

DERMATOGLYPHICS IN JUVENILE DELINQUENCY

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Abstract. Aim. The author develops complete digital dermatoglyphic investigations, on the basis of a pathological perspective, on a group of delinquents from Moldova (North-East part of Romania). **Materials and methods.** The study was performed on a group of 105 teen-agers and young delinquents with ages between 16 and 26 years, imprisoned in the Penitentiary of Iași, coming from different districts (the district of Iași, especially) of Moldova. **Results.** The main observation to be made is that the large range of blamable actions committed by the delinquents, from robbery up to crime, is correlated with the presence – in their fingerprints – of some important malformative sketches (distortions or anomalies) bearing deep pathological significance. At the level of the whole sample, the frequency they record differs sensibly from that of the reference group of Moldova, being nevertheless situated between the values found out by the author in other severe brain disorders, such as autism, IEP and epilepsy. **Conclusion.** All these observations demonstrate that such anomalies had been formed as early as the pre-natal period, when the papillary ridges are also finished up, under the action of some hereditary or teratogeneous factors, while bursting of an aggressive behaviour from the part of their carriers occurs in post-natal periods, at different ages, earlier or later (in the case under study: at juvenile ages), as a function of the severity of the disorders having occurred at brain level in the prenatal period and, equally, as a function of multiple external circumstantial (social, family) factors which they have to face. Most of the digital distortions here under analysis had been also evidenced on other European groups of delinquents, with the exception of two, namely: the extremely high ratio of the raketoid-type loops – on fingers IV and V, especially – and that of the bilateral and individual monomorphism, anomalies representing the personal contribution brought by the author to the list of digital dermatoglyphic indicators, for a precocious tracing of the persons risking commitment of severe offences, at least at the level of Moldova, the region from which the investigated subjects come.

Key words: digital dermatoglyphics, distortions or anomalies, pathology, juvenile delinquency

Rezumat. Scop. Autorul efectuează un studiu dermatoglific, din perspectivă patologică, asupra unui grup de delincvenți din Moldova (partea de nord-est a României). **Material și metode.** Studiul a fost efectuat asupra unui lot de 105 adolescenți și tineri delincvenți de vârstă cuprinsă între 16 și 26 ani, aflați în detenție în penitenciarul din Iași și provenind din diferite județe ale Moldovei dar cu precădere din județul Iași. **Rezultate.** Se constată că, paleta largă de acte reprobabile săvârșite de delincvenți, mergând de la furt și tâlhărie până la omor deosebit de grav, se corelează cu prezența în amprenta digitală a acestora a unor înseminate schițe malformative cu profunde semnificații patologice (distorsiuni sau anomalii). Pe ansamblul întregului eșantion acestea înscriu o frecvență care diferă sensibil de a seriei de referință din Moldova în schimb se situează între valorile găsite de noi în alte tulburări cerebrale majore precum autismul, EPI și epilepsia. **Concluzii.** Acestea ne demonstrează că anomaliile s-au format încă din perioada prenatală când se definitivează și creștele papilare, sub acțiunea unor factori ereditari sau teratogeni iar declanșarea propriu-zisă a

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comportamentului agresiv al purtătorilor are loc în perioada postnatală, la vârste mai timpurii sau mai târzii, în cazul de față la vârsta juvenilă, în funcție de gravitatea tulburărilor ce au intervenit la nivel cerebral în etapa prenatală dar și de factorii conjuncturali externi (sociali, familiali, etc.) cu care se confruntă și care pot fi multipli. Mare parte dintre distorsiunile digitale evidențiate au mai fost raportate și pe alte eșantioane europene de delincvenți afară de două din ele care se referă la *procentajul mult crescut al lațurilor raketoide* cu precădere pe degetele IV și V și *cel al monomorfismului bilateral și individual, anomalii* care se înscriu ca o contribuție a cercetărilor noastre la îmbogățirea indicatorilor dermatoglifici digitali de depistare precoce a persoanelor cu risc pentru săvârșirea unor delikte grave, cel puțin în zona Moldovei din care provin subiecții investigați.

