

Quantifiability in Iconography

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It has rarely been seen as a task for art history to give systematic, consistent and detailed access to the subject matter of large numbers of historical images. This lack of systematic documentation severely handicaps all historical research that involves the interpretation of iconographic detail. It leaves us unable to count the frequency with which subjects have been represented, or with which iconographic particularities occur. This article asks whether the use of the iconographic classification system ICONCLASS will help to create countable iconographic information. Its first part deals with the considerations that have guided the shape of the computer edition that has recently been made available. These may be relevant for the electronic publication of classification systems in general. In the second part a few statements about gestures are analyzed against the background of an existing corpus of systematically described images. This analysis draws attention to the paradox that iconographic detail often plays a key role in art historical discourse, but must do so on the basis of incidental information.

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1. Introduction

In his book of collected essays, *L'imaginaire médiéval* (1), Jacques Le Goff says that at present individual and collective research efforts are transforming iconography into a scientific, intellectual and truly historical endeavour¹. The creation of "image libraries" and the access to informatics introduce the benefits of the quantitative into the field of the image, with which it seems to agree very well.

In this article I shall not try to assess Le Goff's very general statement about the transformation of iconography into an historical enterprise, however surprising this may be to those who thought it already was. What I shall do, is to annotate his assertion that the creation of 'image corpora' and the use of computers introduce the benefits of the quantitative to the study of imagery.

Obviously, the mere gathering of images and the purchase of a computer do not suffice to bring about the scientific progress Le Goff observes. So, my annotations will deal with steps that have to be taken to ensure the countability of the iconographic information we provide when giving subject access to an image collection. Since there is not much point in counting inconsistent and unsystematic data, they will be concerned primarily with the creation of consistent and systematic iconographic

information. At the centre of my attention will be an expedient designed to help us with that: the iconographic classification system ICONCLASS. I shall focus in particular on the considerations that have shaped the computer edition of this system, published by the ICONCLASS Research & Development Group in 1991.

I agree with Le Goff that a source consisting of systematically indexed images would still await historical explanation. The theoretical claims of an 'image library' are modest: to make images available as an object for study, not to explain them historically.

2. The Subject Access to Images

The problem of ordering books by subject is a topic in all curricula of library science. In contrast to that, hardly any art historical curriculum offers a course in dealing with the problems of ordering collections of images by subject. Courses in iconography generally concentrate on the individual work of art, which may be understood to include coherent series of single images, e.g. the wall-paintings of a chapel or the illuminations of a manuscript.

With art historical teaching and research by and large ignoring the problems involved in providing systematic iconographic information about large quantities of images, it is hardly surprising that few image collections do indeed offer that type of information. Small wonder too, that iconographic classification theory is in its infancy.

2.1 ICONCLASS

Curiously enough we do possess a sophisticated classification system for iconography. The schedules of this system, that has been baptized 'ICONCLASS' (2) presently contain some 24,000 concepts. Its alphabetic index provides circa 50,000 keyword references to the schedules. The accompanying bibliography contains some 40,000 references to works on iconography and cultural history.

A detailed description of ICONCLASS is given in another contribution to this issue; to repeat that here, would be superfluous, as would be any general comment on systematic classification. Instead, I shall restrict myself to discussing some of the peculiarities of 'ICONCLASS' content and to reviewing a few of its idiosyncracies that may interest the classificationist in the reader.

The schedules of ICONCLASS² were constructed on the basis of several decades of iconographic research by Henri van de Waal, his staff and students. The themes and

subjects they identified in Western art, were organized in nine basic classes:

- 1 Religion and Magic
- 2 Nature
- 3 Human Being, Man in General
- 4 Society, Civilization and Culture
- 5 Abstract Ideas and Concepts
- 6 History
- 7 Bible
- 8 Literature
- 9 Classical Mythology and Ancient History

Intermediate links were added to complete the hierarchical chains, cross references established, and occasionally subjects which one could well expect to have been represented, were included too. Therefore the scheme mixes abstracted descriptions of pictorial subject matter known to exist in reality, with descriptions of subjects likely to exist, but not found during the original research phase. The notation used is alphanumeric; one digit is added for every level in the hierarchy³. The third level is always expressed by a letter, which broadens the notational base.

