

### Daily life in the Middle Ages - iconography of medieval art and the use of EDP

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## current research

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### DAILY LIFE IN THE MIDDLE AGES - ICONOGRAPHY OF

#### MEDIEVAL ART AND THE USE OF EDP

In the last few years efforts in computerized cataloguing and description of works of art have been made - and many of them successfully made - in a rapidly increasing number (1). A quick look over the aims of these projects shows, that particular interests have been taken in the documentation and cataloguing of large numbers of art history objects kept in museums and collections, with the intention to facilitate the access to them.

Especially, the 'physical' descriptions of the works of art (i.e. artist, title, techniques, date, inventory number, etc.) have been the subject of these documentations. To a relatively smaller extent attempts can be observed, which also or mainly take into account the detailed iconographical contents (2).

One project meant to simplify the documentation and analysis of pictorial sources is under process at the Institut für mittelalterliche Realienskunde Österreichs (Institute for the Research on Medieval Material Culture of Austria) of the Austrian Academy of Sciences. This institute investigates the daily life in medieval Austria, particularly for the period of the 14th and 15th centuries (3). It was founded in 1969 as a result of the very obvious lack of information historical research was confronted with in this field.

Besides preserved original objects and the wide scope of written sources especially Gothic pictures are the subject of investigation (4). A picture is supposed to instruct medieval man, above all the very numerous group of illiterates (5). Out of that didactic motive the portrayed religious situations, e. g. the life of Christ, the legend of a saint or Old Testamentary scenes, are transferred by the artist into the contemporary medieval milieu. Persons in the picture wear medieval costumes, interiors are equipped with contemporary furniture, towns may accord with the gothic reality. In that way the identification of the spectator with the painted representation is facilitated and the religious emotion may be increased. Therefore pictorial sources are not only a very important and indispensable mean for reconstruction the material culture and the daily life of the Middle Ages, but also for studying the mentality of medieval man (6).

The basis for the research is the photo-archive at the Institut für mittelalterliche Realienskunde. At the moment it keeps about 12000 photographs of medieval pictorial sources of Austrian provenance, a number, which will steadily increase in the future. Simple card-indexes, e.g. according to certain 'physical' categories or to the portrayed objects or persons, might have done the purpose in some cases to make the access to the pictures easier. But an effective, systematic research cannot be satisfied with a couple of more or less isolated information about single significances. On the contrary, only the various connections and relations between subjects, objects and situations, and their interpretation may lead to acceptable results. Therefore, it seemed rather unrealistic from

the beginning of the project to make extensive use of card-indexes, even if they had been very branched and/or connected. Thus, the decision to use EDP was made at a very early stage of the project. But until the actual start of computerized descriptions of pictures at the institute in 1978 quite a long way of considerations and practical tests had to be gone through. Especially the developing of an appropriate and practicable classification-scheme needed a lot of time and was the subject of rather frequent alterations and modifications.

Finally, a scheme could be established consisting of nineteen main categories, which are the basis for the descriptions. These descriptions consist of a 'physical' and an 'iconographical' part. The fact, that relations between portrayed subjects, objects, etc. are of particular interest, had to lead to a hierarchical structure of the category-system. The hierarchy results of the very simple situation, that e.g. in one scene a person wears a dress, which has a part, relevant for the investigations. The person depends on the scene, the dress on the person and the part of the dress on the dress. Out of those considerations a scheme (presented in Table 1) was developed.

In this scheme the mentioned hierarchy is illustrated by the indentations to the right. The hierarchical succession of the categories is obligatory for all descriptions. The main categories of the 'physical' description can only be used once for one picture; all the other categories concerning the iconographical contents are of course not subject to such restrictions and may be used as often as necessary. Multiple entries in one category are as possible as the non-use of main- or subcategories. In that way the system presents itself as a very open one and guarantees a freedom, which simply must be necessary for the descriptions of such a complex matter as medieval pictures are.

The descriptions are done in natural language. In the course of the development of the project it proved to be appropriate to assign one term to each described situation, subject object, etc., which lead to a standardized and obligatory vocabulary. Nevertheless, it appeared that the terminology used in the different fields of research on material culture and everyday life is a rather unstandardized one and the range of the subject evidently is a very wide one. Therefore ambiguities in the use of certain terms had to be excepted.

The above mentioned considerations and developments became the basis for DESCRIPTOR, a computer program for the analysis of descriptions of medieval pictorial sources, created by Manfred Thaller (now Max-Planck-Institut für Geschichte, Göttingen) in the years 1976 to 1978 (7).

