of choice (Montgomery, 2002). The subjects participating, all heavy drug addicts, were selected for there being one basic drug they abused. As it turned out, each of three groups, women abusing heroin, men abusing heroin and men abusing amphetamine, included a sufficient number of subjects to make comparisons of personality characteristics worthwhile. The personality of

each of the subjects was determined by means of two percept-genetic techniques (Kragh & Smith, 1970; Andersson, Nilsson, Ruuth & Smith, 1972; Andersson, 1991; Andersson & Ryhammar, 1998), the Spiral Aftereffect Technique (SAT) and the Defense Mechanism Technique modified (DMTm).

Our initial assumption was that personality and the drug of choice are related, the nature of this relationship not being specified. In pairwise comparisons between the three drug groups, no differences in SAT or DMTm were found between the male amphetamine and the female heroin abusers. The data of these two groups and of the male heroin abusers was examined further then by means of Multidimensional Scaling (MDS). Analysis of this type involves paired comparisons of all the signs included, each sign being placed in relation to the other signs within a Euclidian space, signs close to each other being seen as related.

METHOD

Participants

The subjects participating were recruited from a drug treatment clinic at a hospital in Stockholm during the years 1990-92. All had been on one basic drug, their drug of choice, most of them for many years (range 1 to 32 years), the median number of years of abuse being 10, 12 and 10 years, respectively, for the 29 women (aged 22 to 41 years) abusing heroin, for the 52 men (aged 23 to 44 years) abusing heroin and for the 31 men (aged 20 to 58 years) abusing amphetamine. The percept-genetic techniques were administered to the subjects when they had been drug-free for ten days to a month and were considered capable of being tested (for more detailed information on the participants, see Montgomery, 2002, pp. 25-26).

Percept-genetic techniques

In the SAT, the subject reconstructs his or her "identity" in the form of a preferred relation between personal (subjective) and impersonal (objective) reality. This occurs in the repeated confrontation with a movement (spiral) aftereffect, resulting in a series of ten observations of aftereffect duration used for assessing the subject's basic personality pattern. It would be possible to describe SAT in orthodox Freudian terms as the degree of investment in narcissistic libido in relation to object libido during the repeated trials (Andersson & Ryhammar, 1998, pp. 370-371). There are nine different SAT patterns (LLs, LL, L-, L+, H-, H+, M-, M+ and Mo), denoted here in developmental order according to the model of the mind formulated by one of us (Andersson, 1991; see Andersson & Ryhammar, 1998, for a

graphic description of these patterns and a more thorough presentation of SAT and of the model).

In the DMTm each of two picture motifs is presented separately by tachistoscope 20 times in succession, the exposure times being increased successively, in the study reported here from 5 to 1150 milliseconds. In each of the two pictures there is a centrally placed child or young person, referred to as hero(ine) (H), who is always of the same gender as the subject. In the periphery of the first picture there is a female threat ("the threatening mother") and of the second picture a male threat ("the threatening father"). Besides the peripheral person (Pp), there is an object in each picture in front of H intended to represent a disguised sexual attribute.

The material subjects produce in the form of verbal reports and simple drawings made after each exposure is not an unmediated reflection of external reality. Rather, it is strongly colored by the subject's own very personal reconstruction of the meaning of the theme shown in the pictures. This theme can be regarded as an attempt at expressing as concretely and comprehensively as possible the situation of danger referred to as loss of love of the love object (Andersson & Ryhammar, 1998, p. 364).

Some types of material subjects produce in DMTm are regarded as signs of anxiety (primarily separation anxiety, affect anxiety and identity anxiety) and defense, the signs of the latter type including denial, affect defenses (repression, projected introaggression, inhibition, introaggression, barrier isolation and affect isolation) and identity defenses (four basic forms of denial through reversal). As described in Andersson and Ryhammar (1998, pp. 364-368), the reflex arc (or attachment) model (Freud, 1900) is of particular interest for understanding the specified motive for denial (in contrast to the main motive for denial of separation anxiety), the affect positions model (Klein, 1935, 1940, 1946) for understanding the specified motives for the affect defenses (for which the main motive is affect anxiety), and the model of self and selfobject (Kohut, 1971, 1977, 1984) for understanding the specified motives for the identity defenses (for which the main motive is identity anxiety).