2.1.1 The Duality of ICONCLASS

Van de Waal never ceased to emphasize that the first five classes, containing what he called 'general subjects', constitute a system "closed in itself, offering a place to 'every picturable subject and activity on earth'"⁴. At the same time he wanted "to provide some simple means of maintaining in the system the traditional coherence of themes" particularly from biblical, classical, and literary sources. These 'simple means' have eventually developed into the last four classes, or subdivisions, of 'specific subjects', as van de Waal called them. Together these comprise more than 10,000 index terms.

To grasp the implications of the system's basic duality, one should compare the following subjects, selected from divisions 4 and 9:

46C1491 bolting draught-animals

and

95A(HIPPOLYTUS)68 death of Hippolytus: he is killed when the horses that draw his chariot bolt at the sight of a bull-shaped monster

The first concept is intended to be generally applicable to all depictions of bolting draught-animals. Since Hippolytus was killed because his bolting horses dragged him along a rocky shore, this concept could, theoretically, be used as one of the descriptors for representations of that specific subject too. Evidently, it would then have to be combined with other concepts to cover other elements of the story, such as the violent nature of Hippolytus's death, the bull-shaped monster, the panic of his horses, and the fact that Hippolytus is a hero from Greek mythology.

Most of these aspects are adequately covered by concepts from the first five subdivisions of ICONCLASS, e.g.:

31E236 violent death by mutilation or maiming
25FF24 fabulous animals, hoofed animals
56DD33 Confusion, Bewilderment, Panic; 'Perturbatione' (Ripa)

In this first part of the system, however, we shall look in vain for the one concept that allows us to express the distinction between the 'historical' accident and the 'generic' accident, i.e. that it happened to the legendary hero Hippolytus. For that we have to look among the subjects from classical mythology and ancient history in subdivision 9.

9 Classical Mythology and Ancient History

95 the Greek heroic legends (II)

95A the Greek heroic legends (II): heroes

95A(...) the Greek heroic legends (II): heroes (with NAME)

95A(HIPPOLYTUS) (story of) Hippolytus

95A(HIPPOLYTUS)6 suffering, misfortune of Hippolytus

95A(HIPPOLYTUS)68 death of Hippolytus: he is killed when the horses that draw his chariot bolt at the sight of a bull-shaped monster

2.1.2 Flexibility

Although duality is a fundamental characteristic of ICONCLASS, possibly even more typical of the system is the close range at which its schedules follow actual iconographic variation and richness. The ensuing flexibility causes even this fundamental duality to apply not too rigidly. As a consequence, for example, non-biblical Christian narrative - mainly hagiography - was included in subdivision 1. To illustrate this I cite the chain of concepts that ends with the equally painful death of Hippolytus's namesake saint Hippolytus.

1 Religion and Magic

11 Christian religion

11H saints

11H(...) male saints (with NAME)

11H(HIPPOLYTUS) the soldier, martyr and gaoler Hippolytus; possible attributes: hackle, key, rope

11H(HIPPOLYTUS)6 martyrdom, suffering, misfortune, death of St. Hippolytus

11H(HIPPOLYTUS)62 St. Hippolytus is tied to the tails of wild horses and dragged to death, or torn apart

Both this chain and the previous one illustrate one of the two basic strategies by which ICONCLASS preserves the thematic coherence of narrative sources. Its index vocabulary 'simply' incorporates elaborate, abstracted descriptions as single - highly compound - terms. These terms, if several lines of prose may be called a 'term', can be subordinated to the protagonist of a story, as illustrated by our two examples. These protagonists, Christian saints, mythical heroes, etc., may be listed alphabetically. Yet as a group they are subordinated to a single generic concept which assigns them their systematic place.

The second strategy is to arrange those compound, descriptive terms truly systematically. In that case the classification follows the thread of a story, without alphabetical 'interruption'. One example - a classical case of 'dragging' - should be enough to clarify this:

9 Classical Mythology and Ancient History
 94 the Greek heroic legends (I)
 94G the tenth year of the Trojan war (part II): Achilles back to war; his last deeds and his death
 94G2 Achilles sweeps the battle-field; the gods descend from Olympus to partake in the battle (Iliad XX-XXII)
 94G23 Hector's last fight and death
 94G235 Hector's body, tied to Achilles' chariot, is dragged around the city

The inclusion of descriptions as discrete index terms is an effective instrument of indexing economy: thus a very complex subject can be codified with a single notation.

