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Identity in Forms: Paper Technologies in Dutch Anthropometric Practices Around 1900

Geertje Mak and Saskia Bultman

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Abstract

This article analyses anthropometric forms used in three different Dutch contexts around 1900: an expedition in Dutch New Guinea, the Dutch police and prison registration system, where ‘Bertillonage’ was used to identify recidivist criminals, and a state-owned reform school for girls. The authors identify the loose form as an innovative ‘paper technology’ within anthropometry that opened up entirely new ways of linking bodies to identities and was critically important in inscribing bodies into knowledge systems. The article demonstrates how this crucial innovation within anthropometry took shape in practice. In order to show the techniques through which the inscription of bodies into knowledge systems took place, the article demonstrates how the forms organized, standardized and directed measuring practices and prepared the data for further use in filing systems. Moreover, it draws attention to the tension between the forms’ potential and actual practices. The article concludes by considering the ways these forms were filed and used as ‘data’ by judicial authorities, child protection professionals and racial and criminological scientists, each of whom produced different forms of ‘paper identity’ and whose anthropometric practices enacted different bodies.

Keywords: anthropometry, Bertillon, praxiography, racial science, reform schools, science studies

Introduction

When equality became the norm in modern Western Europe, difference had to be explained, as Siep Stuurman has so eloquently argued.¹ From the end of the eighteenth century this led to an enormous scientific effort to link physical differences to social differences, and to fix both social and individual identities onto bodies. As a method for measuring and characterizing physical differences within physical anthropology, anthropometry played a pivotal role in this development, particularly from the second half of the nineteenth century onwards. The history of this method is much less well-studied than the ideas, concepts and theories about race, criminality, insanity and gender it supported, and even less well-studied are the practices, techniques, materialities and routines involved in anthropometry. Recently, historians borrowed the ‘praxiographic approach’ from Annemarie Mol in order to be able to historicize bodies and bio-identities in relation to the techniques and practices in which they were enacted.² This article provides a praxiographic micro-analysis of one central aspect of anthropometric practices: the loose form, which was introduced into Dutch anthropometry at the start of the twentieth century. The loose form can be defined as a *separate* sheet or sheets of paper, meant to record data on one *individual* person. This can be considered a crucial innovation, as loose forms opened up entirely new ways of linking bodies to identities, as we will demonstrate.

In analysing forms as a specific technique, we connect to the rapidly growing field of ‘paper technology’ studies, a field which, to speak with Matthew Hull, aims to restore the analytic visibility and materiality of papers by ‘looking *at* rather than *through* them’. Thus, instead of taking papers as transparent carriers of meaning, they are analysed as co-actors in creating knowledge.³ Several historians have already provided insightful analyses of different kinds of paper technologies, such as card index systems, registers, patient files, dossiers and police warrants; the introduction of loose forms, however, has not received specific attention as of yet.⁴

In what follows, we compare three different forms used to record anthropometric measurements – i.e., measurements of the outer characteristics of the body. Three rich archives in the Netherlands allowed us to make this comparison. In the early twentieth century, the Netherlands were a crossroads of German, French and English influences in

scientific and administrative systems, whose influence is clearly present in the forms we analyse, as we will show. One form stems from a Dutch exploratory expedition in the colony of Dutch New Guinea in 1909, one was used in a prison where criminals were identified through ‘Bertillonage’ (1896–1905), and one was employed in a Dutch state-owned reform school for girls in which the pupils underwent extensive medical examination and measurement during an initial observation period (1905–c.1952). We analyse the two functions combined in each of these forms: how they enabled the inscription of a body on paper, and which techniques of filing they afforded. These anthropometric forms, which were meant to record data on the bodies of Papuans, recidivist criminals and delinquent girls, can be considered the administrative heart of the societal conviction and scientific notion that bodies somehow contained the key to a person’s identity. We consider the forms under examination to have been critically important in practices of inscribing bodies into bureaucratic and scientific knowledge systems.

After briefly discussing the praxiographic approach, we move to the introduction of the ‘loose form’ in three different Dutch contexts. The loose form is a paper technique that we consider an important step towards what Foucault identified as the dual objective of examination: individuation and categorization.⁵ To show how, specifically, loose forms offered new possibilities for data-processing in administrative systems, we will first describe how they allowed for three different ways of filing, each of which afforded the enactment of a different kind of administrated identity, or ‘paper identity’. First, loose forms offered the possibility to accumulate data (such as height, breadth of the nose or skin colour) per category of people, creating what we have termed ‘categorical paper identity’: the anthropometric forms from the Dutch New Guinea expedition were used to compare physical characteristics of groups of people statistically. Second, loose forms could be used to establish an ‘authenticated paper identity’: as we will explain below, Bertillon’s system was meant to link unique bodies to the unique bureaucratic files of individual criminals. Third, through their capacity to be filed in individual dossiers, loose forms afforded the creation of what we call ‘personal paper identity’: the anthropometric forms used in the State Reform School for Girls were filed in pupils’ individual dossiers, which linked each girl’s bodily characteristics to other information about the girl’s character, behaviour, family and biography,

produced before, during and after her stay. As we will see, the data collected on the girls' bodies were also used to categorize the girls in statistical publications on girl criminality. Loose forms thus principally enabled the construction of these three kinds of paper identities at the same time. However, our comparative analysis also demonstrates the tension between the forms' potential and actual practices.

In the next part of this article we aim to describe how these forms systematized the measurements and descriptions of bodies in a variety of ways; namely, through selecting, ordering, routinizing, speeding up and standardizing measurements. Around 1900, physical anthropological discourse was strongly rooted in both evolutionary and recapitulation theory; certain groups, such as the 'lower' races, children, women and criminals, were seen as lagging behind in an earlier evolutionary stage, making it theoretically interesting to compare them.⁶ The standardization of routines and measures enabled by the three different forms we analyse here would, theoretically, afford scientists the possibility to compare these groups anthropometrically. But is this how they functioned in practice?

Finally, we ask why Bertillonage was relatively quickly considered a failure, whereas anthropometric measuring continued to be done in the context of physical anthropology in Dutch New Guinea as well as in the girls' reform school. We relate this to the actual practices of data-processing.

A Praxiographic Approach

With our turn to practices, we shift the attention within the history of physical anthropology from the 'what' to the 'how',⁷ from the content of ascribed criminal, racial or sexual identities to the ways in which they were actually constituted. We investigate how the loose form made this transformation possible, on the one hand concentrating on practices of *inscribing* bodily measurements in a form, on the other on how the form could *create identities* on paper.

In her ground-breaking work *The Body Multiple*, Mol does an ethnographic study of the practices by means of which the disease of atherosclerosis is studied and diagnosed in a hospital. Her study demonstrates that practices produce a body that is ontologically multiple: instead of differently *perceived* bodies, she shows that each practice leads to differently *enacted* bodies, whose performed presence depends on how

they function and relate to the (medical) practices, routines and techniques in which they appear. Similar to the multiple ontology of bodies in Mol's praxiography of the body, we contend that multiple paper identities are enacted within different filing contexts. Thus, the loose form constitutes the material space where the body that is enacted in anthropometric measurements transforms into an identity enacted on paper.⁸ As stated above, we distinguish three kinds: authenticated, personal and categorical paper identities.

How to do praxiography as historians? Mostly, praxiography is carried out by doing ethnographic research. As historians, however, we cannot observe practices, but concentrate, instead, on the written traces of practices. The difficulty with this is, however, that forms usually function as an invisible infrastructure, whose practices are obscured. To make the mundane techniques implied in forms analytically visible again,⁹ we examined the forms themselves, studying the standards, routines and definitions implied in them. In order to uncover their seemingly self-evident logics, we studied, among other things, size, paper quality, layout, format, notations and the order of items. Besides this, we traced and analysed sources containing instructions that accompanied the introduction and discontinuation of the forms, as well as professionals' discussions concerning the forms and their use. Further to this, we reconstructed filing practices, drawing on their archival location as well as contemporary instructions and discussions. Furthermore, we paid attention to problems, failure or breakdown, as noted by the practitioners using the forms, as well as examples of filled-in forms. Together, all these practicalities and problems are useful in uncovering the often invisible, taken for granted techniques implied in forms.¹⁰ To be sure, such a praxiographic approach is not meant to oppose (anthropometric) theory to a more sloppy, failing or complex practice; rather, it is a method to make a more fundamental argument about the ways in which anthropometry enacted identities on paper.

The Introduction of Loose Forms

The most innovative aspect of the loose form-as-technique in the anthropometric context was the change towards the individual observation sheet, because it could be used in different filing systems, in which the forms were piled up, singled out or combined with other files.¹¹

In this section, we discuss the filing practices surrounding each of the three forms, highlighting the affordances the form-as-loose-sheet provided. While in German-language areas administrative systems revolving around loose files concerning the individual had already been introduced in the mid-nineteenth century in police files, in The Netherlands, the separate form was introduced in different anthropometry-related contexts in the early twentieth century.¹²

The first case we discuss pertains to an anthropometric expedition in Dutch New Guinea in 1909. Within French racial anthropology, Broca had already designed individual forms and advocated their use in 1865.¹³ In Germany, by contrast, the most-used anthropometric questionnaires were not transformed into loose forms until the beginning of the twentieth century.¹⁴ In 1875, Rudolf Virchow (the most famous physician at the time) published an anthropometric questionnaire for the first edition of Neumayer's *Anleitung*, the manual most-often used by travellers who were interested in doing scientific research.¹⁵ His successor Felix von Luschan improved the questionnaire in the 1906 edition of Neumayer's *Anleitung*, but did not design a loose form.¹⁶ The Dutch guide for travellers who were interested in doing scientific work, Serrurier's *The Pionier*, published a form in 1891 in which data on several people at once could be noted down in a chart (see Fig. 1). The use of charts that combined the data of multiple people by (German) anthropometrists must have continued until at least 1914. In that year, Rudolf Martin published the first edition of his famous anthropological manual in which he disapprovingly referred to this technique. Martin would become the most influential continental anthropometrical scientist, whose rigorous methodological instructions were reprinted until after the Second World War and are still leading in historical anthropology and demography today.¹⁷ Martin praised the statistical usefulness of separate sheets for each individual: with this, all sorts of statistical processing of data was made possible, because the sheets 'could be classified according to the most different perspectives, such as age, sex, social position'.¹⁸ The forms he designed could be used for racial anthropology or the demographic and individual study of human growth. Martin intended to strictly distinguish physical anthropology from ethnography or ordinary/colonial racial characterization by linking physical traits to geography and descent only.¹⁹

Formulier voor anthropologisch onderzoek.

	N ^o .	N ^o .	N ^o .	N ^o .
Volk
Plaats der waarneming
Naam
Geslacht
Onderdom.
Beschrijvende Kenmerken.				
A. Mager (1) middelmatig (2) zwaarlijvig (3)
B. Kleur der oogen	{	donker in verschillende tinten (1)	.....	.....
		middelmatig { grijs, groen, blauw (2)	.....	.....
		bruin (3)	.....	.....
		lichtgrijs, lichtblauw (4)	.....	.....
C. Kleur der haren	{	swart (1)	.....	.....
		bruin (2-3)	.....	.....
		blond, lichtbruin of geelachtig (4)	.....	.....
		rood en rossig (5)	.....	.....
D. Kleur der bedekte deelen van de huid	{	swart of blauwachtig zwart (1)	.....	.....
		bruin en geel (2-3)	.....	.....
		blank (4-5)	.....	.....
E. Aard van het haar	{	sluik (1)	.....	.....
		golvend (2)	.....	.....
		kroes (3)	.....	.....
		wollig (4)	.....	.....
F. Graad van behaardheid	{	onbehaard (1)	.....	.....
		schaars (2)	.....	.....
		middelmatig (3)	.....	.....
		aanmerkelijk (4)	.....	.....
G. Gelaatsvorm	{	lang (1)	.....	.....
		middelmatig (2)	.....	.....
		breed (3)	.....	.....