Cuvinte cheie: dermatoglife digitale, distorsiuni sau aomalii, patologie, delincvență juvenilă

INTRODUCTION

Defined as a social phenomenon assuming guilty commitment of offences or of some infringements of law causing prejudices, delinquency generally and the juvenile one - especially - has been largely extended at national scale, but not only, being present both in the urban and in the rural areas. Under such circumstances, the question arises whether this deviation from the normal behaviour and conduct, dominated by strong impulses favoring fraud, theft, aggressiveness, violence, murder or even suicide, is exclusively the result of some negative influences, exercised by evil-doers upon the youngsters whose company they share, of some precarious living conditions of their families, of the difficulty of finding a decent job, etc., or whether the subjects under discussion have an abnormal psycho-genetic nature, with an malformed biological structure, manifested in a peculiar ill-behaviour, inherited from one parent or another. In this last case, such a divergent behaviour is manifested also in parents, brothers, and even uncles, aunts and cousins. Starting from such

considerations and knowing that the dermatoglyphics are among the quite few human morphological characteristics possessing a strong and well-established heredity, the complex picture of which illustrates, in a most suggestive manner, not only the normal, but also our abnormal structural, physiological and neuro-psychic condition, the author developed a study on such problems, on considering a group of delinquent teen-agers and young people from Moldova.

Dermatoglyphic examination, even if not capable of providing an exact diagnosis, may establish, without any doubt, whether the person under analysis is a normal or an abnormal (from a genetic or embryopathic perspective) subject (*i.e.*, a biopsychic infirm person).

Dermatoglyphic investigations have been already developed on various categories of European groups of delinquents (5, 7): Italian, German, Spanish and even Romanian ones, by the reputed specialist Turai (16).

Although involving groups insufficiently well-represented from a statistic perspective, such studies put

into evidence the occurrence – in the delinquents' dermatoglyphic picture – of some important – even if quite few – malformative sketches, seen as directly correlated with their deviating personality and behaviour. More than that, it was the merit of Țurai who discovered the relation between the complex dermatoglyphic structures of the corpses of some aggressive persons, dominated by irrepressible instincts, and the intricate labyrinth of their brain circumvolutions, with extremely different ditches and ridges, by their minutie peculiarities, as the papillary epidermal ridges (16). In the case of delinquents, the dermatoglyphic test is especially important, either as a complementary examination for psychiatric medico-legal expertise, as it may estimate the limit at which the normal is replaced by a pathological behaviour, or as an independent study, for the diagnosis of the origin of some various – hereditary or teratogeneous – neuro-psychic disorders.

Considering the recent advances recorded in the field (1, 3, 4, 6) and performed quite a large time interval since the first investigations on the topic (16), the present study is oriented towards the discovery of new indicators for a dermatoglyphic diagnosis of delinquency which, along with those already known and applied in the literature (6, 7, 8), might be utilized as “markers” in the screening methods for a precocious tracing of the persons risking a divergent behaviour.

MATERIALS AND METHOD

In the summer of 2006, there have been dermatoglyphically investigated

– through finger-printing – a total number of 105 teen-agers and youngsters – all boys – from the Penitentiary of Iași, with ages between 16 and 26 years, coming from various Moldavian districts, most of them from the Iași district. In parallels with the finger-printing operations, an individual inquiry was developed on the causes of detention and on its possible occurrence in relatives (brothers, parents, grad-parents, uncles, aunts, cousins, etc). The investigation showed that most of the delinquents (about 80%) are imprisoned for robbery and banditry, including a large range of blamable facts, such as: stealing of money, wallets, bags, mobile phones, jewels, wood, iron wastes, etc., or robbery in stores, houses, cars, etc; 12.38% of them are accused of having attempted murder – either alone or with abettors – deliberate murder or especially grave murder; 4.76% of them – with ages between 17 and 18 – are imprisoned for indecent assault and sequestering, the remaining 2.86% being accused of illegal trespassing of the border, and drug or persons traffic. The same inquiry showed that in the robberies committed, and not only, in 50 (*i.e.*, 47.62%) of the whole number of delinquents there are also involved close relatives, from the part of one or both parents, many of them being still imprisoned or registered as recidivists, other being free, gaining from the assumption of innocence, which indicates that delinquency is inherited. For the rest of the evil-doers, the deviations from a normal behaviour, with all peculiarities involved, may be the results of some brain disorders

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caused by certain teratogeneous factors, acting at the level of mother's utter in the first 3-5 months of intra-uterine life (when the papillary ridges are actually formed), which, nevertheless, have the advantage of not being transmitted to future generations – as in the case of the hereditary forms of delinquency.