2.1.3 Hybridity

For a number of reasons we may call ICONCLASS a hybrid classification system. The examples I have given so far suffice to demonstrate that parts of the schedules are strongly enumerative. However, the user of ICONCLASS is invited to string together as many notations as he finds necessary to index an image⁶. Thereby an element of synthesis is introduced on the level of the system's application.

At the same time, ICONCLASS offers a few intrinsically auxiliaries with which a user may create his own concepts. We have already seen the most obvious one: the open set of brackets '(...)' indicating that at that point in a chain verbal extension may be used to further specify a given concept.

- Key numbers

The first of two rather more idiosyncratic expedients are the so-called key numbers or keys. This device can be defined as an 'add-on' secondary hierarchy which may be used to increase the specificity of the concept for which it is declared valid. A key number is added between brackets at the end of a regular notation, and identified by a plus + sign: 31A25161(+9111). The verbal explanations of the separate parts of this notation are:

31A25161 arm or hand held in front of the chest and
 (+9111) expressing one's gratitude

A list of key numbers is declared valid at a particular location in the schedules. Its applicability is inherited by, but also limited to the rest of that particular chain. The set from which I took the cited example contains about a 100 concepts, in their turn divided into 9 classes:

- (+1) front view
- (+2) back view
- (+3) sideview, profile
- (+4) three-quarter view
- (+5) positions (of the human figure)
- (+6) direction of movements
- (+7) number of persons
- (+8) sex and age (of human being)
- (+9) expressive connotations

It is made available for section

31A the (nude) human figure; 'Corpo humano' (Ripa)

in the main class

3 Human Being, Man in General

The section 31A contains more than 400 concepts, any of which may be combined with any of the 100 concepts of the secondary key list. Presently the system offers circa 40 different lists of key numbers. Some of these are applicable to a few concepts, some are applicable to a few thousand concepts in the main schedules. That enumeration could never cover the potential combinatory explosion does not need further explanation.

- Structural digits

The second tool designed to allow the construction of new concepts through synthesis is called structural digit. Like the sets of key numbers, sets of structural digits are add-on secondary hierarchies. They too are made available at particular points of the main schedules. At the point where a structural digit becomes available, the further development of the chain is in fact a further development of the structural digit.

The essential function of structural digits is to ensure the uniform subdivision of a particular section of the system. This is particularly relevant at places where alphabetic listing takes over from systematic classification, as in section 11H saints. The codification of recurring ("structural") elements of saints' lives, e.g. miracles or martyrdom is always done with the same ("structural") digit. For example:

11H(...)5 miraculous activities and events « male saint

11H(...)6 martyrdom, suffering, misfortune, death of male saint

With every martyrdom scene sharing the basic notation 11H and the structural digit 6, retrieval of the general theme "martyrdom of male saints" becomes very easy, even though the basic organization of martyrdom scenes is by subordination to particular saints' names.

A set of structural digits is also the potential source of a combinatory explosion. At some locations, such as 11H, all three tools for synthesis are simultaneously available to the user. Against the background of this opportunity to create extremely specific descriptors, it may not be superfluous to emphasize that the user of ICONCLASS decides whether or not to use the tools offered to him.

3. The Computerization of ICONCLASS

I now turn to a second tool that may help us to create more consistent and systematic subject access to images: the computer. I shall refrain from discussing the use of computers in (art) history in any general sense⁷. Instead I shall limit my analysis to some of the implications of applying a computerized classification system. To a certain extent this analysis may be called a case study, as it is based on experiences gained by the transformation of the ICONCLASS system from a static 'paper system' to a computerized 'browser'⁸.

3.1 A network of relations

The precise meaning of a concept in a systematic classification scheme is established by its location, i.e. by its position in a chain and by the concepts that share its array. Being a link in a hierarchical chain, it moreover inherits the meaning of all the concepts it is subordinated to.

