

# Transdisciplinary approaches in documentation of biodiversity

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Biodiversity Informatics

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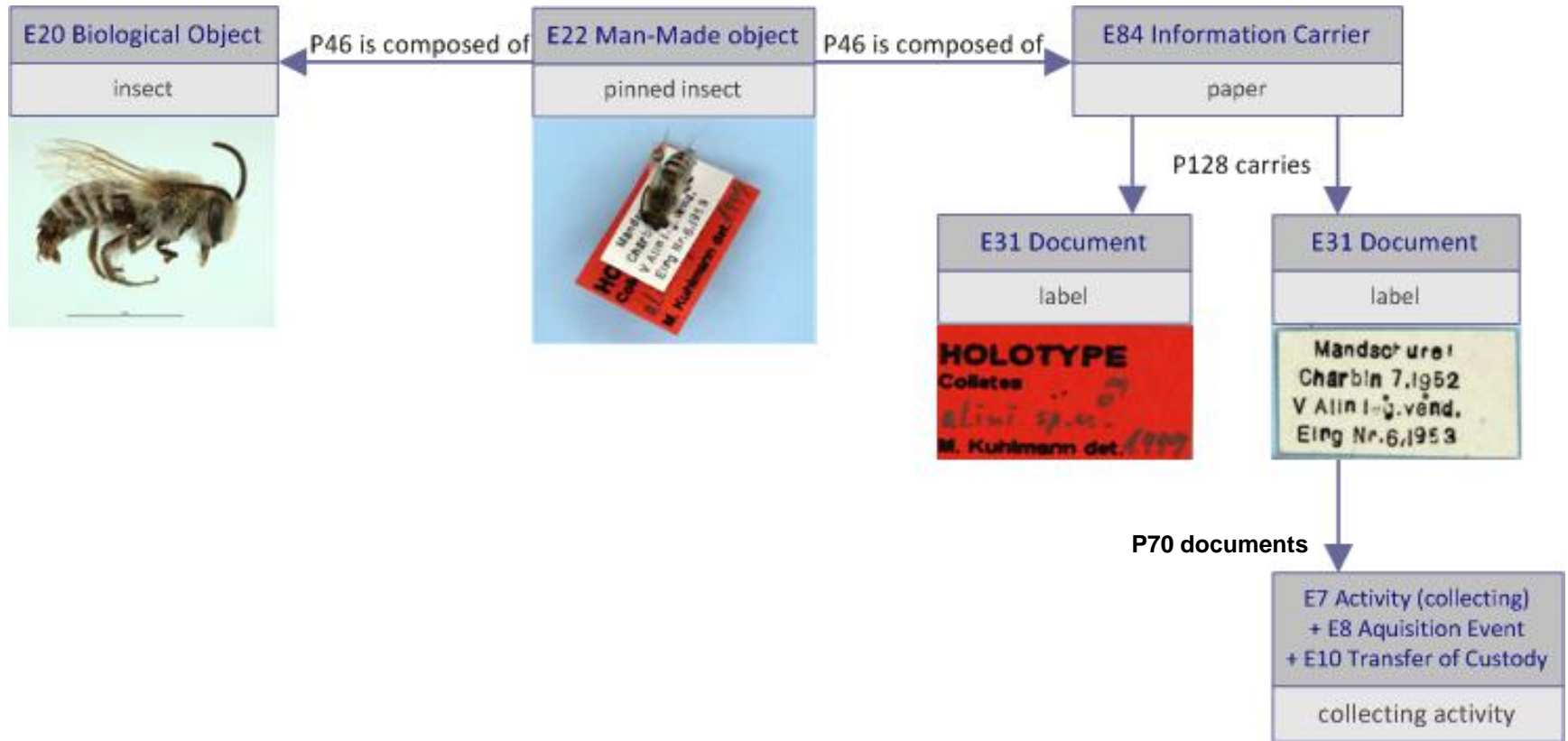
# What is it?