The following example (Table 2) shows the way how the computer-readable descriptions of pictures are produced. It represents a

Table 1

'Physical' description:

NUMMER (N) number	N ('archive number', 'slide number', 'negative number')
GEGENSTAND (G) work of art	G ('type', 'format', 'artist', 'title', 'provenance')
DOKUMENT (D) documentation	D ('earliest date', 'latest date', 'place', 'province', 'institution')
COMMENTAR (C) commentary	C ('measurements', 'place of origin', 'inventory number', 'literature')

'Iconographical' description:

BILD (B) scene	B ('name', 'place of the scene')
SUBJEKT (S) subjekt	S ('sex', 'name', 'rank', 'gesture')
SUBJEKTEIL (T) part of subject	T ('name', 'colour', 'shape')
ATTRIBUT (A)	A ('name', 'colour', 'material', 'shape')
ATTRIBUTTEIL (I) part of attribute	I ('name', 'colour', 'material', 'shape')
ATTRIBUTTEILTEIL (U) part of p. of attribute	U ('name', 'colour', 'material', 'shape')
KLEIDUNG (K) piece of clothing	K ('name', 'colour', 'material', 'shape')
KLEIDTEIL (L) p. of piece of clothing	L ('name', 'colour', 'material', 'shape')
KLEIDTEILTEIL (M) p. of p. of piece of clothing	M ('name', 'colour', 'material', 'shape')
OBJEKT (O) object	O ('name', 'colour', 'material', 'shape')
OBJEKTTEIL (P) p. of object	P ('name', 'colour', 'material', 'shape')
OBJEKTTEILTEIL (Q) p. of p. of object	Q ('name', 'colour', 'material', 'shape')

Additional categories are RELATION (X), RELATIONTEIL - part of relation - (Y) and RELATIONTEILTEIL - p. of p. of relation - (Z), with their subcategories 'name', 'colour', 'material', 'shape'. They are used for objects being in relation to ATTRIBUT, KLEIDUNG, OBJEKT or their parts.

description of an Annunciation (1460/70), Vienna, church 'Maria am Gestade', Picture 1: (8)

N('001836', '7002652,7000209-7000212', '3005501,3001511-3001514')  
G('TAFELMALEREI', 'TAFEL EINES FLUEGELALTARS', 'MEISTER VON MARIA AM GESTADE',  
, 'VERKUENDIGUNG AN MARIA', 'WIEN')  
D(1460, 1470, 'WIEN', 'WIEN', 'MARIA AM GESTADE')  
C('2020X1610', 'WIEN, MARIA AM GESTADE')  
B('VERKUENDIGUNG; BETEN', 'INNENRAUM')  
S('E', 'GABRIEL', 'ZEIGE GESTUS')  
A('SPRUCHBAND')  
K('TASSEL MANTEL', 'ROT')  
L('KLEIDERFUTTER', 'GRUEN')  
L('FRANSE', 'GRUEN')  
L('AURIFRISIUM')  
M('EDELSTEIN')  
L('TASSEL', 'GOLD', 'VIERPASS')  
M('EDELSTEIN')  
K('ROCK', 'WEISS')  
S('F', 'HL. MARIA', 'KNIEND; BETEND')  
A('BUCH')  
K('ROCK', 'BLAU')  
K('TASSEL MANTEL', 'WEISS')  
L('TASSEL', 'GOLD')  
M('EDELSTEIN')  
O('ALMER', 'HOLZ')  
X('BECHERZOREI', 'ZINN')  
Y('KERZENLEUCHTER', 'MESSING')  
X('KANNE', 'ZINN')  
Y('DECKEL', 'ZINN')  
X('MAJOLIKASCHALE')  
X('ROSENKRANZ')  
X('SCHALE', 'MESSING', 'GEBUCKELT')  
X('POKAL', 'MESSING')  
P('ZINNE', 'HOLZ')  
X('WAPPEN')  
P('BLENDMASSWERK', 'HOLZ', 'GESCHNITZT')  
P('TUER')  
Q('SCHLOSSBESCHLAG', 'EISEN')  
O('SCHERENSTUHL', 'HOLZ')  
O('TRUHE', 'HOLZ')  
O('MAJOLIKAKRUG')  
X('MAIGLUECKCHEN')  
O('FENSTER')  
P('FENSTERBRETT', 'GRAU', 'STEIN')  
X('MAJOLIKAVASE')  
X('BLUME', 'ROT')  
Q('WANDBANK', 'BRAUN', 'HOLZ')  
X('POLSTERZWEI', 'ROT')  
P('LEHNE')  
Q('BLENDMASSWERK')