To find a concept we may of course browse the schedules, but it is more likely that we shall try to find it with the help of the alphabetic index to the scheme. If the system is of some sophistication, we shall be guided through this index by cross references, that link related terms and direct us from non-preferred to preferred terms⁹.

In ICONCLASS, the keyword(s) that lead us to a concept are a reflection of both that particular concept's content and of its hierarchical position within a particular chain. The latter means that a keyword assigned to a concept on a certain hierarchical level will not be repeated at lower levels of the same chain¹⁰. To illustrate this, I repeat one of the chains I cited earlier; this time, however, I add - in the third column - the keywords under which the concepts appear in the alphabetic index.

9	Classical Mythology and Ancient History	mythology ancient history history classical antiquity religion Greek mythology Roman mythology
95	the Greek heroic legends (II)	legend Greek legend
95A	the Greek heroic legends (II): heroes	hero
95A(...)	the Greek heroic legends (II): heroes (with NAME)	...
95A(HIPPOLYTUS)	(story of) Hippolytus	Hippolytus
95A(...) ⁶	suffering, misfortune	suffering, misfortune
95A(HIPPOLYTUS) ⁶	suffering, misfortune of Hippolytus	...
95A(...) ⁶⁸	death	death
95A(HIPPOLYTUS) ⁶⁸	death of Hippolytus: he is killed when the horses that draw his chariot bolt at the sight of a bull-shaped monster	accident horse, bolting chariot bull monster

Many of the keywords in the right hand column are cross referred for related terms. For example: 'suffering' for 'sorrow'; 'chariot' for a.o. 'apotheosis', 'quadriga', and 'triumph'; 'monster' for 'beast', 'devil', and 'dragon'; etc.

The concepts may themselves be directly cross-linked too. For example, from the notation:

95A(HIPPOLYTUS) (story of Hippolytus)
cited above, we are cross referred to the related 'term':
95B(PHAEDRA)²¹ Phaedra's unsuccessful love-affair with her stepson Hippolytus.

Summarizing, we may call ICONCLASS a complex network on the basis of the following characteristics:

- its concepts are arranged systematically

- its keywords are distributed hierarchically
- keywords may be cross-linked
- concepts may be cross-linked
- its secondary hierarchies are made available only for precisely defined sections of the main schedules
- the secondary hierarchies have their own keywords.

3.2 Publishing principles

As is common to classification systems, a notation in ICONCLASS is a symbolic translation of a concept, which itself is defined in natural language. It is also an indicator of the relative location of that concept, implicitly containing information about its relationship to other concepts, e.g. those in the secondary hierarchies.

Characteristic for the use we make of a classification scheme during indexing, is that we copy from it. We locate the concepts which we consider appropriate descriptors, helped by the way they are arranged and by cross references. We then copy them into the catalogue entry or database record that we are composing about an object. Typically, we restrict ourselves to copying just the notations. In the act, we isolate them from their context.

It is during retrieval that this isolation causes problems. Notations hide information like a barcode. To reveal their meaning and their connections we have to place them back in their context. Since a notation by its very nature assigns a unique location to a concept, in an abstract sense this does not present a problem. In practice, however, we are faced with a number of difficulties. Most fundamental of these is that the ultimate user of a catalogue should have the same network at his disposal during subject retrieval as the indexer has during subject indexing. To name but the most important reasons for this requirement:

- A notation is not self-explanatory: therefore we should be able to immediately retrieve the corresponding verbal explanation.
- The end user needs to be informed about the full hierarchical chain of a concept - all broader terms - to understand its semantics.
- The end user must have access to the same keywords that directed the indexer to a particular concept.
- The end user should have the guidance of the original cross references, because these may have guided the indexer too.

Now, how can this requirement be met? If a classification system merely exists in the form of a book, the answer is rather simple, since it will amount to an advice to the end user to get himself a copy. In the case of a computerized system, an exhaustive answer to that question would have to include a detailed discussion of technical issues. Having actually been used as the subject retrieval tool of an art historical database¹¹, the computerized ICONCLASS system would be a suitable focus for such a discussion.

For our present purpose, however, we better attempt to get a somewhat more theoretical perspective on the matter. I propose to do this by confronting different strategies for electronic publication to which a classification system such as ICONCLASS may be subjected.