# Knowledge associated with a well documented pinned insect

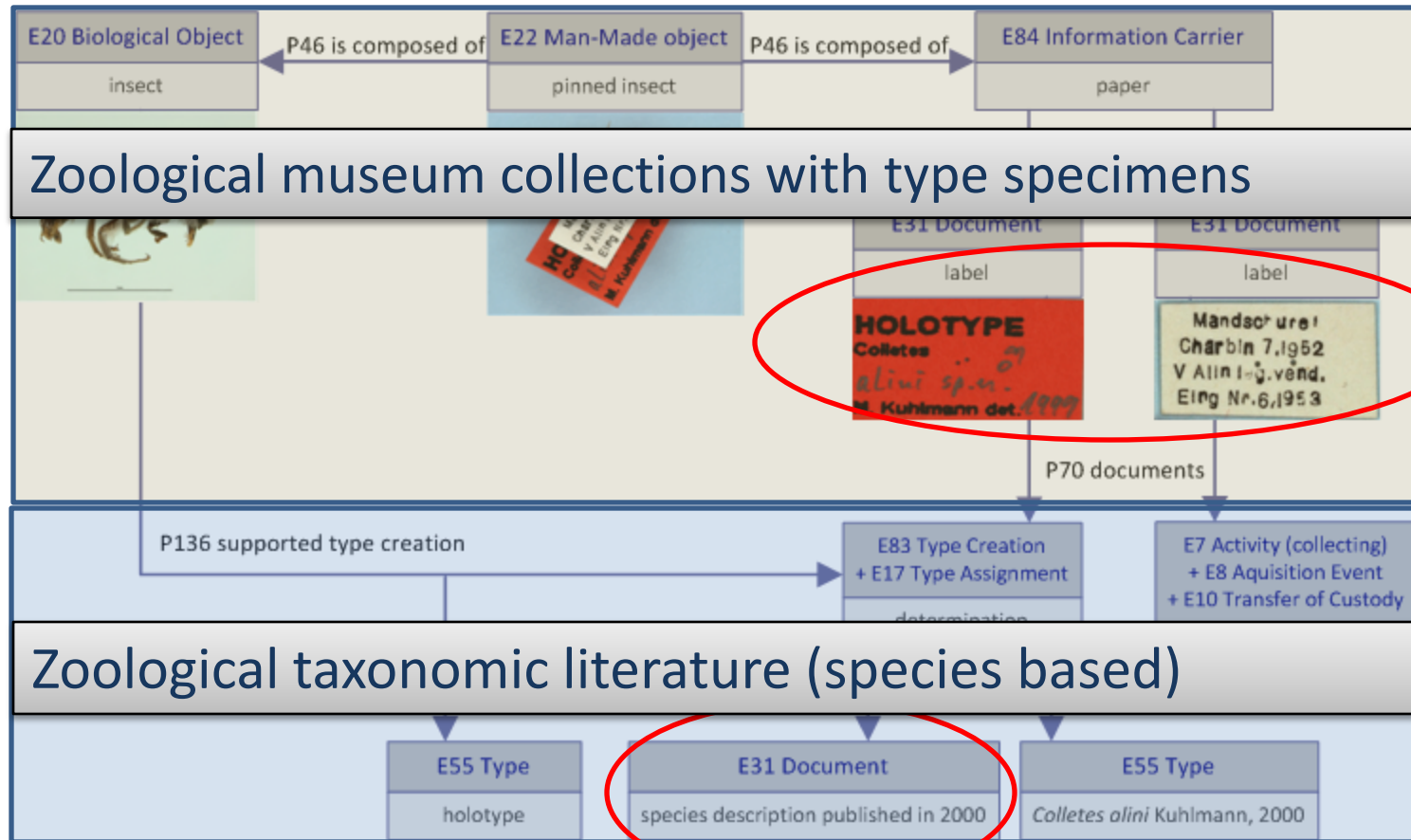


# Knowledge associated with a well documented pinned insect



# Knowledge associated with a well documented pinned insect

## Name bearing Type specimen db's



## Global Taxonomic Authority Files

# Ontology based comparison of information sources in libraries and in museum collections



	Global Taxonomic Authority File	Specimen based Museum data	Reciprocal Verification				
			Primary Types not listed in OSF	Taxa not listed in OSF	OSF-Type data not confirmed in Museums	Primary Types lost	Primary Types newly recognized (unlabeled)
Berlin	1.093	1.423	330	68	15		12
Eberwalde	45	79	34			1	
Dresden	66	117	55	10			7
Hamburg	42	135	43			5	
Malle	36	55	25				3
Bonn	6	44	12	13			
Frankfurt	82	151	69	5			1
Stuttgart	47	112	65	5			3
Munich	27	54	21	1		1	
Sum	1.546	2.170	654	107	30	57	39