In the MDS analysis, use was made of the 27 signs listed in Table 1. A sign had to occur in 19-79 % of the cases in order to be included in the analysis (cf. Andersson & Ryhammar, 1999). A thorough presentation of all the SAT and DMTm signs can be found in the latest manual (Andersson, 2004). The signs listed in Tables 2 and 3 are as follows:

LLs. None of the ten observations of aftereffect duration exceeding 2.5 seconds.

L-. The arithmetic mean of the aftereffect durations of observations nine and ten being 3.25 seconds or more but less than 7.5 seconds and there being an overall decrease in aftereffect duration over the ten observations (a minus trend).

Affect anxiety. Before Pp has been recognized as being a person or a face, something dissolved, fragmented, or whatever being seen at that location, or Pp being changed from a person or a face into something which is dissolved, diffuse, or the like, or Pp being blotted out in a marked way without being lost completely.

Repression 3. H being specified as some object.

Repression 6. Pp being specified as some object.

Affect isolation. Pp being seen as a white or shining object or surface, or there being a total loss of the content specified in an exposure preceding this.

Denial 1. Pp being missing or uninterpreted on at least seven consecutive exposures, starting with the first exposure.

Denial through reversal I 1. H being doubled, either without or in combination with splitting (meaning that the two H figures are different or separated), or H being multiplied.

Denial through reversal II 1. H and Pp being seen as having a positive relationship on any of the exposures or Pp as being positive in character on at least two exposures.

Denial through reversal III. H's gender being changed from correct to incorrect, or its being incorrect on at least eight consecutive exposures, but not on all the exposures on which it is denoted, or H's gender being denoted but not being correct on any of the exposures, or H's gender not being denoted at all.

RESULTS

Note that in the MDS analysis (using SPSS, 1993, pp. 155-222) each drug group was employed as a sign, together with the SAT and DMTm characteristics assessed. In the present case, a two-dimensional matrix turned out to provide a reasonable description and a solution that was easy to interpret. Kruskal's stress value was 0.26 (0 = perfect fit, 1 = worst possible fit) and the squared correlation coefficient 0.60. The values for the two dimensions given in Table 1 were used to generate the plot shown in Figure 1.

The greatest distance between signs connected with threat being denoted or not in the DMTm were found, according to Figure 1, along dimension 2. These signs are denial through reversal II 3 (Pp not being denoted as threatening or unsympathetic on any of the exposures) and disappearance of threat (after Pp has been reported to be threatening there are at least two

consecutive exposures without this occurring). No relations between these two signs and membership in the three drug groups were evident.

Table 1. *Signs on SAT and DMTm used in the MDS analysis, the number of subjects (of 112) scored for each sign and the values obtained for those signs in the two-dimensional plot shown in Figure 1.*

Sign	Number of subjects	Dimension 1	Dimension 2
Woman abusing heroin (hw)	29	-1.3077	.2301
Man abusing heroin (hm)	52	1.7569	.3339
Man abusing amphetamine (am)	31	-1.4285	-1.0377
LLs	25	1.6900	-.6939
LL	32	.4236	1.3214
L-	21	-1.3970	-.8747
Affect anxiety	25	-1.2949	-.5007
Identity anxiety	31	-1.0314	-.4901
Separation anxiety	25	1.0246	-.5444
Repression 1	66	.5212	.2319
Repression 3	65	.7695	-1.0603
Repression 4	37	.2552	1.1427
Repression 6	56	-1.2938	.0520
Repression 3, not repression 6	29	1.6929	-.7421
Projected introaggression	34	-.7607	1.1776
Introaggression	37	-.3021	1.0346
Barrier isolation	53	-.9910	.7067
Affect isolation	57	-1.3346	-.1378
Denial 1	88	1.5115	-1.0164
Denial 2-3	46	-1.0990	-.7919
Denial through reversal I 1	37	1.0221	-.0780
Denial through reversal II 1	27	.8238	1.1962
Denial through reversal II 3	39	.3491	-1.7460
Denial through reversal III	55	-.4605	-1.1093
Denial through reversal IV	43	.0033	1.1825
Splitting	26	1.0885	.6399
Disappearance of threat	39	-.2311	1.5737

The signs indicative of the men abusing heroin (hm) are found at the one extreme of dimension 1 (to the right in Figure 1) and the signs of men abusing amphetamine (am) and of women abusing heroin (hw) at the other end (to the left). Clearly, hm is more strongly related to LLs, denial 1 and repression 3 but not repression 6 than the signs am and hw are, whereas am and hw are more strongly related to L-, affect anxiety, repression 6 and affect isolation

than hm is. These results confirm the close similarity to each other on SAT and DMTm of the women who abused heroin and the men who abused amphetamine, these groups differing markedly from the group of men abusing heroin.