In ICONCLASS - again, as in other classification systems - we may distinguish a static and a dynamic component. The concepts, consisting of notations and verbal explanations, together with the keywords, are the static component. The dynamic component is built of all relationships between the members of this triad, e.g. the mutual subordination or juxtaposition of the concepts, the links between notations and verbal explanations, between keywords and concepts, and between main and secondary hierarchies, and to all types of cross references.

A system that is published as a book of course conveys information about its own dynamics. It does so in two ways: by the physical arrangement of its concepts on the printed pages, and by explicit instructions to the user. However, eventually the user himself has to supply the dynamics: to see a hierarchical chain, he has to browse back and forth through the pages; to follow a cross reference, he has to go from one page to another; after consulting the alphabetic index he has to turn to the schedules to see the context of the concept he is referred to.

A computer file does not show itself in a self-evident order in the way a printed book does. It always needs additional software - a 'program' - to function, to be made visible even. This holds for straightforward text files, with no intrinsic order except that of words following one another. It holds all the more strongly for a pre-coordinated system with internal relations as manifold and complex as ICONCLASS.

Of course the contents of a system may simply be published without any information at all about the system's dynamics. That is, all concepts and keywords can be offered to users in a 'flat', completely undifferentiated listing. Thus it may be left to the users to fit them into a network according to their own ideas. In the case of a classification system, that would amount to a denial of its own 'raison d'être', i.e. the conviction that a standardized medium for the conveyance of information benefits scholarship.

So we concluded that this first possibility would be contrary to the aim of ICONCLASS and we were left with two options:

1. To publish the static data in the neutral form of an ASCII file, and supply a separate document, exhaustively describing the system's 'latent' dynamics. This description should provide users with all information necessary to process the published file in such a way that all latent dynamics could be made manifest. This would inevitably mean editing and encoding (parsing, flagging) the file to create all required retrieval possibilities. All of that effort, moreover, would be spent on reinventing the wheel.

At the same time, this adaptation of the ASCII file to

local hard- and software conditions could not be allowed to result in divergent functionalities, i.e. in 'de facto' different versions of ICONCLASS as an organic, coherent system. Again, that would deny the idea of a standardized information medium.

2. To publish an ICONCLASS data file consisting of both the static and the dynamic component. The dynamics would not be latent, but brought to life by a computer program. This program would then have to be equipped with all necessary 'knowledge' of ICONCLASS to act as an interpreter between the system and the outside world.

It should be able to digest two types of input: keywords and notations. In the case of keyword input it should retrieve all concepts linked to that keyword. In the case of notation input it should be able to interpret all of the notation's constituent elements, including those taken from secondary hierarchies, and moreover retrieve all verbal explanations linked to that notation. A smooth transition from alphabetic index to schedules should be provided for, and concepts should be shown in chain and in array, depending on the user's wish. The program should also be able to automatically warn the user about the availability of all auxiliary features and cross references; and in the case of cross references immediately transfer the user - if he so wishes - to the designated location.

On top of that it should be designed as a server program, independent of existing database software. It should also be able to communicate with external database management systems, i.e. to function as the engine of both a data input and a data retrieval module.

The complexity of ICONCLASS' internal rules and correlations would allow only a very small number of institutions to create their own computerized ICONCLASS system. It will not come as a surprise then, that it has indeed been published in the form of a so-called Server: a datafile and a dedicated computer program, combined into an organic, autonomous whole. In this way we hope to distribute the computer edition of ICONCLASS without disseminating the considerable problems connected to its computerization.

4. Systematic Documentation in Iconography

With this concise explanation of ICONCLASS and of the arguments for the way it is now offered to the scholarly community, I have 'zoomed in' on ICONCLASS in as much detail as I intended to. I shall now step back to broaden the horizon.

Ultimately we are interested in determining the impact that using an iconographic classification system may have on the countability of iconographic information. Analyzing that impact, we must ask whether and how such a system - being the medium for the verbalization and organization of iconographic observations - contributes to the consistency of the things we say about images and of how we say them.

My treatment of these questions will have to remain

preliminary and tentative. Anything more ambitious would involve a detailed evaluation of a number of large art-historical databases created in the past decade. That would be far beyond the scope of this article.