25% inconsistencies

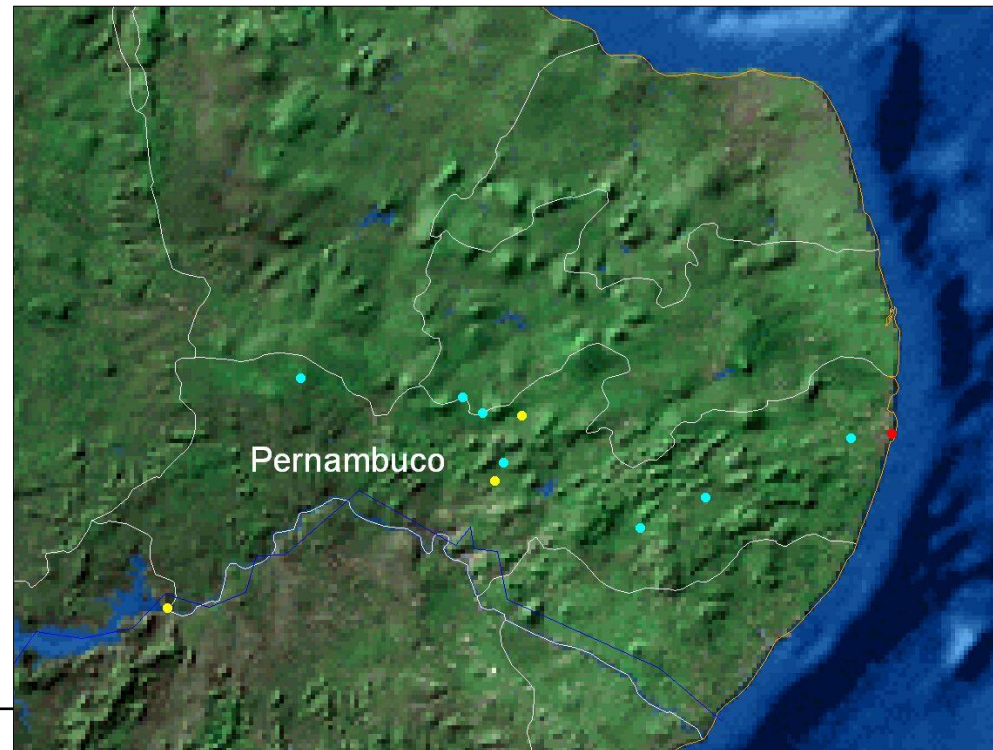
# The geo-referencing bottleneck



Sao Bento



Tapera

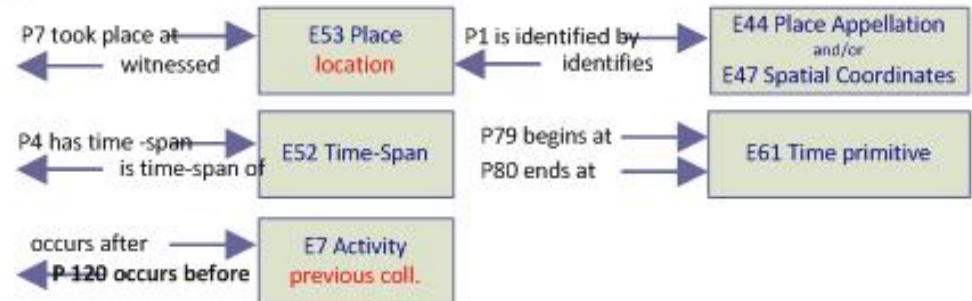
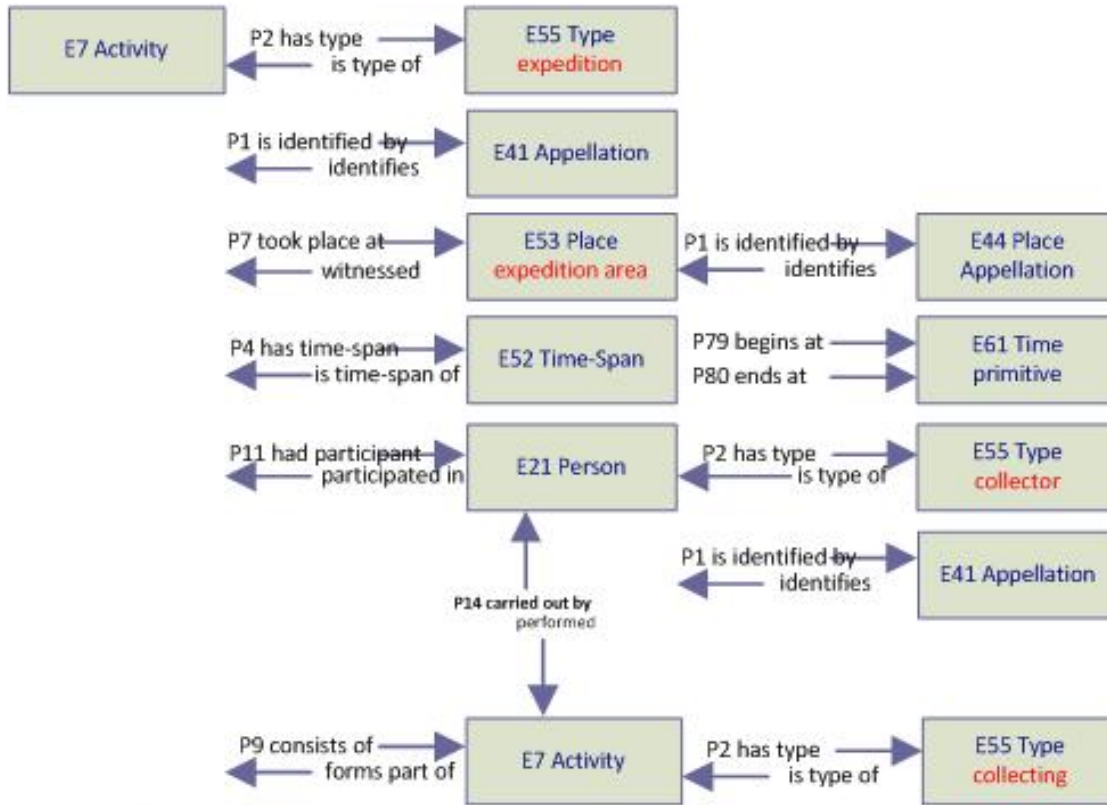