Figure 1. The form from Serrurier's *De Pionier* (Leiden: De Breuk & Smits, 1891), 152.

Martin's insights were of great influence for Dutch anthropometric practices. The anthropometric forms used by colonial army physician Lucien S.A.M. von Römer during Hendrik A. Lorentz' expedition starting from the south of the colony to Wilhelmina Peak in central Dutch New Guinea in 1909 were developed by physician Gijsbert A. J. van der Sande.²⁰ Van der Sande had been a physician in the Royal Dutch Indies Army (KNIL) and had prepared for an earlier New Guinea expedition

(1903) by studying physical anthropology under Rudolf Martin for one year in Zurich in 1901. He had been part of an earlier scientific expedition to New Guinea in 1903, led by the German biologist Arthur Wichmann, together with Lorentz. When Lorentz started to organize new expeditions, Van der Sande advised him on many aspects of the physical anthropological, mostly anthropometric, part of the expedition. In one of his letters, he attached a model form he had designed and gave instructions for its printing. He suggested printing a lot of them so that a standard Dutch form would be used for all future Dutch anthropometric research and also ordered a hundred extra copies for himself.²¹ The 1907 expedition ended up not prioritizing physical anthropological research, to Van der Sande's disappointment, but for the 1909 expedition he was asked to show Von Römer how to take proper anthropological measurements. The forms Von Römer used were the ones Van der Sande had designed (Figs. 2, 3).²²

The forms were generally meant to collect data on separate body parts (e.g., length of the underarm, colour of the eye, hair structure of pubic hair) to create statistical links between those data and categories of people (e.g., Melanesians, Irish, murderers). This technique creates what we term 'categorical paper identity'. Potentially such forms could also be used to follow individual growth or to identify someone individually.

The second case we study pertains to the system that Paris police officer Alphonse Bertillon introduced, which was meant to identify recidivist criminals. At the time, the Paris police archives contained brief descriptions and photographs of 80,000 criminals, and police officers had to identify an average of one hundred newly arrested criminals every day, he claimed. How to find out whether an arrested criminal was already on file for another crime? While photography had seemed a promising technique for identification, *linking* arrested criminals to the huge collection of photographs and dossiers attached to them proved to be nearly impossible. This is where Bertillonage came in. Bertillon's system was never meant to find a criminal *type*. It was a system of measuring and – as we will show below – ingenious filing in order to *identify* an individual, to create a link between an individual's body and an administrative system of previously convicted criminals.²³ In Bertillonage, which was focused on identifying recidivist criminals, various anthropometric measurements were taken of an arrested criminal and written down on a loose form. This form was filed in such a way that individual forms, containing a criminal's personal details, were easy to retrieve.

Plaats en tijd:	Woon- en geboorteplaats:	Leeftijd:
Naam:	Beroep:	Gewicht:
1 Lichaamslengte	35 Hoofdlengte	
2 Bovenste borstbeendrand	36 Hoofdbreedte	
3 Navel	37 Voorthoofdbreedte (kleinste)	
4 Bovenrand v. schaambeent	38 Onderlinge tragus-afstand	
5 Tepsel	39 Onderlinge afstand der jukbeenderen	
6 Acromion	40 Onderkaakbreedte	
7 Lijn van ellebooggewricht	41 Afstand tusschen de binnenoochhoeken	
8 Proc. styloides radii	42 Afstand tusschen de buitenoochhoeken	
9 Top van middenvinger	43 Breedte van den neus	
10 Darmbeenkam	44 Breedte van de mondpleet	
11 Spina iliaca ant. sup.	45 Lengte van de oorschelp	
12 Trochanter	46 Breedte van de oorschelp	
13 Lijn van kniegewricht	47 Verticale hoogte v/d schedel boven tragus-lijn	
14 Onderkant van binnenkel	48 Grootste hoogte v/d schedel bov. tragus-lijn	
15 Lichaamslengte boven het zitvlak	49 Kin tot schedel	
16 Vadem	50 " " haargrens	
17 Afstand tusschen acromion-randen	51 Kin tot neuswortel	
18 Afstand tusschen darmbeenkammen	52 Kin tot onderste alveolair-punt	
19 Afstand tusschen spinae iliac. ant. sup.	53 Neuswortel tot bovenste alveolair-punt	
20 Afstand tusschen trochanters	54 Hoogte van den neus	
21 Bovenarmlengte	55 Voorsprong van den neus	
22 Onderarmlengte	56 Tragus tot neuswortel	
23 Handlengte	57 " " kinpunt	
24 Middenvingerlengte	58 " " bovenste alveolair-punt	
25 Duimlengte	59 Horizontale hoofdomtrek	
26 Handbreedte	60 Sagittale "	
27 Voetlengte	61 Transversale "	
28 Voetbreedte	Forca saerals	
29 Borstomtrek	Bilplaat	
30 Middellomtrek	Lendendwarsing hoogte	
31 Bovenarmomtrek (grootste)	Lepste	
32 Onderarmomtrek (kleinste)	Schouderbreedte	
33 Dijsomtrek	Tepselafstand	
34 Kuitomtrek	Trochanter-bil	
35 Schouderbasis-hel hoogte	Schaambeent-bil	
36 Schouderbasis-hel breedte	adipose. borst	
37 Schouderbasispunt v. bil	supra	
38 Flexieomtrek		

Figures 2 and 3. Forms designed by Van der Sande and filled in by Von Römer. National Library of The Netherlands, The Hague, in L.S.A.M. von Römer, Voeten handafdrukken verzameld tijdens de Nieuw-Guinea-expeditie 1909. Deel I, Cijfermateriaal (n.p., n.d.).

N. 12	Plaats en tijd: <i>paper</i>	Woon- en geboorteplaats:	Leeftijd:
Foto	Naam:	Beroep:	Gewicht:
154	1 Lichaamslengte	35 Hoofdlengte	124,2
120,6	2 Bovenste borstbeenrand tot bodem	36 Hoofdbreedte	120,6
90,3	3 Nareel	37 Voorhoofdsbreedte (kleinste)	85
86	4 Bovenrand v. schaambeent	38 Onderlinge tragus-afstand	11,4
119,0	5 Trepel	39 Onderlinge afstand der jukbeenderen	17
120,1	6 Acromion	40 Onderkaakbreedte	20,2
101	7 Lijn van ellebooggewricht	41 Afstand tusschen de binnenoochhoeken	9
73,7	8 Proc. styloides radii	42 Afstand tusschen de buitenoochhoeken	8
55,7	9 Top van middenvinger	43 Breedte van den neus	2,2
47,1	10 Darmbeenkam	44 Breedte van de mondspleet	2,2
92,1	11 Spina iliaca ant. sup.	45 Lengte van de oorschelp	5,1
00,1	12 Trochanter	46 Breedte van de oorschelp	5,1
45	13 Lijn van kniegewricht	47 Verticale hoogte v/d schedel boven tragus-lijn	12,8
6	14 Onderkant van binnenenkel	48 Grootste hoogte v/d schedel bov. tragus-lijn	12,8
	15 Lichaamslengte boven het zitvlak	49 Kin tot schedel	20
171,8	16 Vadem	50 " " haargrens	26,5
33,9	17 Afstand tusschen acromion-randen	51 Kin tot neuswortel	10,8
25,3	18 Afstand tusschen darmbeenkammen	52 Kin tot onderste alveolair-punt	10,8
22,1	19 Afstand tusschen spinae iliac. ant. sup.	53 Neusvoertel tot bovenste alveolair-punt	10,8
26,7	20 Afstand tusschen trochanters	54 Hoogte van den neus	2,2
32	21 Bovenarm lengte	55 Voorsprong van den neus	2,2
27	22 Onderarm lengte	56 Tragus tot neuswortel	5
17,5	23 Handlengte	57 " " kinpunt	2,1
8,6	24 Middenvingerlengte	58 " " bovenste alveolair-punt	9,5
11,4	25 Duimlengte	59 Horizontale hoofdontrek	52,5
7,1	26 Handbreedte	60 Sagittale "	50
24,0	27 Voetlengte	61 Transversale "	51,5
8,7	28 Voetbreedte	<i>Fora sacralis</i>	16,6
95,5	29 Borstomtrek	<i>Pelplvoi</i>	46,6
13,5	30 Middelontrek	<i>Leukubriging - hoogte</i>	100,6
120,1	31 Boecarmontrek (grootste)	<i>diepte</i>	4,1
15	32 Onderarmontrek (kleinste)	<i>Schouderbreedte</i>	37,5
46	33 Dijontrek	<i>Trepelafstand</i>	16,8
27	34 Kuitontrek	<i>Trochanter - bil</i>	
102,7	<i>Zichtbare middelhoogte</i>	<i>Schaambeent-bil</i>	19,4
26,7	<i>" " breedte</i>	<i>diepte borst</i>	
120,2	<i>Schouderbladpunt t. bodem</i>	<i>diepte</i>	
70	<i>Heupomtrek</i>		

Figures 2 and 3. (Continued)

By filing the forms in the manner instructed, the police could easily see whether a newly-arrested criminal had been arrested before – by matching their details to previously recorded data, on previously stored forms. Focused, as it was, on authenticating the identity of the (recidivist) criminal, this system created what we label ‘authenticated paper identity’. However, because it was created in relation to the idea that

recidivist criminals were the most dangerous, there certainly was a link to the concept of the born criminal.

Bertillonage introduced the loose form to be able to file criminals in police and prison administrations per individual. Until then, individual physical characteristics recorded by the police or in the army were entered into bound registration logs, which were chronologically organized by date of entrance. The same sort of fixed organization can be seen in the filing of police photos of criminals, which were often published in large bound volumes, ordered by the type of crime they had committed (with a remaining category of 'women'), or, as in the Netherlands, periodically published in a police weekly.²⁴ The system introduced by Bertillon, by contrast, made it possible to link the physical measurements of a criminal coming into the police station to already-existing information about the criminal and, thus, to authenticate their identity.

Bertillon's idea was brilliantly easy. Measure head length and breadth, length of the middle finger, foot and underarm, length and breadth of the ear, height, and divide the measures in three: large, average and small, and determine eye colour; note the results on a pre-formatted form. Attach a photo and fingerprints to the reverse. Then, file the form. Each form had to be placed in a specific compartment within a filing-cabinet-system. The Dutch filing system contained three cabinets (for large head length, average head length and short head length) each first divided into 3×3 boxes (for length of middle finger \times breadth of head) each then again into 3×3 boxes (length of foot \times length of underarm); these boxes each contained three compartments for small, average and large height, each of which was divided into seven categories of eye colour. In total, there were $3^5 \times 7 = 5103$ possibilities (Fig. 4). With, say, 20,000 criminals filed, one would have an average of four in each compartment, so that one could easily match an existing file (with photo) with a new file (with photo).²⁵ In this way, one could identify recidivist criminals, producing an authenticated paper identity.

In the first year the system was used, Bertillon identified hundreds of criminals. Very soon, the system was adopted by other countries or large cities in Europe, the United States and elsewhere.