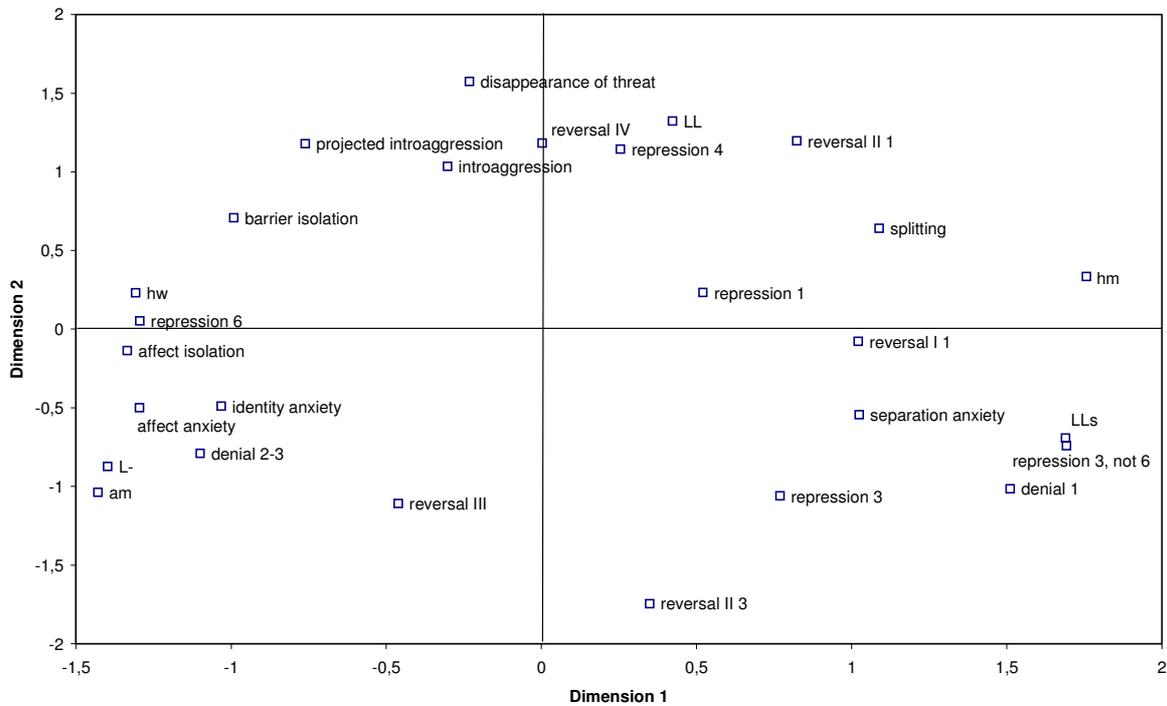


Figure 1. Plot of the two-dimensional MDS analysis of the three drug groups (hw, hm and am) and of the SAT and DMTm data.

The results of the MDS analysis were seen to justify further analysis. Signs more common for the men abusing heroin than for the other groups are listed in Table 2 and signs more common for the combined group of men abusing amphetamine and women abusing heroin in Table 3. The p-values are for Fisher Exact Probability Test, two-tailed. Using the limit $p \leq 0.10$ is merely to facilitate comparison with the plot shown in Figure 1.

Table 2. Signs on SAT and DMTm more common in the men abusing heroin ($n = 52$) than in the men abusing amphetamine and the women abusing heroin ($n = 60$).

Sign	p
Repression 3, not repression 6	0.0004
LLs	0.006
Denial 1	0.02
Splitting	0.04
Denial through reversal I 1	0.07
Denial through reversal II 1	0.08

Table 3. Signs on SAT and DMTm more common in the men abusing amphetamine and the women abusing heroin ($n = 60$) than in the men abusing heroin ($n = 52$).

Sign	p
Repression 6	0.001
L-	0.001
Denial through reversal III	0.04
Affect anxiety	0.04
Affect isolation	0.06

Table 4. Ideal relationships, according to the Andersson model, between personality patterns in the SAT and defenses in the DMTm (cf. Andersson, 1991, p. 69).