BIOLÓGICO



Federal Ministry of Education and Research

# Expedition- & collecting events in terms of CIDOC CRM



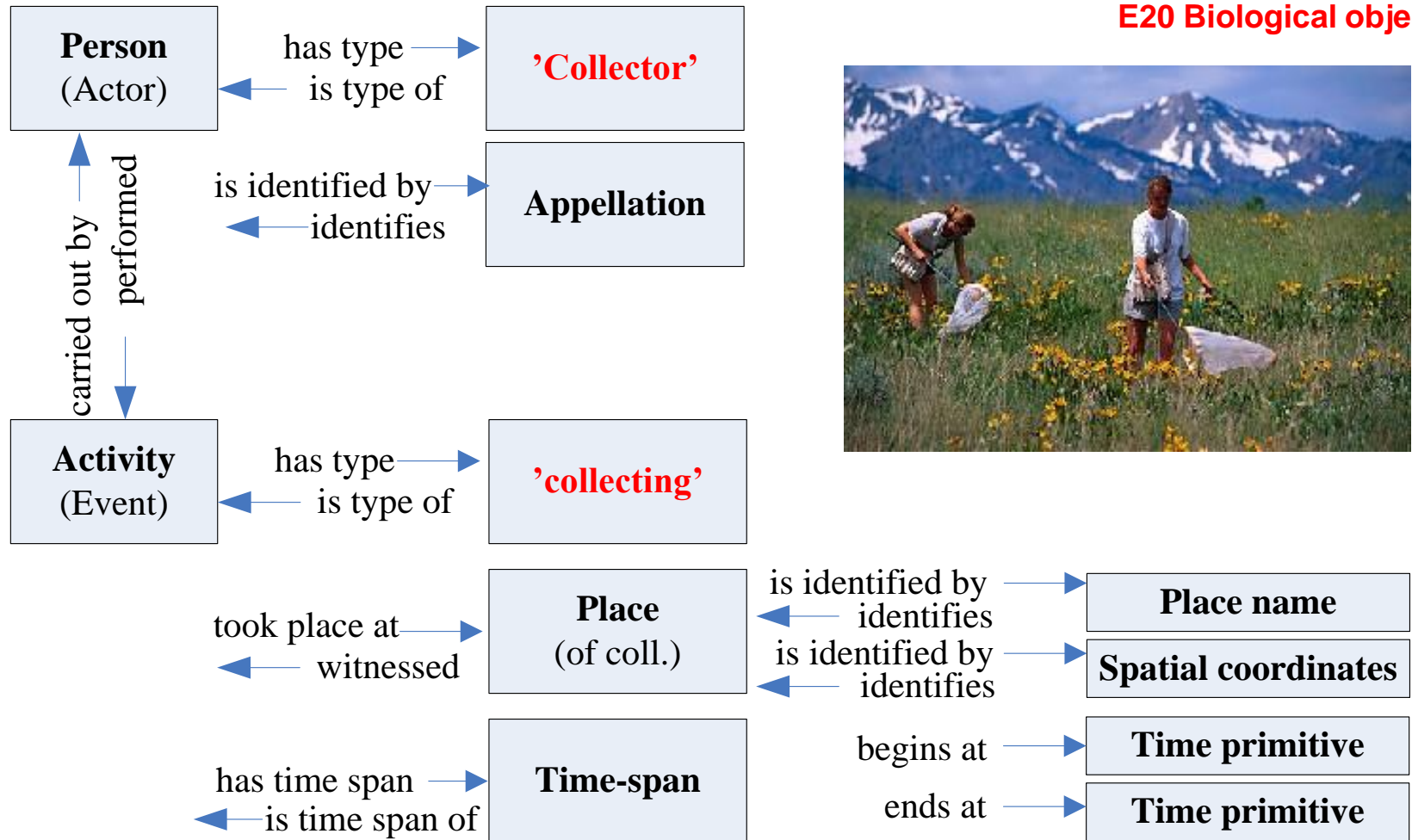