No matter which is the form of delinquency – be it hereditary or embryopathic – the persons affected by it evidence a socially-unadaptable, impulsive, not real, psychic biotype, with obvious signs of the intelligence's and personality's disintegration, capable of producing serial offences, characterized by excessive aggressivity, sometimes up to extreme brutish actions – in other words, a biopsychically-infirm person.

As, at the group level, the dermatoglyphic distortions or anomalies represent deviations in the frequency of some dermatoglyphic characteristics from the values recorded in the apparently normal populations from which the bearing subjects come (7, 10, 16), a comparative analysis was made between the results obtained for the whole group under study and those recorded on a sample from Moldova (10). Also, with a view to demonstrate that the dermatoglyphic anomalies evidenced in juvenile delinquency express graphically some structural and functional disorders at brain level, the results obtained have been compared with those, found out by the same author, on other groups, affected by major disorders of the central nervous system, such as: autism (14), epilepsy (13) and infantile

encephalopathies (IEP) (15), which permitted a correct estimation of the extent to which delinquency is present in the dermatoglyphic behaviour of these maladies.

For all anomalies put into evidence, their distribution as a function of laterality, as well as on the whole, has been considered, along with their succession of distribution on the 5 – cumulated – fingers of the two hands. The working methods applied are the ones currently employed in studies of populational pathological dermatoglyphics (4, 7, 11, 12, 16).

RESULTS AND DISCUSSION

Individual analysis of the dermatoglyphic files showed that, at the level of **the digital picture**, the one actually considered in the present study, - regardless of the age at which the offence had been committed, of its rare character or of its inherited or teratological form, the young and teenager delinquents evidence important distortions or malformative sketches bearing deep medical significance (4, 7, 8, 12), part of them evidenced, too, on other European groups of offenders (1, 2, 5, 16). At the level of the whole sample under study, such anomalies record average ratios extremely different from those of the reference sample, being nevertheless more or less close to those records by the author in epileptics, autists or persons affected by sekelary IEP (13, 14, 15), maladies producing severe disorders also at the level of the central nervous system (table 1), which is also the case of delinquency.

Table 1. Comparative data on the frequency and succession of the digital distortions on fingers

Digital distortions	Delinquents, other affected people and reference batch	Left hand	Right hand	Left + right	Succession of the arrangement on the five cumulated fingers
L on total fingers	Delinquency	61.52	53.90	57.71	V > III > IV > II > I
	Autism	55.52	66.86	61.19	V > III > IV > II > I
	IEP	60.00	52.20	56.10	V > III > I > IV > II
	Epilepsy	59.60	54.12	56.86	V > III > IV > II > I
	Reference batch	81.00	61.0	71.0	V > III > I > IV > II
W on total fingers	Delinquency	33.33	40.57	36.95	I > IV > II > III > V
	Autism	28.66	29.25	28.95	I > IV > II > III > V
	IEP	33.20	40.40	36.80	IV > I > II > III > V
	Epilepsy	27.84	34.12	30.59	I > IV > II > III > V
	Reference batch	23.50	31.50	27.50	I > IV > V > III > II
Structurally intricat patterns LP, CP, TL, etc.	Delinquency	5.33	3.05	4.20	I > II > III = IV > V
	Autism	2.68	0.30	1.50	I > II = III = IV > V
	IEP	2.40	1.40	1.90	I > II > III > IV > V
	Epilepsy	2.70	1.20	1.90	I > II > III > IV > V
	Reference batch	0.30	0.10	0.20	I > II > III > IV > V
Raketoid type loops	Delinquency	9.90	9.14	9.52	IV > V > II > III > I
	Autism	8.55	8.95	8.65	IV > V > II > I > III
	IEP	9.60	7.40	8.50	IV > V > III > II > I
	Epilepsy	5.88	7.45	6.66	IV > V > III > II > I
	Reference batch	-	-	-	-
Radiality of the digital structures	Delinquency	9.52	9.90	9.71	II > III > IV > I > V
	Autism	10.14	3.90	7.01	II > IV = I > III > V
	IEP	8.60	14.00	11.30	II > III > IV > I > V
	Epilepsy	9.40	16.80	13.10	II > III > IV > I > V
	Reference batch	1.60	4.10	2.85	II > III > II > I > IV