Starting with the possibilities DESCRIPTOR offers, particularly two types of data-retrieval are used (9):

1. The retrieval of certain single described situations, subjects, objects, etc. or their combinations.  
If you e.g. want information about portrayed people in pictures of the second half of the 15th century, who wear a 'Schaube' (a long cloak open in front, typical for persons filling an official position), the following DESCRIPTOR-commands are necessary:

```
QUAERO TERMINUS (DOKUMENT)=1450-1500,NAME(KLEIDUNG)=SCHAUBE  
SCRIBE TOTUM(SUBJEKT)
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They produce a printout (Table 3) consisting of the entire descriptions of the concerned SUBJECTS and the archive numbers of the corresponding photographs (10):

Table 3

O('M',,, 'KOENIG', '+')	IN 000024
O('M',,, 'RATSHERR', '+')	IN 000026
O('M', 'HERODES',,, '+')	IN 000028
O('M',,, '+')	IN 000028
O('G;M',,, 'REDEGESTUS')	IN 000032
O('M', 'GUANUS', 'FUERST HEIDNISCH', '+')	IN 000039
O('M', 'AETHERIUS', 'KOENIGSSOHN HEIDNISCH')	IN 000040
O('M',,, 'KOENIG VON BRITANNIEN;VATER DER HL.URSULA')	IN 000041
O('M', 'BERNHARD VON SEYBOLTSORF', 'STIFTER', 'KNIEND;BETEND')	IN 000132
O('M',,, '+')	IN 000130
O('M',,, '+')	IN 000088
O('M', 'CHLODWIG', 'KOENIG', '+')	IN 000090
O('M', 'CHLODWIG', 'KOENIG')	IN 000093
O('M',,, 'GELEHRTER')	IN 000134
O('M',,, 'KOENIG', '+')	IN 000042
O('M', 'AETHERIUS', 'KOENIGSSOHN', '+')	IN 000043
O('M',,, 'GELEHRTER;KETZER;ALBIGENSER(?)', 'REDEGESTUS')	IN 000046
O('M',,, 'RICHTER ROEMISCH')	IN 000047
O('M',,, 'PRIESTER JUEDISCH', 'ASSISTIEREND')	IN 000049
O('M', 'HERODES', 'KOENIG', 'REDEGESTUS')	IN 000054
O('M',,, 'STIFTER;FAMILIENOVERHAUPT', 'KNIEND;BETEND')	IN 000059
O('M',,, 'GELEHRTER')	IN 000061
O('M',,, 'AMTSPERSON')	IN 000061

Frequently, you are confronted with the necessity not to put questions about single objects, but groups of objects, e.g. furniture, underwear, flowers, etc. For that purpose, the possibility to put together a number of terms into one THESAURUS was developed. Information about women wearing jewellery may be received by creating the THESAURUS 'Schmuck'. The illustrating example (Table 4) shows the question and part of the

indicator for the position they fill in the social hierarchy of the Middle Ages. It also can show certain aspects of medieval fashion. Beyond that, the symbolic character, which is attributed to certain colours, may be the basis for investigations about the reality of daily life, pictures do or do not illustrate. Written sources prove e.g., that yellow as the negative colour is not used at all for dresses, except for the clothing of outlaws, jews, prostitutes, etc. Interpretations of pictures demonstrate a similar situation. Only negative characters (outlaws, enemies of the religion, torturers of martyrs) often wear yellow dresses. For all the other portrayed groups of persons, yellow as colour for their clothing is a rare exception. The mentioned DESCRIPTOR-counting routines confirmed that fact, when a test with 1000 descriptions of pictures had been carried out (12).

Written sources prove, that blue was one of the favourite colours for women's dress in the late Middle Ages. Due to its symbolic character in connection with Saint Mary (heaven, purity, truth, etc.), the question occurred, if that aspect (St. Mary almost ever wears at least one blue dress) had an effect on the colours of the clothing of other portrayed women. That means: Does the situation illustrated in the picture contradict to the testimony of Written sources? A test done with the descriptions of 500 pictures produced the following result:

Table 5

QUAERO SEX(SUBJEKT)=F,NAME(SUBJEKT)=NON HL.MARIA

NUMERUS NUMERI FARBE (KLEIDUNG)

FOLGENDE EINTRAGUNGEN SIND ZU VERZEICHNEN:

WEISS.....	461	MAL