BILOG



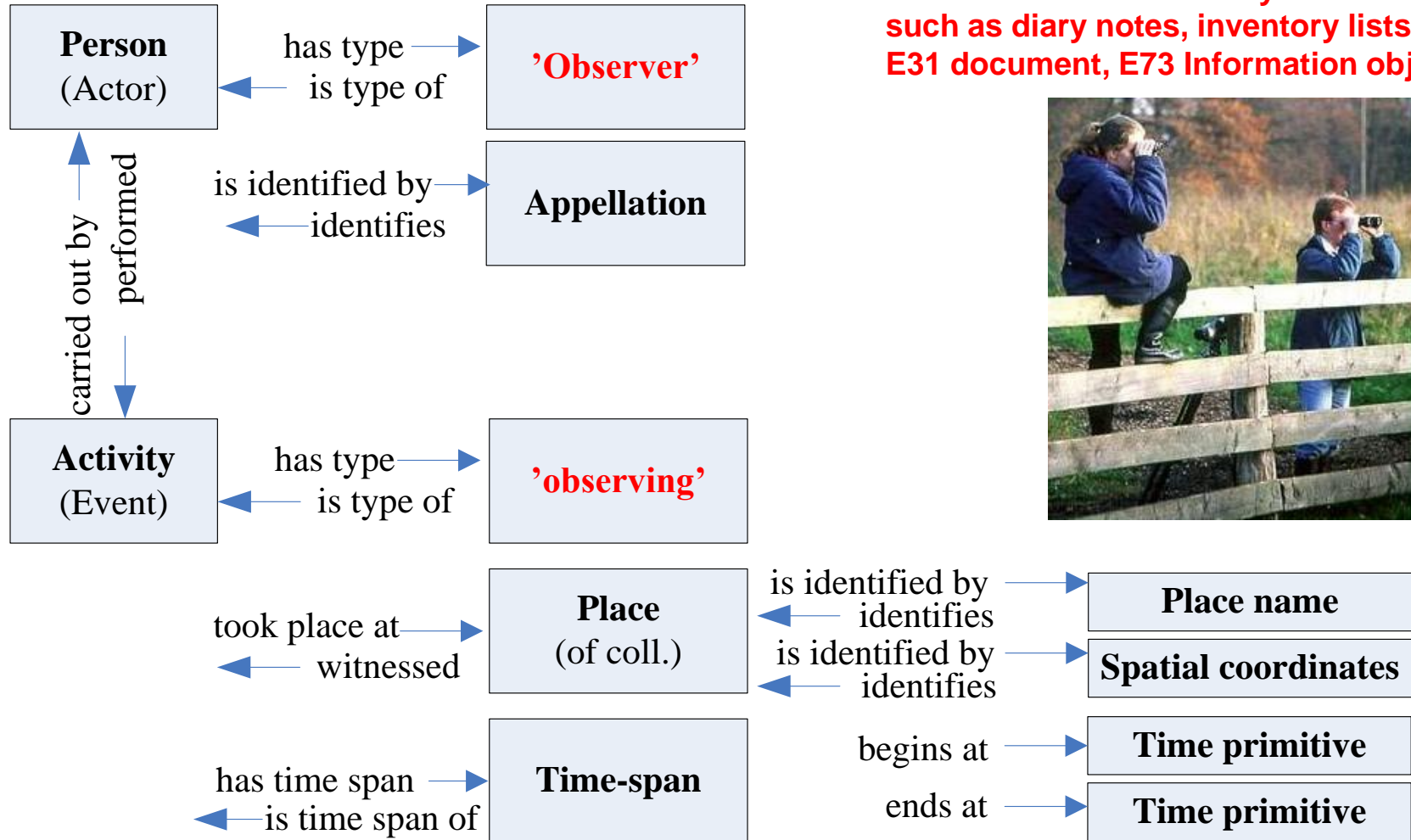
Federal Ministry of Education and Research



# Collecting events in terms