In 1896, following the advice of a high-ranking police officer from Rotterdam, the Dutch Minister of Justice decided to introduce the Bertillonage system for the Dutch police and prison registration system.²⁶ The forms were not filled in by police officers at police stations; only convicted criminals with a prison sentence of more than six months



Figure 4. Drawing of the Bertillonage filing cabinet for the Dutch system. NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 6639, ‘Stukken betreffende het strafregister en de signalementkaarten, 1895–1912’. Also see: Alphonse Bertillon, *Handleiding voor den beambte belast met de toepassing der lichaamsmeting enz.* (Rotterdam, 1895).

or those sent to state workhouses were ‘Bertillonaged’, as it was called. This was done in the prisons or workhouses where they were confined. Together with the photographs and fingerprints, the forms were sent to a central depot in order to be checked (identification) and stored (for future identification).²⁷ Extensive instructions for *Bertillonage* were published in Dutch, boxes with measurement instruments were purchased and special rooms were installed for their use.²⁸

The third case we discuss pertains to anthropometry, as used in a Dutch reform school for girls. Halfway through the nineteenth century, parallel with developments in child protection in other Western European countries and the United States, the first state-owned reform schools for criminal boys and girls were set up in The Netherlands.²⁹ In 1905, a set of laws known as the Children Acts radically reformed the re-education system. From then on, a diverse range of state-owned re-education institutions were established, each with their own target population of children. In order to ensure the individually-tailored treatment of each child entering the child protection system – a central principle informing the Children

Acts – an obligatory observation period was introduced, during which each child entering the system was assessed and classified on the basis of an elaborate, scientifically-underpinned examination.³⁰ To that end, Jan Klootsema designed the observation form known as the personal description file, which became part of a personal dossier in which different kinds of test results, reports and letters concerning one particular girl were combined (Figs. 5–8).³¹ Via this technique of assembling physical, psychological, mental, behavioural and biographical data, a ‘personal paper identity’ was enacted. The theory underpinning this method was set out in Klootsema’s 1904 book *Misdeelde kinderen* (Deprived Children) and was largely based on criminal anthropology and degeneration theory. Besides physical characteristics, the personal description file also recorded data on the pupils’ early development, family history and mental abilities. While the form was not only concerned with anthropometric measurement, here, we focus on this aspect of the form. Besides being filed in the pupils’ personal dossiers to track their progress, the reform school doctor, Hessel Postma, also used the forms to compile data on the pupils, which he processed statistically in publications about ‘the criminal girl’, thus producing a ‘categorical paper identity’.

In the State Reform School for Girls, the personal description file was the first loose form to be used in collecting and producing data on the pupils. Before its introduction in 1905, data about the pupils were recorded and kept in collective registers, such as a book of biographies (1859–1878), a register of physical descriptions (*signalementen*) (1859–1869) and bound ledgers on the behaviour of the girls (1859–1886). Here, information was entered in chronological order, making it harder to retrieve information on individual girls – who could only be located through indexes. With the introduction of the personal description file, a new system of administration was introduced, centred on the personal dossier. These were folders that contained the documents that had been produced about the individual girls before, during and after their stay in the reform school. The personal description file, which collected data on one girl alone, could be inserted into and retrieved from the pupil’s personal dossier. From 1905 to around 1925, the dossiers contained only the personal description file. Between roughly 1925 and 1950, the dossiers also contained documents such as the girl’s case file, her mental test results, the life history she was obliged to write upon admission, and monthly notes on her behaviour, which also frequently contained reports on her conduct after discharge. In many ways,

Rollenham, van huis [redacted] 11-14
 Bijlage B. Persoonsbeschrijving

RIJKSOPVOEDINGSGESTICHT
TUCHTSCHOOL te *Heist* Datum ingulling anamnese: *6. Aug*

De invulling van de gegevens, welke riefief zijn gedrukt, is facultatief.

No. [redacted] Naam [redacted] Voornaam [redacted]
 Geboren te [redacted] den [redacted]

Gegevens betreffende de familie

1 Vader geboren [redacted] is nog in leven, *aan*
 2 Moeder geboren [redacted] is nog in leven, *aan*
 3 Zijn de vader en de moeder gehuwd?
 4 Verwantschap van vader en moeder.
 5 Hoeveel kinderen hebben zij gehad? *11*
 6 Hoeveel kinderen zijn daarvan gestorven en waaraan? *1 doodgeb. 1 prijs-*
 is op bekend van: Bij de ouders: Bij ooms, tantes, broeders en zusters.
 7 zenuwziekte.
 8 kranzinnigheid.
 9 tuberculose.
 10 syphilis.
 11 andere ziekten voor het kind van belang. *moeder is grav. vader gezond.*
 12 dronkenschap.
 13 zelfmoord.
 14 misdrijven.
 15 Zijn de ouders beide of een van beide ontheven of ontzet van de ouderlijke macht of van, de voogdij, zoo ja, bij welke uitspraak en op grond waarvan, en hoe is daarna in de verzoeking van het kind voorzien?

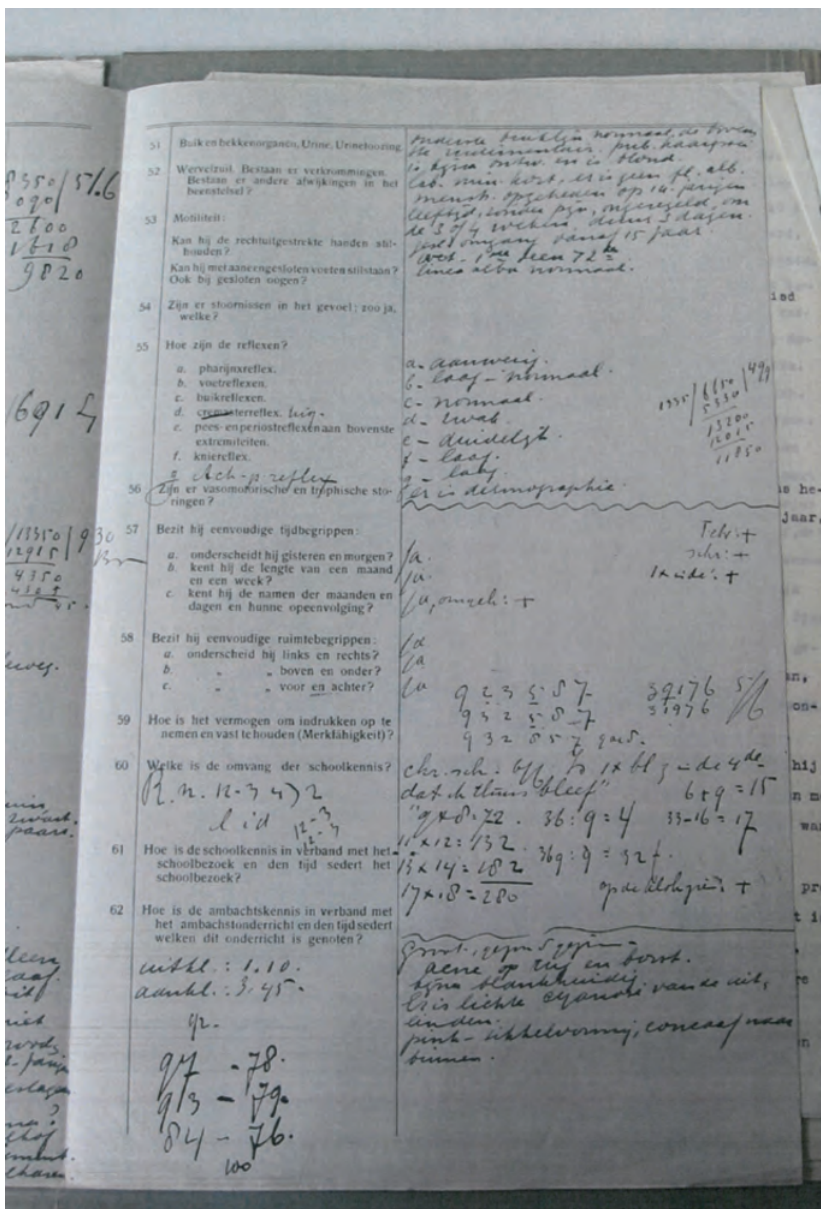
Het verleden van den verpleegde.

16 Hoeveelste kind is de verpleegde? *12de*
 17 Hadde zwangerschap en geboorte normaal verloop?
 18 Was het een borstkind? *ja*
 19 Leed het aan stuipen in de eerste levens jaren?
 20 Hoe oud kreeg het tanden?
 21 Hoe oud leerde het spreken?
 22 Hoe oud leerde het lopen?
 23 Leed het aan Engelse ziekte? *nee*
 24 Heeft het aan enige bijzondere ziekte geleden; zoo ja, welke?
 25 Leed het aan toevalen?
 26 Bestonden er andere afwijkingen in het zenuwleven? *Reductie alle ledematen*

Verwijzing van de verpleegde, die de beschrijving overneemt.
Godshout 26
16
15
9
7
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3
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Figures 5–8. An anonymized personal description file. Het Utrechts Archief, Archive 20, Rijksinrichtingen Kinderbescherming, Personal dossiers of the pupils, 1909–1950.

this new system was similar to the patient-centred record system in hospitals. Berg and Harterink showed how in late-nineteenth-century hospitals, institution-centred or physician-centred registers and logs were replaced by patient-centred medical dossiers which stored all the ‘inscriptions’ per patient.³²



Figures 5–8. (Continued)

thereby ‘standardizing the gaze’, as Peter Becker has formulated it.³³ Our analysis does not concentrate on the content of these choices, but on the technical aspects of the forms, concerning layout and design.

Van der Sande wrote that ‘the intention is that what is found is simply underlined or that one of the numbers (1), (2) etc. is noted down. This is to speed up the work’.³⁴ Bertillon, in particular, developed an elaborate system of abbreviations (Fig. 9).

Measures were noted in numbers, whereas the left eye, forehead and nose were described by codified abbreviations. Such a form shows how a body could literally become ‘encoded’ in the administrative police system, and in this respect can be seen as a forerunner of later systems using fingerprints, blood groups or genetic codes.³⁵ Bertillon’s codes referred to the body sur/face – to that which could be seen by lay people – but transformed these characteristics into measures and codes exclusively legible for professionals.

The size of the form was related to where the measuring took place. Broca, and later Van der Sande, developed a one-page form (folio) which could be used in the field.³⁶ Martin had obviously designed a form meant for use in a laboratory, consisting of two large A3 pages filled with small boxes and spaces to calculate indexes. It must not have been easy to handle these forms, even indoors. The Bertillon forms were smaller ‘cards’ (half a folio) which were meant to be stored in card boxes. While the cards needed to be made of heavy and stiff paper for easy sorting, for the expedition forms, Van der Sande wanted light ‘long-fibre’ paper which would not tear easily when it became wet.³⁷ The design of the personal description file – which consisted of one folded folio page – suggests there was less time pressure in examining the girls than in Bertillonage, where the success of the system was partly calculated in terms of how many prisoners one could ‘do’ in an hour, or in fieldwork anthropometry, where one had to deal with unwilling, anxious or distrusting people in rough outdoor circumstances.³⁸

The form’s design organized the measuring procedure and enabled examiners to work quickly, methodically and efficiently; measures taken with the same tool were often grouped together. In this manner, the form directed practitioners’ actions.³⁹ In the form Van der Sande designed, the height measures were placed in one row on the left-hand side, the head measures were located on the right-hand side, and the characteristics of hair, skin, eyes and teeth were featured on the reverse side.⁴⁰ Similarly, Bertillon’s form (Fig. 9) starts with the quantitative measures, followed by the descriptive ones. A small space was reserved in the bottom right-hand corner for special marks like

Verkeerd e foto

SIGNALEMENT-KAART.