ROT.....	264	MAL
GRUEN.....	149	MAL
BLAU.....	92	MAL
SCHWARZ.....	62	MAL
GOLD.....	53	MAL
BRAUN.....	26	MAL
GELB.....	24	MAL
VIOLETT.....	20	MAL
GRAU.....	12	MAL

The dominance of white is due to the veils almost every medieval woman wears. Concerning the other colours at least one statement can be made: The dominance of red and green in comparison to blue has a significance, which in no way can be proved by the testimony of written sources. Therefore the aspect of blue as a colour often reserved for St. Mary's dress must certainly be considered, when investigating the reality of clothing's colour in late pictures.

Another possibility for comparisons is given by the CONNECTIO-

printout consisting of BILDTHEMA (title of the picture), the description of the woman-SUBJEKTS and the archive number of the corresponding photographs:

QUAERO SEX (SUBJEKT)=F,NAME (KLEIDUNG)=THESAURUS (SCHMUCK)

THESAURUS (SCHMUCK) = KETTE VEL RING VEL BAND VEL AMULETT VEL TASSEL VEL DIADEM VEL SCHMUCK VEL SCHELLE VEL SCHLIESSE VEL AGRAFFE VEL ANHAENGER (11)

SCRIBE BILDTHEMA (GEGENSTAND),TOTUM (SUBJEKT)

HL.BARBARA.....	O('F','HL.BARBARA')	.....IN	000047
SCHUTZMANTELMADONNA.....	O('F','HL.MARIA')	.....IN	000061
VERKUENDIGUNG AN MARIA.....	O('F','HL.MARIA')	.....IN	000067
VERKUENDIGUNG AN MARIA.....	O('F','HL.MARIA','+')	.....IN	000071
DARBRINGUNG JESU IM TEMPEL...O('F','HL.MARIA','JESUS			
	HALTEND')	.....IN	000169
ANBETUNG DER KOENIGE.....	O('F','HL.MARIA')	.....IN	000183
DER HL.LEONHARD ALS GEBURTS			
HELFFER BEI KOENIGIN CHLOT			
HILDE.....	O('F')	.....IN	000190
KROENUNG MARIENS.....	O('F','HL.MARIA','BETEND;		
	SCHWEBEND')	.....IN	000074
GEBIRGSLANDSCHAFT MIT			
GEMSENJAGD.....	O('F','REITERIN%DAMENSITZ')	.....IN	000137
GEBIRGSLANDSCHAFT MIT			
GEMSENJAGD.....	O('F','MIT HUNDEN SPIE		
	LEND')	.....IN	000137
DARBRINGUNG JESU IM TEMPEL...O('F')		.....IN	000219
VERMAEHLUNG MARIENS.....	O('F','HL.MARIA','JUNGFRAU;		
	BRAUT','+')	.....IN	000076
HL.MARIA MAGDALENA.....	O('F','HL.MARIA MAGDALENA')	.....IN	000084
VERKUENDIGUNG AN MARIA.....	O('F','HL.MARIA','+')	.....IN	000231

Questions of this character not only guarantee a survey of the material important for further research, but also reduce the number of pictorial sources to be looked through to the necessary documents concerning the investigated problem(s).

2. The comparison of situations, subjects, objects, etc. and/or their combinations.  
To investigate significances in the portrayal of certain circumstances usually extensive comparisons of a large number of pictures are necessary. The use of DESCRIPTOR of course will not produce any definitive results, but again makes it possible to reduce the pictures to be interpreted to the relevant number. It also may lead to more precise and more essential further research. Such a possibility is offered by counting the terms certain categories contain and by getting the number of times they occur. An example may show the application.  
The colour of the dress persons wear often represents an in-



command. It produces printouts showing the connections of terms of certain categories. The connections of colours of dresses may be found out by the command:

Table 6

CONNECTIO FARBE(KLEIDUNG),NAME(SUBJEKT),STAND(SUBJEKT):

GOLD-BRAUN		HL.MARIA	IN 000304
GOLD-BUNT		HL.MARIA	IN 000310
GOLD-GRUEN			IN 000095
GOLD-GRUEN	MARKGRAEFIN	RICKHART	IN 000356
GOLD-GRUEN	PRIESTER JUEDISCH		IN 000308
GOLD-SCHWARZ		HL.ANNA	IN 000312
GOLD-SCHWARZ		HL.MARIA	IN 000314
GOLD-SCHWARZ		HL.MARIA	IN 000315
GOLD-SCHWARZ	ERZENGEL	GABRIEL	IN 000315
GOLD-SCHWARZ	PRAEFEKT ROM	VALERIAN	IN 000708
GOLD-SCHWARZ	PRAEFEKT ROM	VALERIAN	IN 000708
GOLD-SILBER	MARKGRAEFIN	SWANHILT	IN 000357