4.1 Standardizing the Medium

Discussing these issues I shall ignore the minor differences between the existing computer implementations of ICONCLASS. Taking those into account would unnecessarily complicate my analysis. Moreover, the following considerations lead me to believe that the computerized edition of ICONCLASS as published by the IRDG will in fact be accepted as its standard form.

- Now that ICONCLASS is available electronically, it has become very easy to incorporate modifications and expansions, suggested by users, into the system. It may still be a strenuous process, intellectually, to define new concepts and to find them an adequate location, but technically it does not present a problem. Since without the community's acceptance there will be no standard, increasing the ease with which its suggestions can be included, is an important step forward.

- Because updating the system is technically easy it can be done relatively cheaply. More importantly, corrections and expansions do not have to be distributed as separate appendices. They can be immediately integrated in the existing system. Replacing an earlier edition is done by simply overwriting an old file.

- The Server form in which the system is made available, makes it unnecessary to load the data into a local database management system. ICONCLASS acts as a separate, yet linkable unit and this autonomy guarantees the integrity of the data.

- Equally, the Server form guarantees uniformity of the system's functionalities.

4.2 An Example: The Documentation of Gestures

The question whether utilizing a classification system will help to produce quantifiable information by enhancing the consistency of what we say about images, can be approached from many different angles. I shall try to illustrate a few aspects with the help of examples taken from publications that study gestures in medieval imagery.

These examples will hopefully shed some light on the importance of iconographic detail for historical and art-historical discourse, testifying to the need for systematic documentation. At the same time they will show that researchers are handicapped because of their dependence on monographic studies. Only there do they find the detailed iconographic information they need; rarely, however, made available in a systematic way.

In a recent study J.-C. Schmitt argues that in the Middle Ages gestures - in the broad sense of the postures and

movements of the body - not only were very important in social relations, but were indeed perceived as such and could be made the object of political, historical, ethical and even theological study (8).

This assertion is relevant to the present discussion because the evidence it is based upon, is twofold: texts mentioning and describing gestures, and images representing gestures or, more accurately, images showing 'frozen' movements of the body, suggesting gestures.

In his study Schmitt emphasizes that the images are an historical source in their own right. Their interpretation is not made subservient to that of texts. They are, naturally, not interpreted as snapshots of medieval reality, but as serving a particular purpose, communicating messages, and obeying to certain representational rules. In short: they are seen as playing a role in a particular historical context.

Schmitt also points to a number of problems of documentation that confront an investigation like his:

- The potentially relevant visual source material is inexhaustible: "c'est la quasi-totalité de l'art chrétien qu'il faudrait prendre en compte ..." ¹²

- At the same time, the number of images that have been described systematically in sufficient detail, is extremely small. As a matter of fact, descriptions that are detailed enough are almost exclusively found in monographic studies.

Researchers lack systematic iconographic information, because the monographic studies they depend on, generally weave iconographic observations into the fabric of their arguments. The idea of systematically presenting them as discrete nuclei of information is alien to this type of study. But even books that aim at offering detailed iconographic information, do not but very rarely attempt to make all of the visual elements they mention accessible in a systematic way.

Paradoxically enough, the scarcity of subject indices and especially their almost absolute silence on iconographic details such as gestures, are commonly accepted as a fact of scholarly life. This acceptance is so widespread that the contradiction between the importance of iconographic detail for (art)historical reasoning and the absence of its systematic documentation is rarely commented upon.

4.3 Counting crossed arms

Some of the implications of this absence may be demonstrated with the help of a small experiment. I confronted a few assertions about gestures in medieval imagery with my own database of the circa 500 prefatory miniatures (and drawings) in English psalters produced between 1045 and 1225. The systematic iconographic description of the more than 1,200 scenes these miniatures contain, was undertaken with the help of ICONCLASS ¹³.

The first assertion says that "the attitude of hands crossed on the breast was not known in early medieval

art" and that "it was only in the late thirteenth century that this gestural motif entered European imagery. Its centre was originally Italy." (9)

From my manuscript corpus I could immediately retrieve a dozen instances of this gesture, found in contexts ranging from the killing of Abel (Abel) to the creation of Eve (Eve), and from the supper of Emmaus (a disciple) to the sacrifice of Isaac (Isaac).