No 2052 Datum van opname 20 Jun 18 96

Naam: Jansen

Voornamen: Saulus

Bijnamen: _____

Geboren 2 Juli 18 38 te 2 Hage Prov. Z. H.

Zoon van Jacobus Frederik en Cornelia Ham

Beroep _____ laatste woonplaats 2 Hage

Identiteitspapieren _____

Relaties Gehuwd

Militaire diensten _____

Vroegere veroordeelingen, aantal 2 mals in Dijkwaakhuis, resp. landl. speldslag met opz.

Misdrijf waarvoor bij het laatste vonnis veroordeeld. Door welken rechter? Handlooperij - Utrecht

Feit, waarvan thans verdacht _____

Geboortjaar 1838

Metingen en Beschrijving:

1/2 Lengte l m. <u>69.0</u>	Hoofl.	Lengte <u>10.9</u>	l. voet <u>26.2</u>	Kleur linker oog.	Klasse <u>3-4</u>
Rugwelling <u>0</u>		Breedte <u>14.8</u>	l. middenv. <u>11.8</u>		aureool <u>in orde</u>
1/2 Uitgestr. armen l m. <u>94</u>	Grootste horizont. breedte der jukbeenderen <u>13.3</u>		l. pink <u>9.5</u>	Kleur linker oog.	omtrek <u>l. gl. gr.</u>
Bovenlijf 0 m. <u>83.9</u>	Lengte r. oor <u>6.2</u>	l. enderarm <u>46.3</u>	bijzonderh. _____		

VOORHOOFD:		NEUS:	
Onderrand <u>m</u>	Hoogte <u>m</u>	Wortel (diepte) <u>h</u>	Lengte <u>h</u>
Profiel <u>sch</u>	Breedte <u>m</u>	Rug <u>l. g. g.</u>	Vooruitst. <u>g</u>
Bijzonderheden _____		Basis <u>n. bov.</u>	Breedte <u>bid.</u>
Opgemaakt in <u>duplo</u> door <u>J. C. Duburg</u>		Bijzonderheden _____	
te <u>Utrecht n° 2</u>			

Figure 9. A completed Dutch Bertillonage form 1896. Collectie Nationaal Gevangenis­museum, inv. nr. H7000, standplaats 6321068.

tattoos. The reverse side was used for a photo and fingerprints. The personal description file is clearly organized differently. This four-page form was organized into four separate sections: ‘Information on

the family', 'The patient's past', 'Current state of the inmate', and a space for further remarks. Through its design, it seems to have more in common with the structure of a physical examination, based around 'anamnesis' (a patient's medical history), 'diagnosis' and 'prognosis/therapy'.⁴¹ Indeed, the first two sections, containing information about the girls' family background and early development, are very similar to an anamnesis; the extended physical and mental examination in the third section offered the diagnostic part; and the decision of where to place the patient, for which purpose the examination was done, may count as 'prognosis/therapy' – however, the latter part is not visible on the form. The medico-diagnostic character of the form was also stressed by child protection professionals who used it. In a public debate about the form's usefulness in 1908, its advocates stated that filling in the form resulted in detailed medical knowledge of the child and its potential (contagious) diseases, which could then be treated. Moreover, they praised the structured way in which the form allowed them to work, stating that the prescribed questions steered away from merely recording 'impressions' and helped practitioners to work 'systematically'.⁴²

The logics behind the different form formats also indicate their different uses after they had been filled in: the measures decisive for the distribution of the Bertillonage forms were placed at the top of the front page so that they could easily be sorted within the card boxes. Fingerprints and photos were put on the reverse for checking, as they were not used for sorting. The size of the cards was crucial for their use in the distribution system; we found directives by the Minister of Justice about cutting off cards which had been printed erroneously on a larger format in order for them to fit in the system.⁴³

To make statistical analysis possible, Martin advised distinguishing between somatometric (quantitative) and somatoscopic (qualitative) data and placing the boxes to be completed in the upper and lower margins of the form. In that way, when the forms were imbricated you could easily read and add up all the numbers from one column at once.⁴⁴ Van der Sande put the numerical values on the left-hand and right-hand margins of the form, which allowed for comparison of outcomes by imbrication, but not for easy summation. The reform school forms were meant to become part of a personal dossier and do not show a logic for administrative distribution or statistical processing. Instead, each form came with a copy so that others – for instance, a police detective or the

mayor of the town the girl lived in – could fill in the ‘anamnestic’ part and send it back to the reform school.

Besides layout and design, standardization was one of the main innovative aspects of the anthropometric method for knowing and mapping differences among human bodies. It aimed at enabling data to travel between different contexts of measuring, different scientists and countries as well as over time. This is what Daston and Gallison have called the ideal of ‘communitarian objectivity’, as Peter Becker has also noted.⁴⁵ To achieve this ideal, much energy was invested in getting anthropometrists to measure ‘the same thing’, both quantitatively and qualitatively. This also required the scientist to be highly disciplined and ‘selfless’.⁴⁶ As we show below, the development and careful design of forms was one of the important ways through which such standardization was brought about.

With respect to quantitative measures, anthropometrists were supposed to agree about the reference points they used: from which to which point exactly bodies were measured. One of the largest problems was the difference between researchers in what and how they measured; anthropometrists were also aware of this themselves.⁴⁷ While instructing expedition leader Lorentz on how to conduct anthropometric measurements, Van der Sande stressed the enormous importance of keeping to the same standards. According to him, a colleague had made a serious mistake in measuring head lengths by taking the wrong measuring points. Van der Sande drew a small sketch to explain (Fig. 10).

He commented:

Unity of methods and means of research is such an important issue; the outcomes of different researchers will then be more directly comparable. Of what use are measures of the breadth of the nose to me when A. takes measures from the place where the skin of the face is connected to the nostrils, whereas B. measures the largest span of the nostrils standing out?⁴⁸

When it came to qualitative characterizations of bodies, anthropometrists had to use the same terms and categories. Not only was everybody supposed to agree on how to name what, but also on what categories would be used and the degree to which one was supposed to differentiate. Some terms were taken from the field of medicine. However,

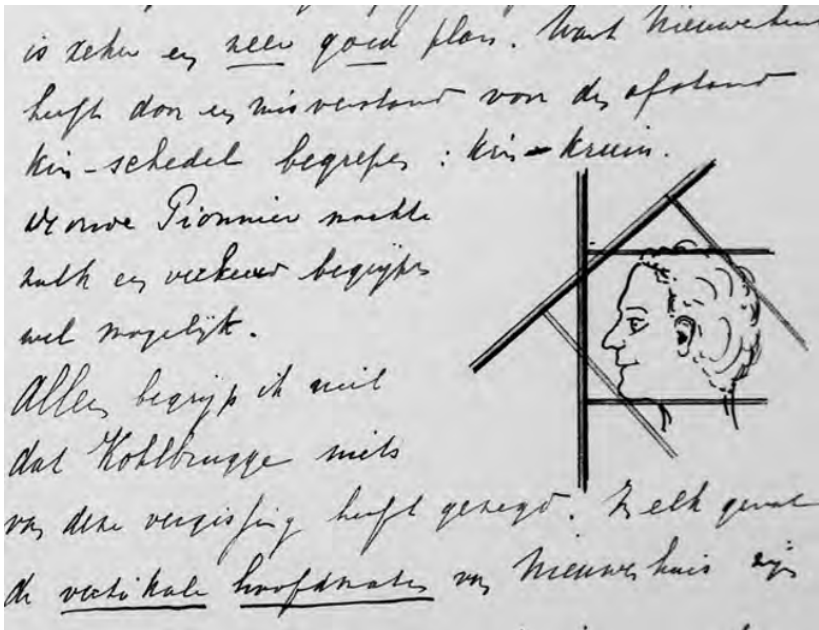


Figure 10. Drawing in letter from Van der Sande to Lorentz, NL-HaNA, Lorentz, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 22 February 1906.

many aspects of the body which were medically not very interesting, such as eye colour, ear shape or the degree of ‘curliness’ of the hair, also had to be given labels that could be shared. As Nélia Dias has argued, much effort was spent on transforming descriptions (which were judged vague and subjective) into numerical codes.⁴⁹

Illustrations must have been crucial in the development of standard anthropometric terms and numerical codes. For example, we were initially puzzled by the detailed list of different hair structures in the form designed by Van der Sande (Fig. 11).

Translated, it reads: ‘1. Straight stiff 2. Straight fine 3. Flat wavy 4. Large wavy 5. Small wavy 6. In locks 7. Stretched frizzy 8. Loose frizzy 9. Tight frizzy 10. Spiralled frizzy’. What, precisely, were these words meant to refer to? How anthropologists would have been able to distinguish between different hair types on the basis of these descriptions in a uniform and consistent way seemed somewhat of a mystery. Martin’s handbook, however, contained illustrative sketches (Fig. 12).

- 
- (1) recht stug
 - (2) recht sluiik
 - (3) vlak golvend
 - (4) breed golvend
 - (5) eng golvend
 - (6) gelokt
 - (7) gestrekt kroes
 - (8) los kroes
 - (9) dicht kroes
 - (10) spiraal kroes

Figure 11. Part of Van der Sande's form, showing his characterization of hair structures. Manuscript of the National Library of The Netherlands, The Hague, in L.S.A.M. von Römer, *Voet- en handafdrukken verzameld tijdens de Nieuw-Guinea-expeditie 1909. Deel I, Cijfermateriaal* (n.p., n.d.).

In anthropometric manuals, words were combined with sketches and photographs to explain what was meant. These examples alone make clear how much must have been invested in developing a standardized vocabulary or numerical order necessary for scientists and police officers or bureaucrats to enable the exchange and accumulation of data about human bodies at the time. Interestingly, specific terms were often translated into other languages in order for them to be able to travel between countries: both Martin and the Dutch Bertillon manual gave the major measuring points in several European languages.⁵⁰ Numbers clearly had the advantage that no translation was needed.

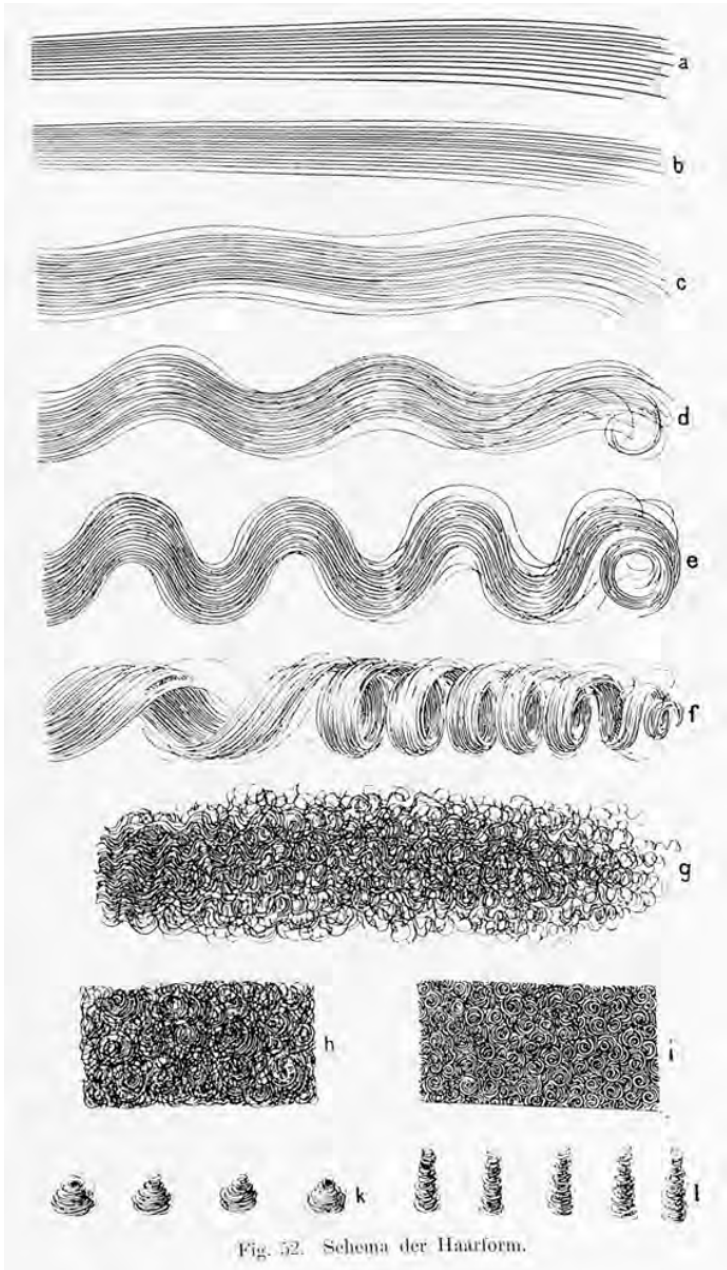


Fig. 52. Schema der Haarform.