The presented part of the result shows the mentioned connections, in this case of the combinations of gold with another colour and the rank and/or name of the corresponding persons. This specific example might give information about the groups of portrayed persons, who wear extremely luxurious clothes, because those combinations of gold with another colour indicate dresses made of brocade or similar expensive materials.

At last another example may demonstrate the range of application for EDP-supported investigations of medieval material culture. The mentioned counting routines confirmed the hypothesis, that portrayed negative persons particularly wear very fashionable, that means, short and tight clothes. These clothes continually are condemned in diverse sumptuary laws, in sermons and in certain poetical works. Thus, negative persons in the picture wear contemporary 'negative' pieces of clothing, often intensified by extreme colours (yellow, many-coloured) and/or exaggerated shape, cfr. Picture 2. In men's dress especially 'Wams' (doublet), 'Schecke' (doublet with short skirt) and 'Beinling' (hose) are the terms, which represent those 'negative' clothes. The itself suggesting investigation which non-negative persons in the pictures wear such pieces of clothing (13), shows that high-rank personages (monarchs, members of the nobility etc., see Picture 3), their servants and working artisans are the mainly concerned groups. Only shape and colour of their dresses do not show such extremities, as can be proved for negative persons. Again these answers do not mean definitive results; they show possibilities for further systematic and more detailed studies. Above all, questions may be arising like this: Does the fact, that the nobility usually is out of reach of sumptuary laws (14), give reasons for the indicated situation? Do artisans considerably influence medieval fashion and its development?

Are there more or less exact limits of accepted fashionable

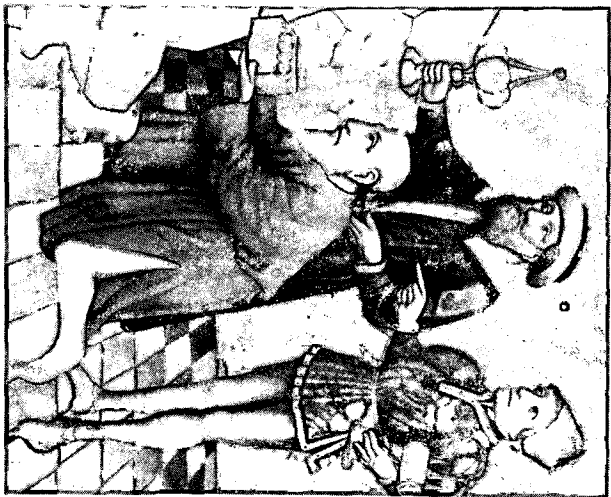
clothing to be seen in the pictures?

EDP-supported investigations of medieval pictorial sources certainly need not concentrate on problems of clothing, as it was done in this paper. A very wide range of other studies with regard to daily life and material culture of the Middle Ages also has to make use of contemporary pictures. The presented methods are supposed to reduce the relevant number of material and to accelerate research (15). They of course never will replace the picture in any way. On the contrary, they rather may intensify thorough interpretation and diminish one function of pictures still to be found very often in today's historical research: the mere illustration.

Picture 1: Meister von Maria am Gestade, Annunciation, panel painting, 1460/70, Vienna, church 'Maria am Gestade'



Picture 3: Fashionable clothing of persons of high rank: the magus on the right wears 'Beinling' and 'Schecke'.  
Meister des Fastentuches, Adoration of the Magi, panel painting (detail), 1460/70, St. Lambrecht, Styria, gallery of the monastery.



Picture 2: 'Negative' clothing of negative persons.  
The Flagellation, fresco, 1485, Swabian, St. Stephan in Obermontani, South Tyrol

FOOTNOTES

- 1 See First International Conference on Automatic Processing of Art History Data and Documents. Pisa, 4-7 September 1978. Conference Transactions I & II. Pisa 1978; Horst-Johannes Tümmers, Anwendungsmöglichkeiten der elektronischen Datenverarbeitung in der Kunstwissenschaft. Festschrift für Heinz Ladendorf (Köln-Wien 1970) 184-196.
- 2 See, e.g., L.D. Couprie, Constructing and editing an alphabetical index to the iconographic classification system Iconclass with the aid of electronic data-processing. And a few ideas for future application of the stored data. First International Conference II, 151-181; Francois Garnier, Constitution et exploitation iconographique du Corpus des enluminures des Bibliothèques Publiques de France. Ibid. 183-201; Thomas H. Ohlgren, The Bodleian Project: Computer Cataloging and Indexing Medieval Illuminated Manuscripts and Early-Printed Books. Ibid. I, paper XV; Rolf Meierhans, Classico. Ibid., paper XVII.