of CIDOC CRM



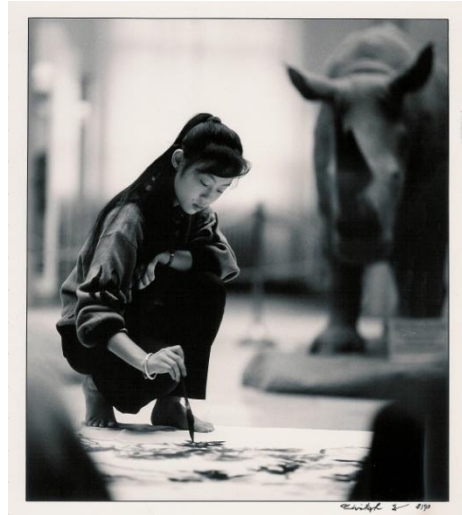
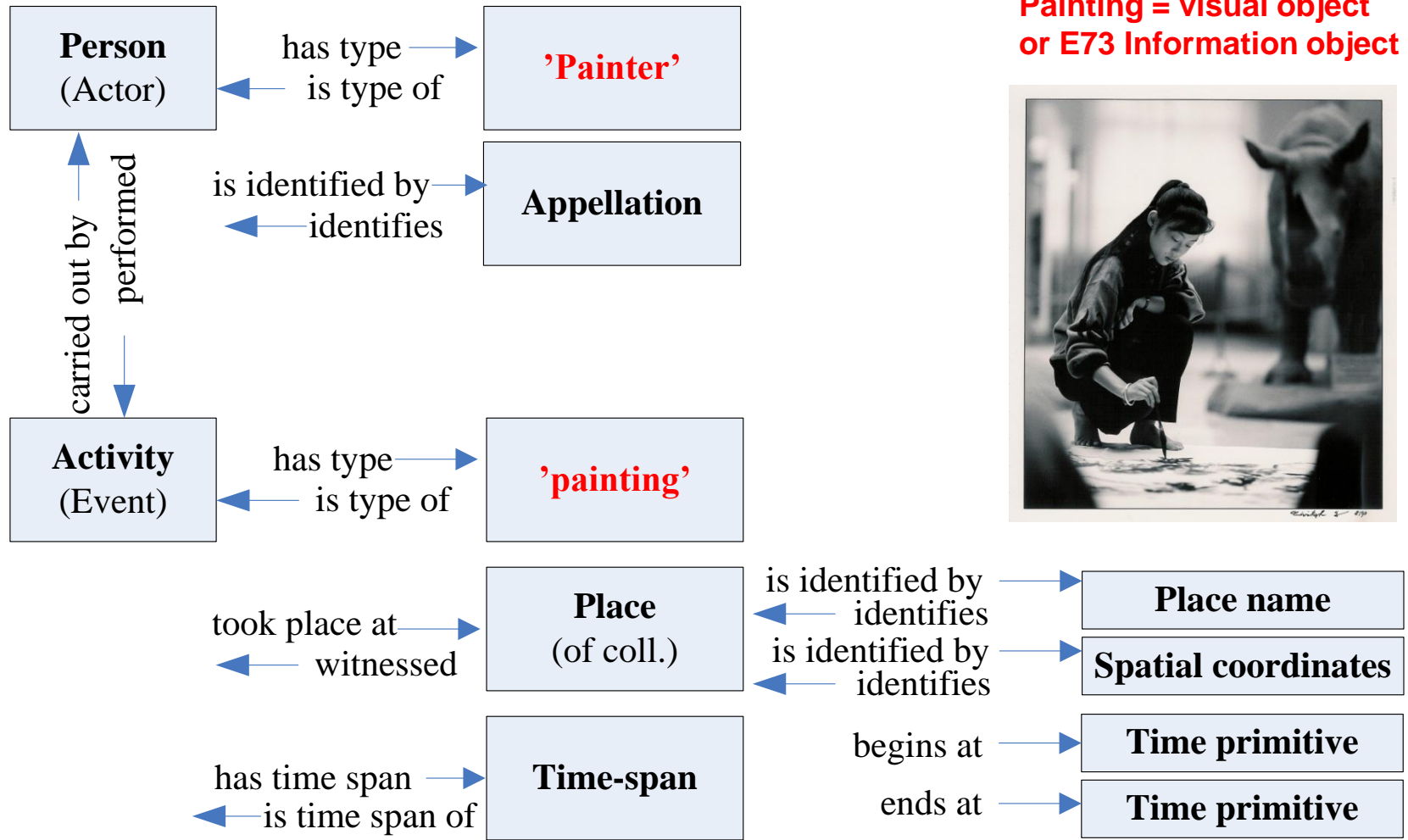
# Observing events in terms of CIDOC CRM