Figure 12. Overview of hair structures in Rudolf Martin. Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für Studierende Ärzte und Forschungsreisende*, 190.

Besides common terms and categorizations, anthropometrists also used charts for determining hair colour, skin colour and eye colour. This was clearly to avoid observations that were only based on the researcher's rough impressions. Van der Sande expressed a deep concern about subjective descriptions and propagated the scientific objectivity obtained by the use of Broca's colour chart (Fig. 13):

It is absolutely necessary to bring a colour chart for skin colour ... When you check the literature on N. Guinea, time and again you notice how visitors who do not mention the numbers of a colour chart, who apparently did not carry such a chart with them and mostly described the colour only from memory or at a rough estimate, indicate shades that are much too dark: dark negro black, deep charcoal black and such terms. Where numbers are mentioned, from Broca's scale, there you will generally notice that precisely the darkest numbers of all the horizontal colour rows are never mentioned; that clearly establishes the benefit of a system.⁵¹

In order to produce an objective observation, the subjective impression of the observer had to be turned off by using a device that standardized it.

By requiring the use of numbers, or providing a set of options to underline, the forms allowed for quick and efficient notation while standardizing their observations at the same time. Moreover, as Martin explained, the predetermined multiple-choice options on a form could often be understood as fixed grades on a scale. Numbering them would allow for quantification: an average 'colour number' or 'curliness number' could be given for a measured population.⁵² Again, the reform school forms differ in this qualitative part. In some cases, options were listed, as in questions such as, 'How is its character (corrupt or honest, naughty or obedient, given to teasing or friendly?)' and 'Complexion (healthy, pale, sallow)'. In most cases, however, no options were given, as in the following questions: 'Teeth', 'Tongue. Palate' and 'Chest organs'. Here, the examiner was left free to record whatever they saw fit. When comparing the completed forms, it becomes clear that reform school doctor Postma had a set of possible options to choose from in mind. This attempt at standardization, however, was never incorporated in the form.

Despite the tremendous effort to standardize measures in anthropometry, we found, strikingly enough, that *between* different contexts

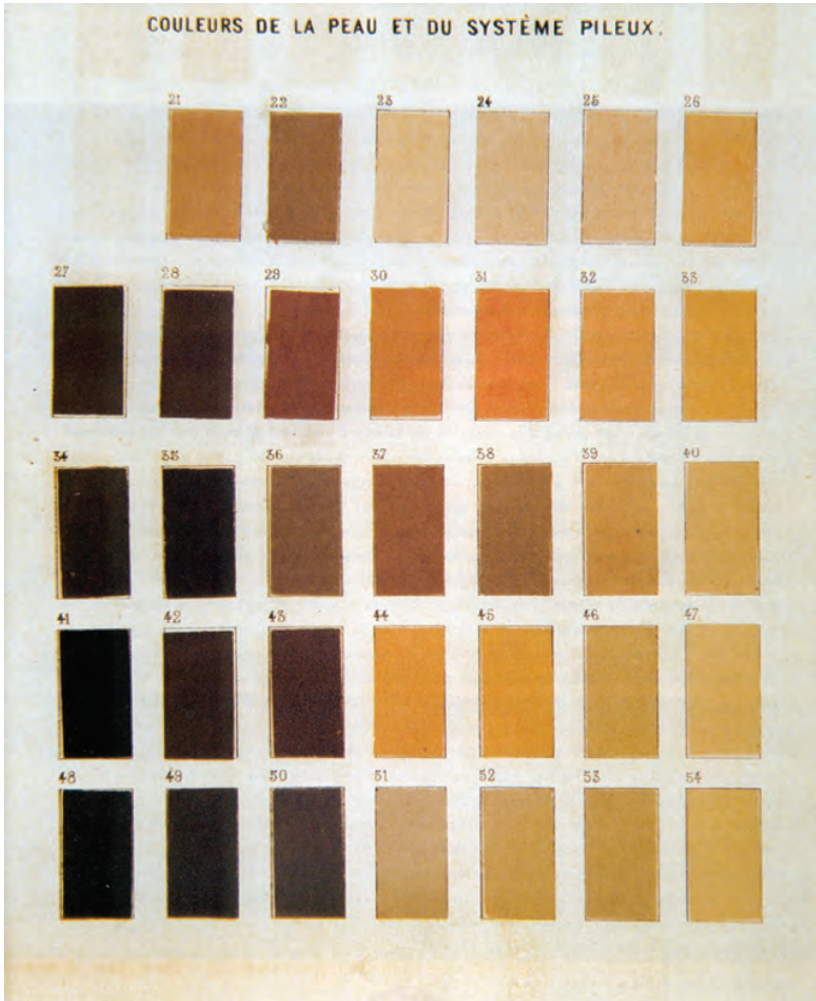


Figure 13. Broca's colour chart, appendix to Paul Broca, *Instructions générales pour les recherches anthropologiques à faire sur le vivant* (Paris, 1865).

of anthropometry, the measurements were not the same at all. A careful comparison of the data actually recorded on the forms revealed that out of the sixty to 120 items on the forms, only a very small number actually corresponded: the number of the case, name, age (or date of birth), height, and skull length and breadth. While each form also said things about, for instance, the ears, eyes and nose, these notes and measurements are barely comparable. No easy travel was possible between

the measurements of criminals, Papuans or delinquent girls. While, in the light of recapitulation theory, these populations should have been interesting to compare more precisely, the actual measurements did not allow for a comparative analysis of the data.

We are aware of the fact that the contexts and disciplines of the three forms were very different and the likelihood that the practitioners would ever meet or collaborate very low. Yet, at the time, there clearly were attempts to combine and standardize anthropometrical methods for criminology, physical anthropology with regard to individual bodily development, and racial theory. Rudolf Martin himself, for example, tried to combine all anthropometry in one single form – an attempt taken over by Van der Sande on a much more humble scale – and made extensive use of Bertillon for his rigorous manual. Historiography has described how physical anthropological theory aimed at showing similarities between criminals, women, children and ‘lower races’, but does not pay much attention to what exactly anthropometrists measured or how their measurements compared across disciplines. The fact that there was as good as no agreement on what to measure and how, might certainly be labelled ‘surprising’.

Our analysis also showed that, in practice, forms were geared at particular groups. Martin’s form was meant to be exhaustive, as it was designed to cover all the anthropometric objectives he could imagine at the time. However, he urged researchers to select measures that were relevant for the specific purposes of their research, making a clear difference between racial research and research into the process of individual human growth: ‘Therefore, during racial research the measures of the extremities can be omitted, as these are only important for individual bodily development, while for school statistics etc. many head measures are superabundant, because they are only relevant in racial diagnostics’.⁵³ This shows how a set of measurements used to differentiate *between* (racial) populations bracketed measures showing individual differences within populations, whereas endeavours to study growth differences within a population disregarded measures concerning the racial or group specificity of that population.

Thus, the selection of qualitative data recorded on the forms disclosed implicitly intended populations. Because the options to choose from were often already given, an average range and distribution of

characteristics were implicit in the form – and with them, a presupposed population. Bertillon’s forms and those of the girls’ reform school, for instance, hardly paid any attention to skin colour or hair structure, at least not in the minute detail of Van der Sande’s form. With respect to these characteristics, the girls’ form only featured two questions: ‘Complexion (healthy, pale, sallow)’ and ‘Colour of the hair’.⁵⁴ They did not include any predetermined questions on hair structure.

Apparently, both Bertillon’s form and the personal description file presupposed a mostly European population, in which detailing information about skin colour and hair structure would not differentiate them among themselves. Van der Sande’s form, by contrast, was not meant to be confined to the measurement of a single population (Papuan) only; it had the pretention of serving all future Dutch anthropometric research. As such, it gave the choice of a very wide range of hair structures. However, it could not distinguish *between* the hair structures of different Papuans, which would all be hair type ‘g’. The form did not allow for much fine-grained difference between Papuans, and therefore already grouped them all together in their difference to peoples with other hair structures. Establishing the physical differences between peoples all over the world thus demanded, for anthropologists, different degrees of refinement than distinguishing between Europeans did.

The personal description form was originally designed for boys and did not ask about any sexual aspects, nor were these present in Klootsema’s theory. Just as Europeans did not seem to have a significant skin colour, boys did not have a sex worth noticing. However, under the rather open questions of ‘Chest organs’ and ‘Stomach and pelvic organs, Urine, Urination’ Postma systematically added extensive information with regard to the sex of the girls: the development of their breasts, the colour and circumference of their nipples and areolas, the development of pubic hair, the size of the labia minora and majora, the state of the hymen, the appearance of vaginal discharge, the age of menstruation onset, the regularity and character of the menstruation, and whether (from what age, how often) coitus had taken place. This shows how, in Postma’s practices, the standard blindness for boys’ sex changed into a rather intrusive interest in sex in the case of lower-class, delinquent girls.