Characteristic	Reconstructed instrumental position			Defense associated with the specified motive in a relational position
	1	2	3	
Reconstructed relational position	1	LLs	LLs	denial
	3 early	LL		denial through reversal I and II
	3 late	L-	L+	denial through reversal III
	4	H-	H+	denial through reversal IV
	5	M-	M+	Mo
Defense associated with the specified motive in an instrumental position	repression projected intro-aggression	inhibition introaggression barrier isolation	affect isolation	

There would appear to be a certain discrepancy between the results shown in Table 3 and the plot shown in Figure 1. In the figure, denial through reversal III is not located as close to the signs am and hk as the other signs in Table 3 are. This is probably due to denial through reversal III not only being less common among the men abusing heroin ($p = 0.04$), but its also being typical of the women ($p = 0.005$). This is in agreement with the Andersson and Ryhammar (1999) finding, in a factor analysis of the DMTm signs of a group of university teachers, of female gender and denial through reversal III appearing in the same factor.

It is of interest that LLs in SAT and the defense of denial 1 in DMTm were found to be common among men abusing heroin. Ideally, both these characteristics are related in the Andersson model to position 1. LLs is regarded as a reconstruction of that position, the specified motive for denial 1 also belonging to that same position (Table 4). Denial through reversal III is the relational defense in DMTm that, together with L- (and L+) in SAT, is

linked with position 3 late. Moreover, both LLs and L- are related to an instrumental defense such as repression, for example of those varieties of repression appearing here in Tables 2 and 3: repression 3 but not repression 6 for LLs and repression 6 for L-.

Table 5. *Distribution of the men abusing heroin (n = 52), the men abusing amphetamine (n = 31) and the women abusing heroin (n = 29) in terms of the signs on SAT and DMTm that, according to the Andersson model, correspond to each other.*

Group	(a) LLs and/or both of denial 1 and repression 3 but not repression 6	(b) L- and/or both of denial through reversal III and repression 6	Both (a) and (b)	Neither (a) nor (b)
Men abusing heroin	27	4	3	18
Men abusing amphetamine	7	16	0	8
Women abusing heroin	2	17	3	7

Group	(a)	Both (a) and (b) or neither (a) nor (b)	(b)
Men abusing heroin	27	21	4
Men abusing amphetamine and women abusing heroin	9	18	33

$\chi^2 = 31.55, 2 \text{ df}, p = 0.0000001$

It is possible now to summarize the differences found between, on the one hand, the men abusing heroin and, on the other, the men abusing amphetamine and the women abusing heroin, through making use of the signs in SAT and DMTm that, according to the Andersson model, correspond to each other. Taking account of the signs of this sort obtained in either or both of these two percept-genetic techniques results in the distribution of subjects shown in Table 5.

DISCUSSION

The major question considered in the present study was whether the basic drug used by heavy drug addicts, their drug of choice, is related to their personality. The findings support

the existence of such a relationship, one which is different, however, for women than for men. It can be reasoned that the choice of drug occurs in a social context in which gender is crucial. Could it be that in the world of drug addicts, in particular, it is the men who dictate the conditions? If so, the drug of choice should be determined by external or social circumstances to a greater extent for female than for male abusers. This does not exclude these circumstances "fitting" one type of personality more than another. It might also imply that women, as in the present study, are "assigned" above all to the use of heroin.

It is notable how distinctly the MDS analysis shows the men abusing heroin to differ both from the men abusing amphetamine and the women abusing heroin. That denial 1 was found to be typical of men abusing heroin is of particular interest since, as is the case of LLs, this defense is related by its specified motive to position 1 in the Andersson model. Ultimately, denial is a protection against abandonment, at the same time as it is an attempt to keep the self intact when exposed to unpleasure evoked by an external threat (Andersson, 1991, p. 64). In clinical studies, Hallborg (1997) and Hallborg and Andersson (2002) have shown that, for depressed men, denial in DMTm is related to such symptoms as inertia, psychomotor retardation, lowered vitality and emotional emptiness.

There is an obvious similarity between the men abusing amphetamine and the women abusing heroin. According to the Andersson model, subjects in both groups appear as hysterophobic, implying that to be acknowledged in their identity they feel the need to "place themselves as an object of the Other's desires" (Andersson, 1991, pp. 89-90). Taking this position involves a reconstruction of the phallic-narcissistic phase that position 3 late represents, linked in particular with the oedipal child's construction of gender. This is a position expressed in SAT by L- (and L+) and in DMTm by denial through reversal III.