instances of documentary nature  
such as diary notes, inventory lists  
E31 document, E73 Information object



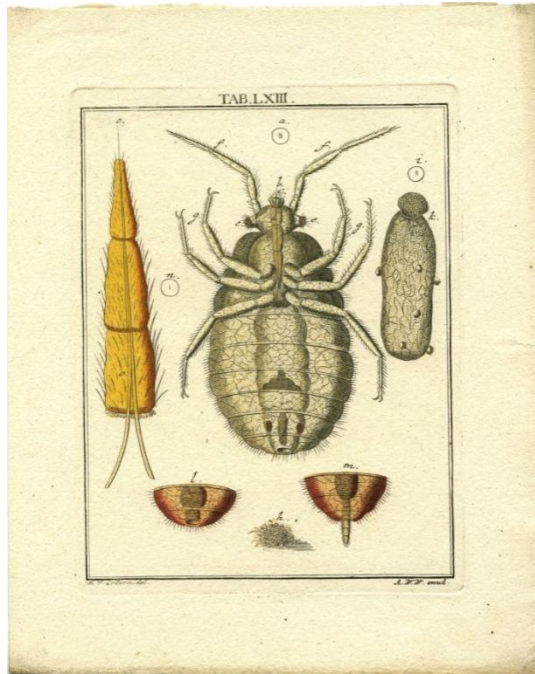
# Painting events in terms of CIDOC CRM



# Documentation of a bed bug at the GNM and at the ZFMK

## *Cimex lectuarius* Linnaeus, 1758

GERMANISCHES  
NATIONAL  
MUSEUM



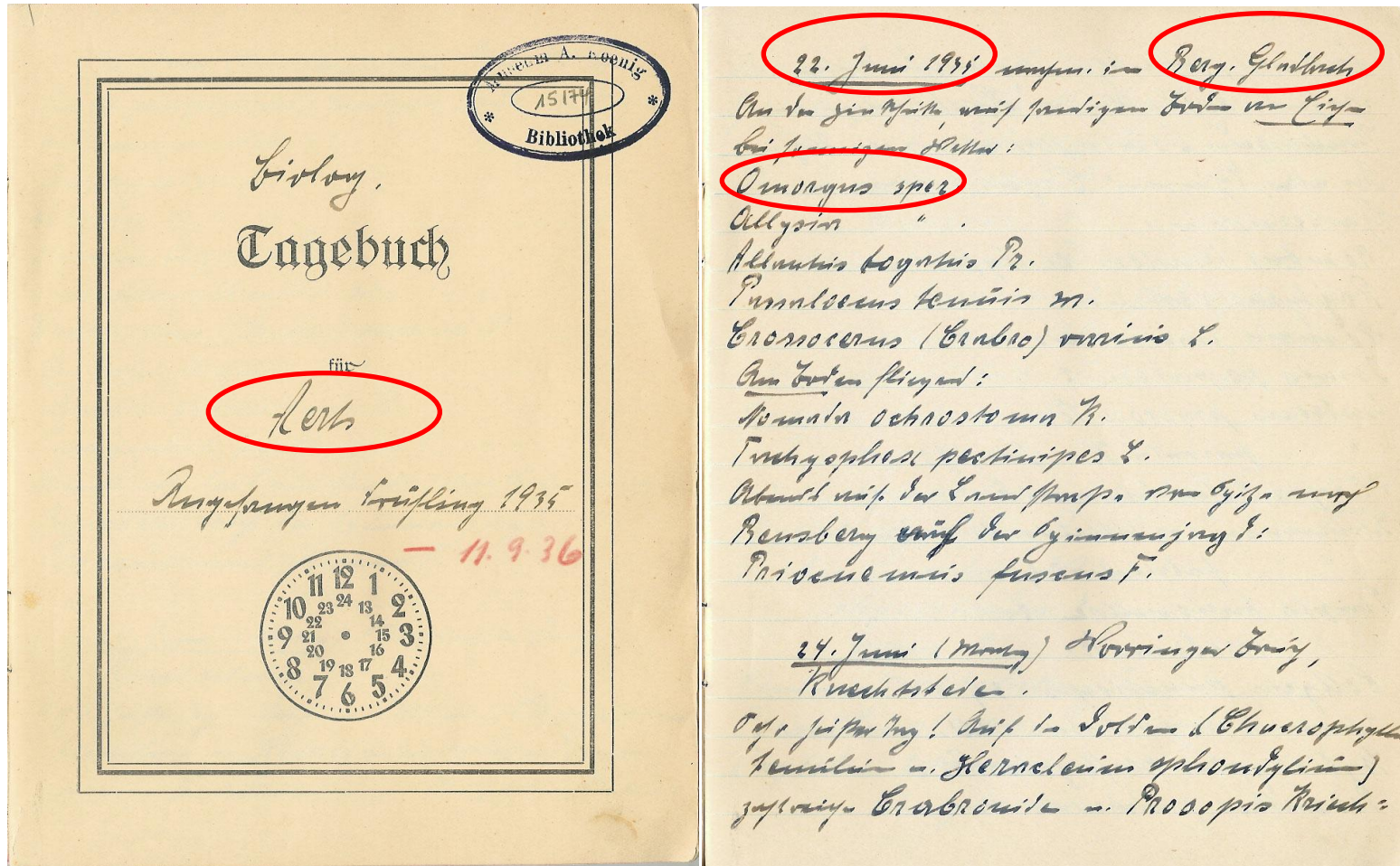
FORSCHUNGS  
museum  
KOENIG



Inventarnummer: HB Kapsel  
Allg. Darstellung eines mikroskopischen Befundes (Insekt)  
Bezeichnung: Befundes (Insekt)  
Hersteller: Winterschmidt, Adam Wolfgang (Verleger); Ledermüller, Martin Frobenius (Zeichner)  
Datierung: um 1750  
Herstellungsort: Nürnberg? (Verlagsort)  
Material/Technik: Papier / Kupferstich & handkoloriert  
Maße: ,9 x ,1 (Platte) & ,5 x ,3 (Darstellung) & ,9 x ,8 (Blatt) (Höhe\*Breite/cm)  
Schlagwort: Mikroskop, Thema eines naturwissenschaftlichen Experiments; Insekten

Katalog Nr.: ZFMK\_HET\_2007\_200  
Determinator: *Cimex lectuarius* Linnaeus, 1758  
Determinator: Dirk Rohwedder, 2007  
Fundort: Sittard  
geo. Koordinaten: 51 00' 00" N / 5 52' 0" E  
Sammler: Rene Oberthür  
Sammeldatum: VIII. 1918  
Ehemalige Sammlung: Rene Oberthür