The confidence with which such a statement is made, may surprise us. The ease with which it can be refuted, should not, because that is wholly consistent with the researcher's dependence on incidental rather than systematic information. The mere fact that even a modest primary source can yield such sobering results, is encouraging to the indexer. It suggests that by systematically recording iconographic detail a useful critical tool can be produced.

Yet, this result only begins to answer the question whether using ICONCLASS helps to produce countable iconographic data. To allow the reader to assess that more fully, I should put the count of the gesture of 'crossing the arms in front of the chest' into perspective. I.e. the user should be informed how the count was performed and how it compares to counts for other gestures.

It will not surprise readers of this journal that it is precisely the systematic classification's principle of assigning codes to concepts that allows for easy counting. I trust that the following chain of concepts will immediately clarify why it is so easy to count occurrences of particular gestures, once they are codified with the help of notations. (The result of the count for the last four concepts in the chain is printed in square brackets.)

3 Human Being, Man in General

31 man in a general biological sense

31A the (nude) human figure; 'Corpo humano' (Ripa)

31A2 anatomy (non-medical)

31A25 postures and gestures of arms and hands [2422]

31A252 postures and gestures of arms and hands in relation to each other [101]

31A2521 arms crossed [37]

31A25212 arms crossed over the breast [12]

With the same ease it could be extracted from this database that the gesture of blessing with the arm stretched forward occurs 51 times, or that in 33 scenes we see someone holding his or her hands against each other.

One of the characteristics of the ICONCLASS system, as I have explained above, is the inclusion of fairly large texts as discrete index terms. A compound concept such as

71A82 the killing of Abel: Cains slays him with a stone, a club or a jaw-bone, alternatively with a spade or another tool as weapon

could thus be codified with a single notation.

To determine that this theme is represented six times in these psalters we only need to query the database for a simple string: 71A82. The hierarchical organization of a classification makes the process of broadening or narro-

wing a search term transparent. For instance, querying the psalter database for the more general notation 71A reveals that scenes from "Genesis from the creation to the expulsion from paradise and later years of Adam and Eve" have been depicted 80 times.

So, ICONCLASS, by the 'natural' abstracting process of a classification system, standardizes *how* we call the things and events we see in pictures. I do not need to say that this reduction, this using a common denominator for visual phenomena that are by definition unique, is an absolute condition for the ability to count them.

Exactly at this point ICONCLASS' influence on the standardization of the iconographic access of an image collection ends. The historian himself decides to join a series of visual elements under the same descriptor or to separate them. It is the historian who interprets a particular gesture as one of blessing or speech, or a particular posture as expressing obedience. And finally, it is the historian's responsibility to be consistent in the description of iconographic elements, which is the second condition for a count to have any meaning.

In applying ICONCLASS, or any other descriptive system for that matter, we use categories and concepts of the twentieth, not of the twelfth or thirteenth century. This we cannot escape. Our best chance of getting a grip on the concepts contemporary to and expressed by the imagery of the past is by consistently describing it first, inevitably employing a modern tool. If we do not create a systematic documentary basis, we shall never be able to investigate whether the crossed arms of Abel while being killed may indeed be the artist's interpretation¹⁴ of Abel's reaction to this event (10). Equally, we shall not be able to assess whether the interpretation of this gesture as expressing that "the gentle Abel is submitting to his brother" with resignation, can be supported by the observation that Isaac may also be represented with crossed arms during the sacrifice scene.

We have to record first that in seven out of 26 cases of crossed arms in front of the body, the arms are tied with a rope (ignoring the 10 cases where someone is depicted as being tied to a column with his or her arms crossed in front of it): five times out of these seven it is Christ in an episode from the Passion and twice it is Isaac during the sacrifice scene. In addition to that Christ is depicted twice as dividing the bread at Emmaus with crossed arms; and once one of his disciples at Emmaus is shown with hands crossed. We have also to record first that in two representations of the sacrifice, Isaac is not crossing his arms, but holding his hands against each other and that this same gesture is made once by Abel in the scene of his killing.

Observations like these could lead to the research question whether these gestures - crossed hands on the chest / hands against each other - may have had similar or even synonymous meanings. To a twelfth century observer, that is...