Delinquency (No = 105)

Autism (No = 67): Ana Țarcă 2001

IEP = infantile encephalopathies (No = 100): Ana Țarcă 2003

Epilepsy (No = 51): Ana Țarcă 2002

Reference batch (No = 100): Ana Țarcă 1995

A first digital anomaly, reported also by Țurari (16) and, once more, on other European series of offenders (1, 2, 7, 8) refers to *the sensible increase of the frequency of whorls (W) on fingers*, on the average up to 36.95% versus only 27.5% - in the reference sample, which is practically a value

equal to that recorded by the author in IEP (36.80%).

Similarly with the reference batch or with the groups of brain-affected patients, employed for the sake of comparison, W is prevailing on the carriers' right hand, especially on finger I and IV, followed by II > III > V. *Increase of the weight of W*

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induced a substantial diminution of all the loops (L) up to 57.71% *versus* 71.00%, the normal value, which is quite close to that of the IEP (56.10%) and epilepsy (56.86%), affected subjects, appearing also as a significant digital distortion. Such a decrease in the **L** percent value is more pronounced on the right hand of the delinquents, similarly with the last two mentioned maladies or with the reference sample of Moldova (table 1). An extremely rare malformative stigmat present in normal people (0.20%), yet quite frequent in various European groups of criminals and delinquents (2, 6, 8) – the Romanian series investigated by Țurui included – as well as in the group of delinquents now under study, refers to *the tendency of occupying the same digital compartment by two fused patterns, evidencing a complex structure, of the twin loops(TL–or lateral pockets (LP)-type*. The average frequency recorded in the delinquents of Moldova is more than double *versus* the one registered for autists, epileptics or persons affected by sekelary IEP. Nevertheless, in all cases, such structures are more frequently met on the carriers' left hand, especially on fingers I and II, followed – in the decreasing order of the values – by fingers III, IV and V. A digital anomaly whose malformative effects upon the carriers may be compared with those induced by the reversion of the normal position of the internal organs refers to *the radially of the digital structures considered as a whole (A + L + W)*. It assumes changing of the ulnary or

cubital orientation of the digital patterns, which is usually of priority, with their orientation in radial direction. Quite rarely occurring in the reference series (2.85%), in the sample under study radiality attains an average ratio of 9.71%, a value situated between that of the autists (7.01%) and of epileptics (13.10%), being closer to that of the subjects affected by sekelary IEP (11.30%). Similarly with the reference batch or with epilepsy and IEP, the radial orientation is more frequently met on the right hand, mention being nevertheless made of the fact that, in the series of delinquents here under study, the bilateral differences suggest only a tendency towards this direction. Table 1 also shows that, out of the 5 cumulated fingers, radial orientation is more frequent on fingers II and III as, actually, in all the other affections analyzed for the sake of comparison, the following three positions of the scheme of distribution on fingers being identical with the ones present in IEP and epilepsy (IV > I > V). For the following two digital anomalies put into evidence in the present study, worth mentioning is that they are not present in the literature of the field, not even, in the analyses of Țurui (16) on Romanian offenders. The former assumes *a very high incidence of the racketoid-type loops*, a pattern missing in the reference sample while, in the delinquents under study, it attains an average ratio of 9.52%, a value exceeding the ones recorded in the major brain affections considered for comparative investigations.

The bimanual differences suggest a tendency towards somewhat higher ratios of this distortion on the left hand, to be also observed exclusively in the sekelary IEP-ies to which the delinquents are most close.