Finally, the forms and the way they were used betray a strong tension between an epistemic ideal of precision and detail on the one hand and

workability on the other. Many anthropometrists added or refined measurements. In the 1908 debate on the usefulness of the personal description file, doctors Wijhe and De Flines indicated that they thought that the number of head measurements the form required was too low and wrote that they frequently added extra measures in their practice.⁵⁵ As Ledebur has shown for a clinical psychiatric context, such additions to forms point towards a desire for more ‘completeness’ on the part of the practitioner.⁵⁶

Van der Sande’s use of the Broca skin colour charts are a fine example of this. The chart itself seems to display a straightforward categorization of skin colours. However, where exactly did one measure skin colour? Van der Sande advised to measure it ‘at different parts of the face: forehead, cheeks; trunk, breast, back, hand palms after washing’.⁵⁷ Similarly, Van der Sande also did not only differentiate between ten different hair structures, but differentiated between hair on the skull, pubic hair, facial hair and hair on the torso, as well as between colour,

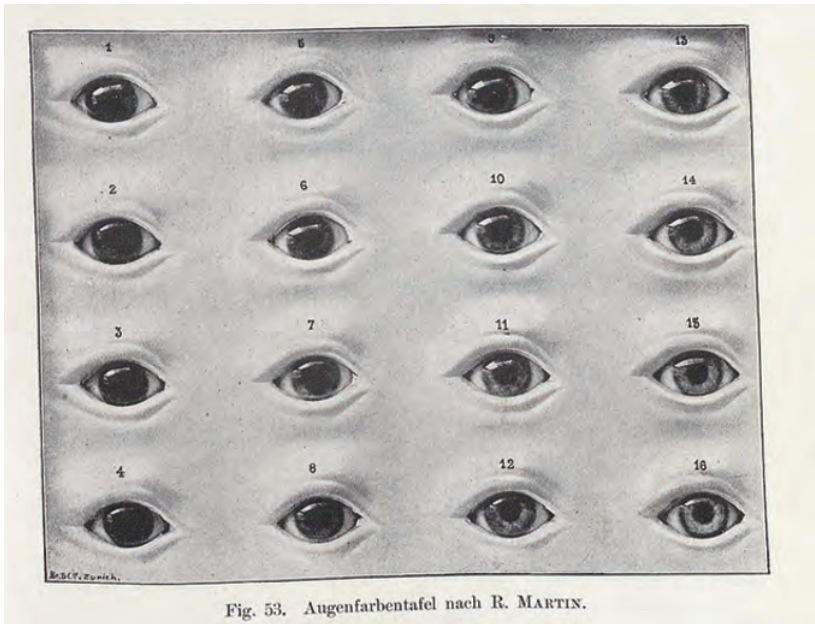


Figure 14. Eye colour chart by Martin. Rudolf Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für studierende Ärzte und Forschungsreisende* (Jena, 1914), 193.

tightness and structure. Differentiating the places where something had to be measured thus often caused an explosive accumulation of data.

Around 1900, Broca's colour chart started to be replaced by a more refined one designed by Von Luschan; this one particularly differentiated better between shades of whiteness.⁵⁸ To determine eye colour, Martin designed a ghastly box of very realistic glass eyeballs to replace Broca's earlier and simpler chart (Fig. 14).

Degree of detail very much increased after Broca's first charts, demonstrating a desire for precision and verisimilitude. This can also very easily be seen when comparing Broca's form with Martin's form. Martin's form, designed for use in a laboratory, was exceedingly detailed – to any anthropometrist's despair, we would say (Fig. 15).

The ever-increasing urge to refine the grades of difference of eye colour, shape and colour of the eye, shape of the ear, hair colour and hair structure, as well as the increasing number of places where to measure these, in order to approximate 'reality' as best as possible, created an overwhelming multiplication of data. Bertillon had tamed the amount of measurements for his anthropometric identification

The image shows a page from an anthropometric form, organized into a grid. The top section is titled 'Sonderausgaben' and lists various measurement points with corresponding letters (A, B, C, etc.) and symbols (X, O, etc.). The middle section is titled 'Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen' and lists 25 numbered measurement points with their descriptions and symbols. The bottom section contains a grid of symbols (X, O, etc.) and numbers (e.g., 45, 48, 52, etc.) corresponding to the measurement points.

Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben		Sonderausgaben	
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Länge des rechten Oberarmes	Länge des linken Oberarmes	Stärke der rechten Hand	Stärke der linken Hand	Größe des rechten Fußes	Größe des linken Fußes	Länge des rechten Unterschenkels	Länge des linken Unterschenkels	Länge des rechten Oberarmes	Länge des linken Oberarmes	Stärke der rechten Hand	Stärke der linken Hand	Größe des rechten Fußes	Größe des linken Fußes	Länge des rechten Unterschenkels	Länge des linken Unterschenkels	Stärke der rechten Hand	Stärke der linken Hand	Größe des rechten Fußes	Größe des linken Fußes	Länge des rechten Oberarmes	Länge des linken Oberarmes	Stärke der rechten Hand	Stärke der linken Hand
45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68

Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		Die wichtigsten anthropometrischen Maße sind durch entsprechende Abbildungen zu veranschaulichen		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
Ohrlänge des Kopfes	Ohrlänge des Kopfes	Kopfhöhe des Kopfes	Zehnlänge des Kopfes	Uhrerlänge des Kopfes	Uhrerbreite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes	Stirnweite des Kopfes
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
45	48	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74

Figure 15. One out of four pages of Martin's anthropometric form, appendix to Rudolf Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für studierende Ärzte und Forschungsreisende* (Jena, 1914).



Figure 16. Eye colour chart by Bertillon, appendix to Alphonse Bertillon, *Identification anthropométrique: instructions signalétiques: album* (Melun: Imprimerie administrative, 1893) attached chart.

of recidivists; however, in his later work on the ‘portrait parlé’ he developed systems for describing suspects with an absolutely dazzling amount of detail. Bertillon’s beautiful eye chart illustrates this eloquently (Fig. 16).

In addition to this tension between detailed ‘realness’ and workability, another tension could lead to an unrestricted accumulation of data: the tension between the scientific ideals of selfless discipline and that of creative inventiveness. Theoretically, forms steered the examiner’s gaze and disciplined their measuring practices by the order of the measurements and the use of standards, reference points and the pre-given degrees of refinement of the qualitative elements. Moreover, as Bernet has argued, forms were intended to reduce complexity.⁵⁹

However, we already saw how Postma added information about the girls’ sexual organs and menstruation, and other users of the personal description file extended the measures of the head. Postma also systematically noted the girl’s birth order number. Von Römer, too, meticulously and systematically added measuring points to the form, in contrast to the sloppy way he filled in the required measures. At a space Van der Sande expressly left open for free remarks or a drawing, Von Römer drew new lines, with pencil, on all the forms he filled in, and wrote fourteen new standard measures on each of them, including the circumference of the pelvis, the distance between the nipples and the ‘anal cleft’. He did not actually measure these things among the Papuans, but he managed to measure them among the Dayak ‘coolies’ who were part of the expedition.

The doctors and scientists filling in the forms thus took the liberty of leaving boxes blank as well as inserting new measures. Their gaze was not directed only by what the forms taught them to see; scientific ambition also played a role. Both Postma and Von Römer were scientists and published on the data they collected in their examinations. Between 1916 and 1941, Postma published a dissertation and several articles on female juvenile delinquency using data from the reform school forms.⁶⁰ Von Römer had similar ambitions with, among other things, quantitative data on the sexual desires and habits of Amsterdam students.⁶¹ Both probably hoped to achieve academic success by investigating aspects of the girls and the Papuans, which had hitherto gotten little scientific attention. The way the forms were filled in clearly shows the tension between the assignment to keep strictly to given standards and measuring points and the urge to strike upon something new, something to make one stand out scientifically. Besides the tension between amount of detail and workability, therefore, the completed forms expose the ambivalence of a scientific self that had to be both self-less *and* inventive.⁶²

With regard to the Bertillonage system, however, a strict discipline was kept. From the correspondence between the prisons and the Central Depot we know that incorrectly completed forms were sent back with requests for correction. For example, bureaucrats from the Depot mentioned a range of problems to the director of the prison in Arnhem, such as the measure of an underarm that seemed incorrect, the missing characterization of an eye (and a request for the missing information), or the description of the location of a tattoo, which seemed wrong. These requests were answered by the prison director, who promised that the person in charge would be addressed about these problems. Other correspondence pointed at problems with the format of the cards, the fact that different names were used for the same person and incorrectly folded cards; not only the measuring, but problems regarding the administrative system had to be tamed continuously.⁶³ In all probability, bureaucrats would not be rewarded for creative adaptations of the forms, so that we can assume that they met best with the epistemic virtue of ‘self-less’ and ‘mechanistic’ observation and notation. Bertillonage therefore probably yielded the best ‘tamed’ anthropometric measurements.

Filing and Failure

The Bertillon system was introduced in order to be able to identify recidivist criminals. However, the system did not function properly. Ten years after it was introduced, a very negative evaluation was sent to the Minister of Justice. First of all, according to the evaluation, the Central Depot hardly ever managed to identify an unknown criminal in this way. The measures turned out to be too imprecise. The minister's advisor wrote:

The imprecision is repeatedly shown when a registration of a person who has already been 'bertillonaged' before is sent [to the central depot]. When such a card [i.e., an incorrect one] is sent back to be corrected, often a surprising phenomenon occurs: the new measurement indicates numbers that do not correspond to either of the two previous ones! This is just to explain by means of one incident how defective the system is, how difficult a consultation [is], and how unreliable the results [are].⁶⁴

Another problem was that instead of an even distribution of the cards over the rubrics, so that only a few cards would end up in each box and identification on the basis of the adjoined photographs would be an easy task, too many ended up in the same box. As Sekula has argued, Bertillon's identification system rested heavily on Quetelet's invention of 'average man': only because he counted on a statistical bell curve in the distribution of measures among the French population could Bertillon decide which head lengths were 'large', 'medium' or 'small'.⁶⁵ By basing the standard cut-off points between 'large', 'medium' and 'small' on existing statistics of the French population, he ensured that the cards would be evenly distributed over all the boxes. For that reason, the Dutch had adapted the cut-off points used in the French system to Dutch averages. However, that did not help either:

But even now we have changed the measures of the borders indicating each rubric because of the generally larger constitution of the Dutch, still the piling of cards in only a few boxes makes the consultation of the collection far from easy. To change the measures again would be a gigantic effort because all the thousands of cards would have to be re-arranged, which would take time and many hands ... That is something I would rather not advise.⁶⁶

As we see, the measuring itself failed, and the filing system did not function. The advice was clear: the Minister should abandon the system by gradually replacing it with the (then also new) fingerprinting system. Because Bertillonage served a clearly defined aim – identifying recidivist criminals – the faults of the measurements could be spotted very early on: after ten years, the system was abandoned in the Netherlands.

By contrast, despite disappointing results, and despite the Holocaust and its aftermath, physical measurements continued to be taken in Dutch New Guinea until at least the late 1950s.⁶⁷ In the reform school, girls were measured until the early 1950s, despite criticism by child protection professionals that arose almost right after the introduction of the form and flared up again in the 1930s.⁶⁸ There are probably many different reasons and circumstances to explain why the forms continued to be used, but one of them certainly concerns the processing of the data in practice.⁶⁹

The personal description file was designed to classify each pupil entering the state reform schools according to three categories of ‘deprived’ children: the backward, the criminal and the neglected child. The questions on the girl’s early physical development and current physical state could point to degeneration and could aid in the girl’s diagnosis as ‘backward’ or ‘criminal’.⁷⁰ Interestingly enough, however, the girls’ reform school was not equipped to divide the pupils according to the categories of the form. Instead, new pupils were divided into classes for girls with an institutional history, girls with a sexually undesirable past and girls with a ‘normal disposition’.⁷¹ There was thus a disconnect between the categories of the form and the categories of the institution.⁷² What’s more, within the rest of the girls’ dossiers, the information gathered in the personal description files was never referred to again. The doctor wrote summarizing reports on the personal description files, which were stored in the girls’ dossiers. These only made note of particularly striking pieces of data that had been recorded in the initial examination; other data, which were evidently considered superfluous, were left out. Moreover, these summarizing reports were never referred to again in the girls’ dossiers. Unlike Bertillonage, the filing system in the reform school did not lead to failure or abandonment of the technique.

The administrative system in which the form was filed accommodated loosely assembled information about the individual girl. Within the dossier, which was the central nexus of the reform school's filing system, a personal identity was only performed as a loosely chronological collection of disparate characteristics and descriptions of behaviour. When information was not useful or had no clear connection to the placement, treatment or re-educability of the girl, it was simply not used without being discarded as unnecessary. The filing system of the dossier, then, had no point of saturation and no point of failure; it was open-ended.