Though tempted, I am not going to try my hand here and now at this "travail de l'historien", as Le Goff calls it.

All I am saying is that the iconographic information in a database such as mine, gathered with some diligence and organized with the help of a useful tool, suggests that we have some work to do before we can try to attempt a serious historical explanation of what appear to be meaningful gestures.

5. Epilogue

As long as art historians who claim that "the history of art ... and other forms of study of visual material are largely and legitimately ahistorical"(11), are seen as representative of the discipline, we should not be surprised if historians themselves would take up the systematic description of art history's object of study - the imagery of the past.

Indeed, they would seem to have to, if they want to include images into their historical source material.

It would be ironic if art history, at a time when images begin to play an increasingly important role in all kinds of historical studies, would abandon the field. It is my conviction that if the discipline would develop practical and theoretical skills for dealing with large amounts of images as historical source material, it could play an important role in cultural history.

What has been said above should be seen against this background. If so, it will be clear that the basic goal of my contribution is to invite other students of imagery to join in a discussion that, to my view, has barely begun.

Notes

1 "Aujourd'hui, plusieurs recherches individuelles ou collectives transforment l'iconographie en entreprise scientifique, intellectuelle et pleinement historique. La constitution de corpus, d'iconothèques et le recours à l'informatique introduisent en en marquant les limites: rendu plus sûr, le travail de l'historien, aiguisé pendant cette phase, reste à faire ensuite - les avantages du quantitatif dans le domaine de l'image qui s'y prête très bien." (1, p.V).

2 Tragically, van de Waal died before any part of the final version of the system was published. For information about the completion, I refer to (3).

3 A more elaborate explanation of ICONCLASS's notational system may be found in A. Grund's article elsewhere in this issue. The detailed knowledge of ICONCLASS's notational "finesses" which, as she correctly argues, it would take an indexer a considerable time to acquire, to say nothing of an end user, has all been woven into the retrieval program that is part of the computer edition of ICONCLASS. It goes without saying that this dramatically reduces the amount of time one needs to learn to use the system.

4 Cf. for example (3).

5 The extent to which these descriptions are abstracted can be measured by the fact that they may give alternative, mutually exclusive versions of a story, all of which may be represented in actual iconography (h.l. 'dragged to death, or torn apart' ...).

6 In general it is left to the user to decide how to arrange the notations he has selected as descriptors of an object. The arrangement may be used to express the indexer's judgement about the relative importance of the iconographical elements of

an image. Some users of ICONCLASS have developed syntactic devices for this purpose. On the other hand the cataloguer may deliberately abstain from expressing such a judgement and consider all descriptors as of (potentially) equal importance. In any case the computer edition of ICONCLASS does not offer syntactic tools.

7 For an exploratory study I may refer to (5).

8 The computerization of ICONCLASS was undertaken by a small team of researchers and programmers at the Department of Computers & Humanities of Utrecht University. This department is co-founder of the ICONCLASS Research & Development Group, together with the Department of Art History of Leiden University, the cradle of ICONCLASS.

9 Of course, in the context of the alphabetic index, 'preferred' term are merely the terms that lead us to the concepts in the schedules, i.e. the truly preferred terms.

10 An algorithm was created that allows for the retrieval of a concept with two keywords, linked by the 'AND' operator, even though they do not belong to the same record. So Hippolytus AND accident will indeed retrieve

95A(HIPPOLYTUS)68 etc ...

A combination like accident AND mythology will retrieve 13 different concepts, among which:

92C4543 Venus fortuitously grazed by Cupid's arrow (possibly combined with the story of Adonis)

A more detailed treatment of this facility and of the option to combine a keyword with a notation in a single query - both of which were absent from the printed edition of the system - is given in (6).

11 For the publication of the Dutch Royal Library's collection of Dutch printer's devices from the period 1540-1700. For a review of the ICONCLASS Browser and the CD-ROM see (7)

12 See (8) p.24

13 It may be useful to emphasize that this database is still being added to, so I am referring to work in progress. Because I am using the information extracted from my database merely to illustrate my point about the countability of iconographic data, I will not bother the reader with shelf and folio numbers.

14 Indeed, we have to question whether the concepts "artist" and "the artist's interpretation" have much meaning in the context of twelfth century psalter production.

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