Information source: itinerary  
documenting observing and /or collecting events



# Information source: documented slides



Photographer: José Verkest

No. of photographing event

Species no.:  
*Paravespula rufa*

# Information source: database



Photographer: Helmut Dalitz

photo date: 30.4.2008, 13:30

Determined by: Helmut Dalitz

Kakamega Forest, Yala; Lat/Long: 0 14' 18.03" N, 34 53' 27.53" E

# Information source : Rock art painting

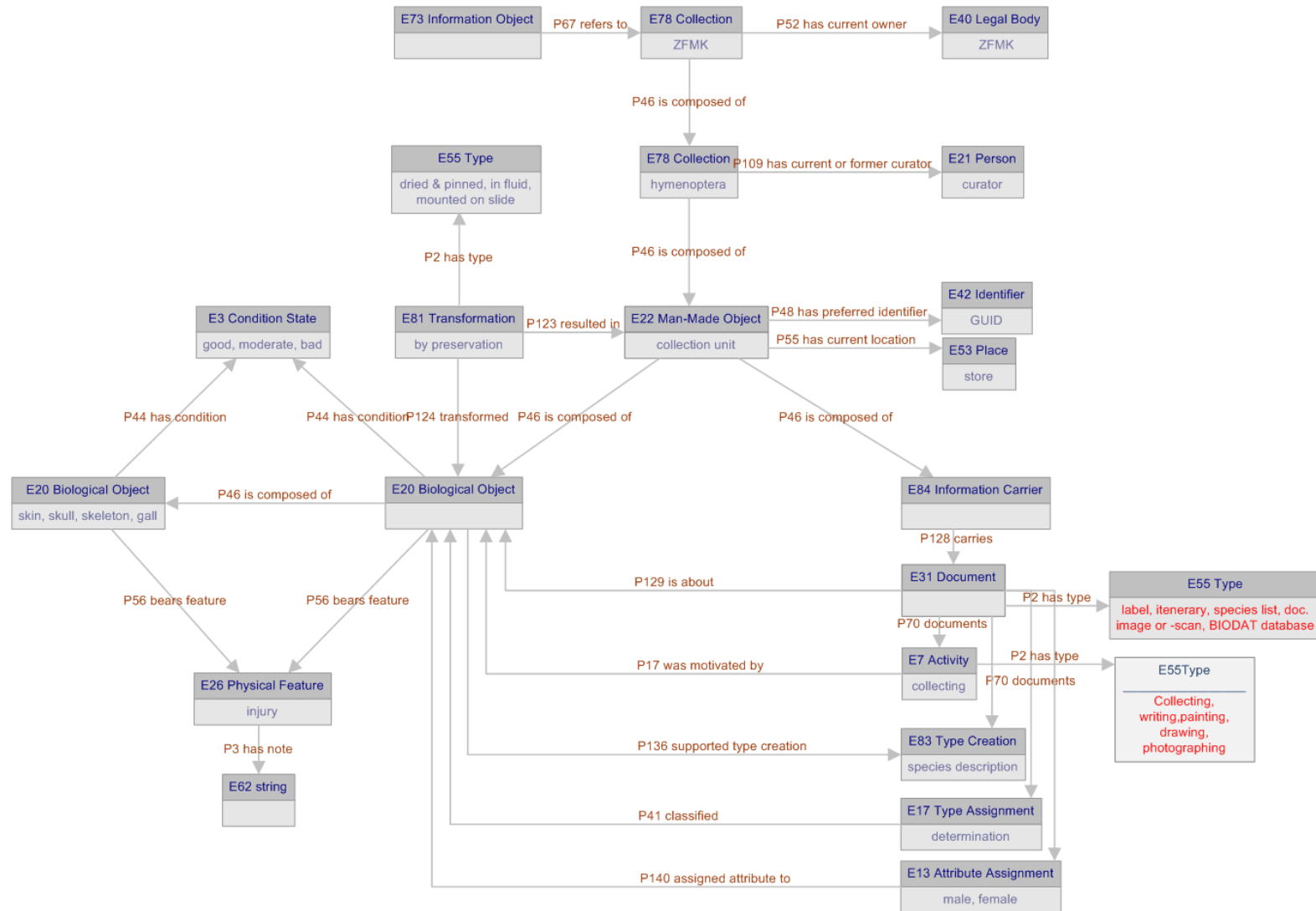


Male hunter with bow

Location:Cederberg, South Africa.  
Dated: 2,000 – 20,000 years old  
Artists: San groups



# Biodiversity information sources



# “Winter Landscape with Bird Trap” (1601)

After Breugel (Pieter Bruegel the Younger), KHM Wien/Austria, Inv. No.GG625



# Multiple verification of information from meteorology, cultural history and natural history

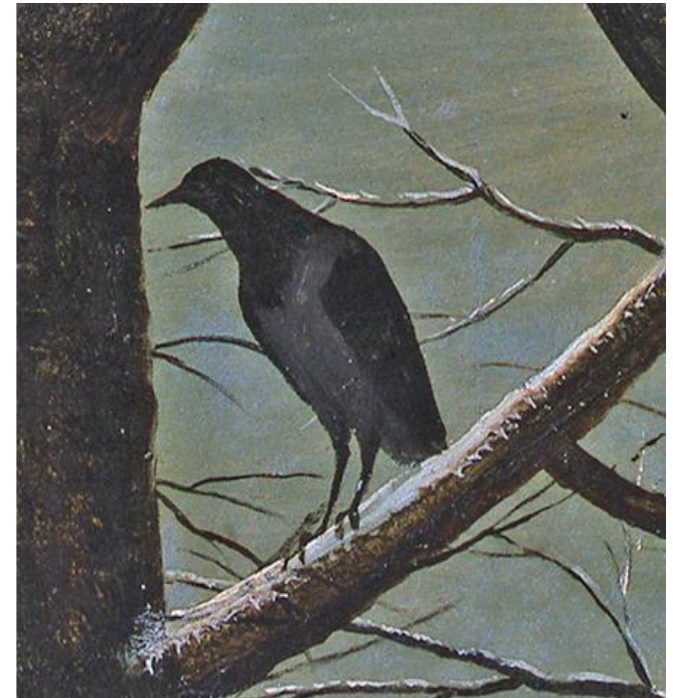


Hooded crows in Holland?



# Hunters in the Snow

(P. Breughel the Elder, 1565, KHM Wien: Inv. No.GG1838)



# Turkey as an element of an medieval animal frieze in the Cathedral of Schleswig?



Phot.: Pastor Pfeifer, Schleswig

# Acknowledgements

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- Florian Kugler, KHM Vienna
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## Further reference:

LAMPE, K.-H., RIEDE, K. & DOERR, M. 2008:

Research between Natural- and Cultural History Information: Benefits and IT-requirements for Transdisciplinarity. -

ACM J. Comput. Cultur. Heritage 1, 1, Article 4 (June 2008), 22 pages. DOI = 10.1145/1367080.1367084

<http://doi.acm.org/10.1145/1367080.1367084>.

## Full PDF:

<http://www.groms.de/data/zoology/riede/LampeRiedeDoerrACM2008.pdf>