Physical anthropologists in the colonies trained in the Martin school aimed at establishing racially categorized identities through linking geographical populations to specific physical traits. As far as we know, Von Römer never published any results, and we suppose this would have been difficult with the often only half-completed forms he brought back. He probably was not at all alone in delivering such a 'mess'; recent historical research has shown the many ways in which racial anthropometrists failed to meet contemporary scientific standards in practice.⁷³

For our understanding of how categorical identities were performed by anthropometry, we will therefore use an example of the apparently much more successful anthropometric exploration of parts of the north of Dutch New Guinea some years earlier, in which Van der Sande, who had designed the form, had been the physician and anthropometrist. We will show how arbitrary the categorical identities were that Van der Sande created using the data accumulated in the individual forms.

He published a meticulous, detailed study of eighteen adult males and three women from Humboldt Bay (on the coast) and twenty-two adult males and two boys from Sentani Lake (more inland). All the form's measures are given, here, in tables, including many indexed data. Besides that, extensive descriptions of teeth, hair and nails (including detailed measurements, drawings and pictures) are given, and many kinds of physical behaviour are described.

There was no method to the way in which Van der Sande calculated statistical relevance. In particular, the demarcation of populations was not defined. He sometimes combined his data with similar data from other studies, which meant that the population measured changed its geographical boundaries; he switches, for example, between confining himself to his own data about a small part of northern Dutch

Table 1. Some measures in tables from Van der Sande. Van der Sande, 1907, 339–348.

Measure	Variation within/average of population(s)	Contrasting population(s)	Results
Length and width of teeth	Papuan (not clear what population exactly, probably only VdS's measures)	Melanesians, Australians, Tasmanians; Europeans	Teeth length larger than Melanesians, Australians, Tasmanians; Averages both length and width among Papuans often higher than max Europeans. Megadontism is Papuan characteristic.
Frequency of respiration	VdS's own measures + Jabim; + Melanesians + various 'tropical races'	Europeans	The variations among non-Europeans have an higher average than Europeans
Relation between respiration and heart rhythm	Papuans (measured by VdS)	Europeans	Much lower among Papuans than among both Europeans and 'coloured races'
Standing Height	Several populations of New Guinea, differentiated among themselves	Among themselves, especially coastal and inland comparisons	Coastal people taller than inland people (measures by VdS) A lot of variation 'within the tribe', meaning all over NG;
Arm span/arm length in relation to body length	Papuans, measured by VdS, others from NG, Deli Malays, Veddah	Eastern Asia 'us' 'Elsewhere'	'Long-armed', both in contrast to East Asians and 'us'
Length of parts of the arm, relative length of fore-arm	Papuans, measured by VdS, Fak Fak people (NG)	Europeans; in model drawing by Fritsch.	Very long fore-arm in relation to rest of arm

New Guinea and referring to ‘Papuaans’ more generally, including data from other regions. Also, the population serving as a contrast frequently changed. This happened in relation to the feature measured. Here, we give an example of a selection of his tables and written comments on them, in one overview (Table 1).

Van der Sande thus chose both the populations he combined and those he compared them with per feature measured, in order to create seemingly telling (statistically significant) quantitative pictures.

Outside the reform school context, in Postma’s publications, categorical identities were produced for the reform school pupils as well. In several articles, based on data from the personal description files, Postma linked the anthropometric measurements of the girls to their family situation, geographical descent, type of (criminal) behaviour and race. Staying within one population and accounting for differences within this population already made these statistics more trustworthy than Van der Sande’s. However, because Postma never revealed the aim of his research in advance, the problem with his work is what is now called statistical ‘fishing’: establishing connections from the data without checking these on a new set of data. In this case, populations were created by choosing (promising) data to analyse. Thus, both Van der Sande’s and Postma’s statistical methods were open-ended: as the demarcations of populations were not independent from the statistics of measured physical characteristics, the search for connections was virtually indefinite.

As shown in the previous section, the tensions between workability and realness, and between scientific selflessness and the individual’s scientific drive to stand out, were too strong for the forms to completely discipline their users. Mostly, these tensions stimulated the production of ever more and new detail and data. Moreover, the statistical analysis of these data was open-ended because of the lack of a point of saturation or failure. In an anthropological practice in which no clear, definite boundaries of either measurements or populations were given, therefore, the measuring had no end.

Conclusion

This article has provided an analysis of a mundane scientific technique which appeared almost simultaneously in different anthropometric practices in the Netherlands around 1900: the loose form. Our praxiographic

analysis has shown, to begin with, that loose forms played a central role in the emergence of administrative systems to identify criminals (Bertillonage) and track individuals' development (the personal dossier), and in the production of racial-anthropological knowledge on colonial subjects as a group. As such, the loose form was central to developments in record-keeping, the growth of the surveillance state, the increased focus on rehabilitation rather than punishment, as noted by Foucault, and the colonial-anthropological underpinning of ideas of Western superiority. As we have seen, it was the loose form that enabled the insertion of the bodies enacted through anthropometric measurements into new penal and rehabilitative administrative systems and colonial-scientific logics, as paper identities. To be inserted into new bureaucratic and administrative systems and colonial-scientific systems and logics, bodies had to be transformed into paper identities. This is where the form came in. Within anthropometry, the loose form functioned as a paper tool that connected bodies to paper identities. To uncover how this took place in practice, we examined the infrastructure of three different loose forms. This brought us to a number of conclusions.

First of all, the invention of the loose form – which offered the possibility for new types of filing and combining data – created three types of paper identities: authenticated (Bertillonage), personal (reform school girls) and categorical (Papuan and reform school girls). Loose forms potentially offered much better possibilities to link these authenticated, personal and categorical identities than prior registration and notation systems, as loose forms were not bounded to a predetermined bureaucratic system. In practice, however, such connections were only made in the case of the girls' reform school, where an individual identity was composed by means of the dossier, and the information gathered was also used to create statistical relations between the girls' bodies and criminal behaviour. While loose sheets technically afforded the combination of individuating and categorizing, a dual function of what Foucault labelled the 'examination', this did not take place in the administrative practices described here. What type of paper identity was produced was shaped by both the context of measuring and filing (penal, rehabilitative or colonial-scientific) and the ambition, interests and purposes of the measurer.

Second, loose forms directed, standardized, quantified and sped up anthropometric practices. Discussions about the design of the forms and the instructions for their use show how the anthropometric researcher

had to be tamed, so that only standardized, exchangeable data were produced. This happened primarily within disciplines, despite the fact that anthropometrical manuals aimed at making connections between different branches of medical anthropology, such as criminology, pedagogy and physical anthropology. Our research shows that the theoretical links between these disciplines were not strengthened by a shared system of measuring standards.

Third, the bureaucratic system of Bertillonage showed extreme strictness in keeping to the procedures. In the case of pedagogy and racial anthropology, however, we noted a strong tension between the intended ‘taming’ of the researcher and the researchers’ desire to improve and innovate. The epistemic ideals of detailed precision or ‘realness’ versus selection and standardization, too, sometimes apparently conflicted. Thus, the practitioners involved in the measuring and filing practices of Bertillonage were the best disciplined; yet Bertillonage was abandoned in the Netherlands after ten years, precisely because its measures were still too sloppy.⁷⁴ Not one single unknown criminal was identified through the system. This quite sobering result stands in sharp contrast to the ongoing anthropometric practices in the Dutch State Reform School for Girls (until the early 1950s) and in Dutch New Guinea (until the early 1960s). While there was an obvious disconnect between the personal description file and the categorization and treatment of the girls, and while statistics on racial differences constantly shifted the geographic populations to which they were connected, this did not prevent the researchers from continuing their measuring. We have analysed this as the absence of a ‘point of failure’: establishing a link between a body and an individual’s biographical, behavioural, mental and psychological characteristics, between criminal behaviour and physical development, or between a geographically defined population and its physical characteristics, turned out to be practically open-ended. Not only the administrative systems in which the forms were filed ensured this open-endedness, but the anthropometrists’ objects of study themselves – the human bodies they measured – provided nearly infinite possibilities for devising new measures and coming up with new connections. However, this infiniteness explains just as much why the researchers involved could continue believing that there *should* be, somehow, a connection to ‘identity’ they still only had to trace. As a result, which body was enacted by measurement was – and is – continually being re-formed.

Notes

- 1 Siep Stuurman, *The Invention of Humanity: Equality and Cultural Difference in World History* (Cambridge, MA: Harvard University Press, 2017).
- 2 Annemarie. Mol, *The Body Multiple: Ontology in Medical Practice*, BOOK (Durham: Duke University Press, 2002). Geertje Mak, *Doubling Sex: Inscriptions, Bodies and Selves in Nineteenth-Century Hermaphrodite Case Histories*, BOOK (Manchester University Press, 2012). Geertje Mak, 'Touch in Anthropometry: Enacting Race in Dutch Papua New Guinea 1903–1909,' *History and Anthropology*, 2017, 1–23.
- 3 Matthew S Hull, 'Documents and Bureaucracy,' *JOUR, Annual Review of Anthropology* 41 (2012): 251–67. 253 doi:10.1146/annurev.anthro.012809.104953.
- 4 Volker Hess and J. Andrew Mendelsohn, 'Case and Series: Medical Knowledge and Paper Technology: 1600–1900', *History of Science* 48.161 (2010); Paper (and filing) technologies have been studied in: Marc Berg and Paul Harterink, 'Embodying the Patient: Records and Bodies in Early Twentieth-Century US Medical Practice', *Body & Society* 10.2–3 (2004) doi:10.1177/1357034X04042931; Rebecca Lemov, 'Filing the Total Human: Anthropological Archives from 1928 to 1963', in Charles Camic, Neil Gross, and Michèle Lamont (eds), *Social Knowledge in the Making* (Chicago and London, 2011). Jane Caplan and John Torpey (eds), *Documenting Individual Identity: The Development of State Practices in the Modern World* (Princeton and Oxford, 2001) is an exemplary volume on the history of the documentation and filing of individual identities, containing two chapters on forms: Peter Becker, 'The Standardized Gaze: The Standardization of the Search Warrant in Nineteenth-Century Germany' and Andreas Fahrmeir, 'Governments and Forgers: Passports in Nineteenth Century Europe'. These articles concentrate on the content and standardization of selected data far more than on paper technologies.
- 5 Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Vintage Books, 1995).
- 6 Stephen Jay Gould, *Ontogeny and Phylogeny* (Cambridge, 1977).
- 7 Peter Miller and Nikolas S Rose, *Governing the Present: Administering Economic, Social and Personal Life* (Cambridge; Malden: Polity Press, 2013), kindle location 224–258.
- 8 For enactment of bodies in practices of anthropological measurements, see: Mak, 'Touch in Anthropometry'.