- 3 See Harry Kühnel, Realienkunde des Mittelalters und der frühen Neuzeit. Versuch einer Darstellung - Erfordernis der Gegenwart. Jahrbuch für Landeskunde von Niederösterreich NF XXXVII, 1965-1967 = Festschrift für Karl Lechner (Wien 1967) 215-247; Kühnel, Aufgaben und Probleme der Realienkunde des Spätmittelalters. Bericht über den dreizehnten österreichischen Historikertag 1976 (Veröffentlichungen des Verbandes österreichischer Geschichtsvereine 21) 1977, 52-57; Kühnel, Ziele der Erforschung der Sachkultur des Mittelalters. Rotterdam Papers IV (in the press).
- 4 See Kühnel, Die Wirklichkeit und ihr Abbild in der Kunst des Spätmittelalters. Gotische Kunstwerke als Bilddokumente. Exhibition catalogue Alltag und Fest im Mittelalter (Wien 1969) 37-47; Elisabeth Vavra, Kunstwerke als Quellenmaterial der Sachkulturforschung. Europäische Sachkultur des Mittelalters (Veröffentlichungen des Instituts für mittelalterliche Realienkunde Österreichs 4 = Sitzungsberichte der Österr. Akademie d. Wissenschaften, phil.-hist. Kl. 374) Wien 1980, 195-232.
- 5 See Michael Baxandall, Painting and Experience in Fifteenth Century Italy: A Primer in the Social History of Pictorial Style. London-New York 1972, passim; Gerhard Jaritz, Zur Funktion des religiösen Bildes in der spätmittelalterlichen Gesellschaft. Beiträge zur historischen Sozialkunde 10 (Salzburg 1980) 8-13; Kühnel, Abbild und Sinnbild in der Malerei des Spätmittelalters. Europäische Sachkultur 83-100; Vavra, Kunstwerke 196-206.
- 6 Cf. Iconographie et histoire des mentalités. Paris 1979: a collection of 22 short papers, of which only a few deal with the Middle Ages.

- 7 DESCRIPTOR is a system of several SNOBOL-4-programs supported by COBOL-components. At the moment it is installed at the CYBER 70 of the Technical University of Vienna. See Manfred Thaller, DESCRIPTOR 1.2. Ein Programm zur Dokumentation und Analyse mittelalterlicher Bildquellen. Krems 1979 (typewritten manuscript); Thaller, DESCRIPTOR. Probleme der Entwicklung eines Programmsystems zur computerunterstützten Auswertung mittelalterlicher Bildquellen. Europäische Sachkultur 167-194.
- 8 The description contains the following standardized abbreviations: E = angel; F = female. The symbol %, which may be used after each term in all categories, announces a 'verbal subcategory'. After the symbol certain informations or explanations concerning the preceding term can be given. They are printed, but do not have any effect on the data-retrieval.
- 9 See Thaller, DESCRIPTOR 183-190. Cf. the remarks by Babra, Kunstwerke 221-232.
- 10 The example contains the following standardized abbreviations: M = male; G = group. + means a gesture, which is not clearly definable.
- 11 The THESAURUS consists of terms, which accord with the contents of the descriptions used for this test-investigation.
- 12 See Vavra, Kunstwerke 230 f.
- 13 Ibid. 228 f.
- 14 See Liselotte Constanze Eisenbart, Kleiderordnungen der deutschen Städte zwischen 1350 und 1700 (Göttinger Bausteine zur Geschichtswissenschaft 23) Göttingen-Berlin-Frankfurt 1962,54.
- 15 First tests using CLIO for the descriptions of pictures and the statistical analysis of their contents proved very successful. They showed the way to be gone in the future, which will increase the presented possibilities to a large extent. Cf. Thaller, Automation on Parnassus. CLIO - A Databank Oriented System for Historians. Historical Social Research 15 (Köln 1980) 40-65.

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