As to the succession of the distribution – on fingers – of the racketoid loops, their prevalence was noticed on fingers IV and V – which is also the case of the other brain affections under analysis – although, for the following 3 positions of the scheme, some insignificant reversions had been observed, finger I appearing the last as to frequency, with the exception of autism (table 1).

Finally, the following malformative sketch put into evidence by the author in juvenile delinquency, yet not the last possible one, bearing severe pathological significance for its carriers (7, 11, 12) is *the very high incidence of the bilateral – and, especially, of the individual monomorphism* (table 2). As shown in table 2, in the case of the left hand and individual monomorphism, the series here under investigation records percent values practically equal to those recorded in sekelary IEP-ies, yet without neglecting the relative closeness to the values registered for the other two major brain affections.

Table 2. Comparative data on the frequency of the bilateral (left- and right- handed) and individual monomorphism

	Monomorphism		
	Left-handed	Right-handed	Individual
Delinquency (No = 105)	31.42	23.80	14.28
Autism (No = 67)	21.00	26.86	8.95
IEP sechelary (No = 100)	32.00	27.00	14.00
Epilepsy (N = 51)	25.49	11.76	3.92
Reference batch (N = 100)	15.50	9.00	4.00

Table 2 also shows that both the delinquents and the persons affected by severe brain disorders – the ones affected by epilepsy, excepted – are significantly different from the reference series, both in the values recorded for the left- and right-hand monomorphism, and in the individual monomorphism (which is also the previously discussed anomaly), which demonstrates, once more, that all of them had been formed in the pre-natal

period, when the epidermal papillary ridges are also finalized, being interpreted as signals of the disorders manifested at the level of the central nervous system, known as responsible for one's individual behaviour and personality.

CONCLUSIONS

The study of digital dermatoglyphics in the young and teen-agers offenders coming from Moldova led to the

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conclusions that, regardless of the age at which the deed had been committed or of its complexity, it is sketched in the person's fingerprint by severe and important distortions or anomalies bearing deep clinical significance, the frequency of which – at the level of the whole group taken into study – is close to, equal, or it even exceeds the frequency recorded for subjects affected by other major brain disorders (such as autism, sekelary IEP-ies, epilepsy), being nevertheless sensibly different from that of the reference sample from which they come. This demonstrated that the causal factors responsible for the diverging behaviour of the delinquents, be they of either genetic or teratological nature, have acted upon the nervous system as early as the intra-uterine period, when the epidermal papillary ridges and – implicitly – the distortions now under analysis, have been formed.

As to the beginning or releasing of an aggressive behaviour as such, manifested in a special way of reacting of the persons bearing such malformative sketches, it occurs during the post-natal life, in our case in adolescence or youth, under the impulse of a multitude of circumstantial factors of family, social or personal nature, the severity of the offence depending, however, of the degree of affection of the nervous system early in the pre-natal life.

Present on both the left and right hand of the delinquents, each one with a preferential arrangement on the 5 cumulated fingers, most of the digital anomalies signaled out in the present

study (namely: a higher frequency for **W**, more intense on the right hand and on fingers I and IV; a sensible diminution of the weight of **L**, again preferentially on the right hand, with most of its values on fingers V and III; a higher incidence for the structurally–intricate patterns, especially on the left hand and on fingers I and II, and a much higher frequency *versus* the normal values for the radial orientation of the digital patterns instead of the ulnar one, especially on fingers II and III and in practically equal ratios on the two hands, have been found out, too, on other European – Romanian ones, included – batches of offenders.

Besides the above-mentioned ones, the author of the present study has evidenced two other distortions – the medical implications of which are well-known (4, 7, 16), referring to a ***much higher incidence, comparatively with the normal situation, of the racketoid-type loops***, especially on fingers IV and V, in similar ratios on both hands, as well as ***a very high frequency of the bilateral and individual monomorphism***. They represent the author's contribution to the investigations meant at enriching the pathological elements permitting a precocious diagnosis of the persons risking to commit offences, elements which – together with those occurring at palm's level (to be analyzed in a separate study) - might be employed as “markers” in screening of juvenile delinquency at population level, at least in Moldova, the area from which the subjects under investigation come.

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