- 9 Hull, 'Documents and Bureaucracy', 253.
- 10 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory*, ELEC (Oxford: Oxford University Press, 2005).
- 11 Also see: Brigitta Bernet, 'Eintragen und Ausfüllen: Der Fall des psychiatrischen Formulars', in Sybille Brändli, Barbara Lüthi and Gregor Spuhler (eds), *Zum Fall Machen, zum Fall werden: Wissenproduktion und Patientenerfahrung in Medizin und Psychiatrie des 19. Und 20. Jahrhunderts* (Frankfurt and New York, 2009) 68; Sophie Ledebur, 'Schreiben und beschreiben: Zur epistemischen Funktion von psychiatrischen Krankenakten, ihrer Archivierung und deren Übersetzung in Fallgeschichten', *Berichte zur Wissenschaftsgeschichte* 34 (2011) 109, doi:10.1002/bewi.201101473.
- 12 Volker Hess, 'Formalisierte Beobachtung: Die Genese der modernen Krankenakte am Beispiel der Berliner und Pariser Medizin (1725–1830)', *Medizin Historisches Journal* 45.2 (2010) 298; also see: Berg and Harterink, 'Embodying'; Barbara L. Craig, 'Hospital Records and Record-Keeping, c. 1850–c.1950. Part 1: The Development of Records in Hospitals', *Archivaria* 29.4 (1989–1990); and Barbara L. Craig, 'Hospital Records and Record-Keeping, c. 1850–c.1950. Part 2: The Development of Record-Keeping in Hospitals', *Archivaria* 30.2 (1990).
- 13 Paul Broca, *Instructions générales pour les recherches anthropologiques à faire sur le vivant* (Paris, 1865).
- 14 G. von Neumayer (ed.), *Anleitung Zu Wissenschaftlichen Beobachtungen Auf Reisen: Mit Besonderer Rücksicht Auf Die Bedürfnisse Der Kaiserlichen Marine* (Berlin: 1875); in the first edition, Virchow wrote the part on physical anthropology. Later editions contained the instruction of Von Luschan. Neither of them provided pre-designed forms, just a list of questions.
- 15 See for the questionnaire: Rudolf Virchow, 'Anthropologie Und Prähistorische Forschungen,' in *Anleitung Zu Wissenschaftlichen Beobachtungen Auf Reisen: Mit Besonderer Rücksicht Auf Die Bedürfnisse Der Kaiserlichen Marine.*, ed. Georg Balthasar von Neumayer (Berlin: Oppenheimer, 1875), 585–90.
- 16 Felix von Luschan, 'Anthropologie, Ethnographie Und Urgeschichte,' in *Anleitung Zu Wissenschaftlichen Beobachtungen Auf Reisen in Einzel-Abhandlungen. Band II.*, ed. Georg Balthasar von Neumayer, Dritte Auf (Hannover: Max Jänecke, 1906), 1–123.
- 17 Amos Morris-Reich, 'Anthropology, Standardization and Measurement: Rudolf Martin and Anthropometric Photography,' *British Journal for the History of Science* 46, no. 3 (2013): 487–89, 491–94.

- 18 Rudolf Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für studierende Ärzte und Forschungsreisende* (Jena, 1914), 62.
- 19 Martin, *Lehrbuch*, 1; Robert Proctor, *Racial Hygiene: Medicine under the Nazis* (Cambridge, 1988) 147; Amos Morris-Reich, 'Anthropology, Standardization and Measurement: Rudolf Martin and Anthropometric Photography,' *JOUR, British Journal for the History of Science* 46, no. 3 (2013): 487–516.
- 20 For the expedition, see: D. A. P. van Duuren and Steven Vink, *Oceania at the Tropenmuseum*, BOOK (Amsterdam: KIT Publishers, 2011). For Van der Sande, see: Iris Clever and Willemijn Ruberg, 'Beyond Cultural History? The Material Turn, Praxiography, and Body History', *Humanities* 3 (2014), doi:10.3390/h3040546; Geertje Mak, 'Touch in Anthropometry'.
- 21 National Archives of The Netherlands, The Hague (NL-HaNA), Collection 384 Mr. H.A. Lorentz, 1905–1914, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 22 February 1906.
- 22 *Ibid.*, Letter from Van der Sande to Lorentz, Soerabaia, 11 June 1909.
- 23 Allan Sekula, 'The Body and the Archive', *October* 39.3 (1986); Simon A. Cole, *Suspect Identities: A History of Fingerprinting and Criminal Identification* (Cambridge, 2001), chapter 2 and 6, Kindle position 403–677, 1622–1966; Josh Ellenbogen, *Reasoned and Unreasoned Images: The Photography of Bertillon, Galton, and Marey* (University Park, 2012).
- 24 Sekula, 'The Body'; Cole, *Suspect Identities*.
- 25 NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 6639, 'Stukken betreffende het strafregister en de signalementkaarten, 1895–1912'. Also see: Alphonse Bertillon, *Handleiding voor den beambte belast met de toepassing der lichaamsmeting enz.* (Rotterdam, 1895).
- 26 Cyrille Fijnaut, *De geschiedenis van de Nederlandse Politie. Een staatsinstelling in de maalstroom van de geschiedenis* (Amsterdam, 2007) 283.
- 27 NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 2069, 'Verbaal van den 14 feb 1896 no 165. Rapport en Ontw. besluit tot instelling van anthro. signalement kaarten'.
- 28 Alphonse Bertillon, *Handleiding voor den beambte belast met de toepassing der lichaamsmeting enz.* (Rotterdam: [s.n.], 1895).
- 29 Jeroen Dekker, *Straffen, redden en opvoeden: Het ontstaan en de ontwikkeling van de residentieële heropvoeding in West-Europa, 1814–1914, met bijzondere aandacht voor 'Nederlandsch Mettray'* (Assen and Maastricht, 1985) 11–172.

- 30 *Staatsblad van het koninkrijk der Nederlanden* (209), Royal Decree, 15 June 1905.
- 31 Thom Willemse, 'Jan Klootsema (1867–1926), architect van de residentiële orthopedagogiek', in Roelof de Groot et al (eds), *Handboek orthopedagogiek* (Groningen, 1987) 5, 10.
- 32 Berg and Harterink, 'Embodying'.
- 33 Becker, 'The Standardized Gaze', 139–141.
- 34 NL-HaNA, Lorentz, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 22 February 1906.
- 35 Cole, *Suspect Identities*, Kindle position 554–556.
- 36 Broca, *Instructions*.
- 37 NL-HaNA, Lorentz, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 22 February 1906.
- 38 Cole, *Suspect Identities*, Kindle position 403–677; Fenneke Sysling, *Racial Science and Human Diversity in Colonial Indonesia* (Singapore, 2016) 73–85; Erhard Schüttpelz, "'Sie zu messen, war leider trotz aller Mühe, die ich mir gab, und trotz aller Geschenke unmöglich": Die anthropometrische Interpellation', in Gert Theile (ed), *Anthropometrie: Zur Vorgeschichte des Menschen nach Mass* (München, 2005).
- 39 Also see: Bernet, 'Eintragen', 68.
- 40 This is probably what Martin taught him, see: Martin, *Lehrbuch*, 62.
- 41 Julia Epstein, *Altered Conditions: Disease, Medicine, and Storytelling* (New York, 1995) 23–76.
- 42 This debate took place between P.F. Abbink Spaink, E.W. de Flines, M. van Wijhe Ezn., Hendrik Pierson, and Jan Klootsema, 'De persoonsbeschrijving', *Tijdschrift voor armenzorg en kinderbescherming* 9.372/375/376/387 (1908) 207–210, 230, 236–237, 243–248; for the assertions referenced above, see: De Flines, 237; Abbink Spaink, 245; Van Wijhe, 208, 210.
- 43 NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 6035, 5 January 1907 and 26 September 1907.
- 44 Martin, *Lehrbuch*, 61.
- 45 Lorraine Daston and Peter Galison, *Objectivity* (New York and Cambridge, 2007) 265–272.
- 46 *Ibid.*, 191–205; Mak, 'Touch in Anthropometry'.
- 47 Rudolf Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für Studierende Ärzte und Forschungsreisende*, BOOK (Jena: G. Fischer, 1914), 58–60.
- 48 *Ibid.*

- 49 Nélia. Dias, *La mesure des sens: les anthropologues et le corps humain au XIXe siècle*, BOOK (Paris: Aubier, 2004.) 165–169.
- 50 Martin., 132–183; Bertillon, *Handleiding*, appendix.
- 51 NL-HaNA, Lorentz, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 22 February 1906.
- 52 Martin, *Lehrbuch der Anthropologie in systematischer Darstellung mit besonderer Berücksichtigung der anthropologischen Methoden für Studierende Ärzte und Forschungsreisende.*, 61.
- 53 Martin, 108–109.
- 54 A pale complexion could be a sign of ‘cretinism’ – Jan Klootsema, *Misdeelde kinderen: Inleiding tot de paedagogische pathologie en therapie* (Groningen, 1904) 27–28 – while complexion could also have been related to health issues. Prostitutes and female criminals were thought to have darker hair than ‘normal’ women, according to criminal-anthropological thought: Cesare Lombroso and Guglielmo Ferrero, *Criminal Woman, the Prostitute, and the Normal Woman*, trans. by Nicole Hahn Rafter and Mary Gibson (Durham, 2004 [1893]) 123.
- 55 De Flines, ‘De persoonsbeschrijving’, 237; Van Wijhe, ‘De persoonsbeschrijving’, 210.
- 56 Ledebur, ‘Schreiben’, 107.
- 57 NL-HaNA, Lorentz, 2.21.183.51, file no. 8, Letter from Van der Sande to Lorentz, Amsterdam, 29 November 1906.
- 58 We have not been able to find the original source referring to this scale. For general info, see: https://en.wikipedia.org/wiki/Von_Luschan's_chromatic_scale (visited 05-02-2017).
- 59 Becker, ‘The Standardized Gaze’, 139–141; Bernet, ‘Eintragen’, 86.
- 60 Hessel Postma, *Experimenteel-psychologisch onderzoek naar de beteekenis van het geboortenummer* (Groningen, 1929); for the titles of these publications, see: Saskia Bultman, ‘Constructing a Female Delinquent Self: Assessing Pupils in the Dutch State Reform School for Girls, 1905–1975’, unpublished PhD dissertation, Radboud University Nijmegen, 2016, 399–400.
- 61 NL-HaNA, Von Römer, 2.21.143, file nos. 45, 46 and 66.
- 62 Daston and Galison, *Objectivity*, 216–234.
- 63 NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 6035.
- 64 NL-HaNA, Ministry of Justice (1876–1914), 2.09.05, file no. 6039, internal report, c. 1906.
- 65 Sekula, ‘The Body’, 19–30.

66 Ibid.

67 Fenneke Sysling, *Racial Science and Human Diversity in Colonial Indonesia* (Singapore, 2016).

68 In the 1908 debate, detractors labelled the examination the form prompted as ‘immoral’, particularly in cases in which girls were examined by male doctors, and voiced their suspicions that the form, with its anthropometric focus, would only be used to further scientific knowledge; see: Pierson, ‘De persoonsbeschrijving’, 230. In the 1930s, the form received criticism from psychologists, who considered the form’s anthropometric focus ‘outdated’: Jan-Wilm Delicat, *Van ijzeren vuist naar zachte hand? Idee en praktijk in de rijksopvoedingsgestichten, 1901–1961* (Enschede, 2001) 115, 161.

69 For a more elaborate explanation of why the form continued to be used in the reform school, despite its ostensible ‘failure’, see: Bultman, ‘Constructing a Female Delinquent Self’, 110–131.

70 For the relation between Klootsema’s theory and the form, see: Bultman, ‘Constructing a Female Delinquent Self’, 84–101.

71 Seliene Jeannette Meijers, *Rijksopvoedingsgestichten: Meer in het bijzonder dat voor meisjes en de resultaten daar verkregen* (Amsterdam, 1918) 23–24.

72 For a discussion of this disconnection, see: Bultman, ‘Constructing a Female Delinquent Self’, 108–110.

73 Sysling, *Racial Science*; Emmanuelle Sibeud, ‘A Useless Colonial Science? Practicing Anthropology in the French Colonial Empire, circa 1880–1960’, *Current Anthropology* 53.S5 (2012) doi:10.1086/662682.

74 This conclusion provides a counterweight to Simon Cole’s observation that Bertillonage functioned quite well in many countries.

About the Authors

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