Of the affect defenses in DMTm, repression 6 (Pp specified as some object) was found to be characteristic of the men abusing amphetamine and the women abusing heroin. A similar sign, found to be associated with phobia, is employed in the Meta-Contrast Technique (MCT; Smith, Johnson & Almgren, 1989), a percept-genetic technique akin to DMTm. Andersson, Almgren, Engleson, Smith, Smith and Uddenberg (1984) noted that women showing this sign on MCT (tested with this technique six months after they had given birth to a boy) often were scored for L- on SAT (when tested 7-8 years later). According to the Andersson model, the specified motive for repression 6 is determined by the paranoid-schizoid position in the Melanie Klein affect positions model. Repression 6 involves "an objectification of the evil" at the place in DMTm where it is personified by the Pp, who can be described as representing "an evil (inner) object" (Andersson, 1991, p. 69).

Affect anxiety and affect isolation, signs which along with L-, denial through reversal III and repression 6 were found to be common in the women abusing heroin and the men abusing amphetamine, seem not to be compatible with hystero-phobia. Christensson (1990) found, however, that a subgroup of suicide attempters were characterized by both L- and affect anxiety. Andersson et al. (1984) found for women who were scored for L- on SAT (and who had given birth to a girl 7-8 years earlier) not only phobic symptoms but also such symptoms as compulsiveness and perfectionism. According to Fenichel (1946), pregenital conversions (tremor, tics, etc.) can readily be observed among individuals who display an anal character, being related to what in the Andersson model is referred to as the manic-obsessional position (and thus to affect isolation). Andersson et al. (1984) observed that women classified as L- showed anal signs in the TAT (Thematic Apperception Test). These women displayed pregenital conversions during their pregnancy 7-8 years earlier more often than other women.

Repression 3 (H specified as some object), without the concurrent presence of repression 6, was the form of affect defense commonly shown by the men who had chosen heroin as their basic drug. Here, just as in the case of repression 6, one can refer to "an objectification of the evil". This assumes, as in a study by Hallborg, Andersson, Nordgren and von Schéele (1987) of a group of patients with hypochondriacal complaints, that it is possible to speak of a displacement of "the evil" to H, or to that part of the inner world conceived as the central self. If, as already suggested, repression 6 is related to hystero-phobic symptoms involving the displacement of negative experiences to certain situations (resulting in phobia) or to distinct bodily symptoms (constituting conversion), repression 3 could be seen instead as associated with hypochondria, the mental pain being experienced in that part of the self that the subject's own body represents. Such an interpretation would suggest the use of heroin to be a type of self-medication against "the evil in the body". This, in turn, suggests that use of heroin by male abusers of it is directed primarily, not at seeking "pleasure", but at avoiding "unpleasure".

In the Andersson model "the unpleasure principle" of the reflex-arc model is associated with LLs, which is the SAT pattern found here to be typical of the men abusing heroin. This personality pattern can be regarded as qualitatively different from the other SAT patterns in that it is close to representing a total denial of self-generated, subjective experience (the aftereffect produced). For individuals scored as LLs there seems to be no room for a relational sphere in which subjective and objective experiences can meet. This sphere, which according to the Andersson model is created in position 2, appears to have been too threatening,

implying there to be a return from position 3 early to position 1, i.e., to the position in which the relational sphere has not yet been created by the infant (Andersson et al., 1984, pp. 50-51). In addition to position 1 indicating an extreme dependency on the surrounding world, it reminds one of the loss of the original unit to which the primary object ("the mother") and the infant belong (Andersson, 1991, p. 63). When this position is reconstructed, it basically represents seeking of the impossible, an attempt to return to a relationship that has been lost forever, a boundlessness that is unattainable being aimed at, this sooner or later resulting in a form of unpleasure that needs to be acted upon.

Previous studies have shown a certain affinity between subjects classified as LLs (reconstructing position 1 relationally) and as LL (reconstructing position 3 early) in regard to relational defenses in DMTm (Andersson & Weikert, 1974; Andersson & Bengtsson, 1985). This is in line with the tendency in the present study of denial through reversal I 1 and II 1 to more often be found in the men abusing heroin than in the other subjects. In the Andersson model, the specified motive of these identity defenses is associated with position 3 early, the same position of which LL is seen to be a reconstruction. The variety of denial through reversal I 1 referred to as splitting, found frequently in men abusing heroin, could be indicative of a form of split self (Andersson & Hallborg, 1986).

Finally, in an attempt to broaden the implications of the relationships found in the present study between personality and drug of choice, one could examine them in relation to Wurmser's (1978) view that compulsive drug use has a strong self-perpetuating quality of a vicious circle in which a phobic core plays a central role. According to the present findings, such a core seems in particular to be typical of male amphetamine and female heroin abusers.

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