

# KinOath, Kinship Software Beta Stage of Development

The kinship archiving software under development by Peter Withers at the Language Archive, MPI, Nijmegen

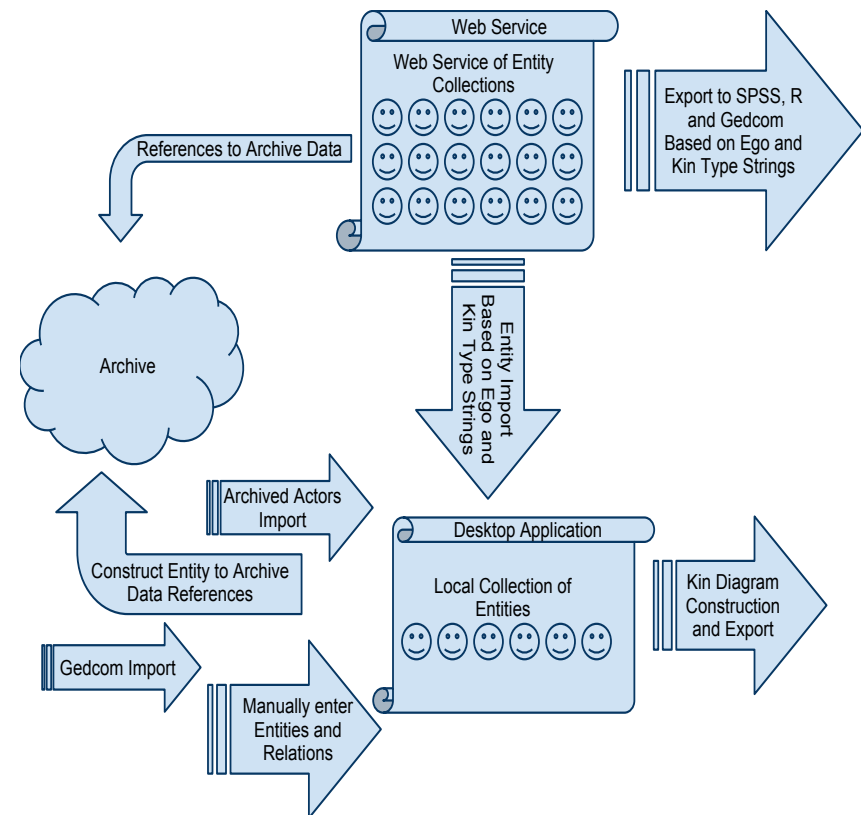
# Introduction

- KinOath is a kinship application under development by Peter Withers at the Language Archive of the Max Planck Institute for Psycholinguistics Nijmegen.
- Its primary goal is to connect kinship data with archived data, such as audio, video or written resources while also being closely integrated with the archive software such as Arbil.
- Beyond this goal it is designed to be flexible and culturally nonspecific, such that culturally different social structures can equally be represented.

# Application Overview

There are two main parts to the application:

- Web Application
- Desktop Application
- Each of these can link to archived or external data



# Current State of Development

- The desktop application is in beta stage
- The web application is still under development
- This talk will show examples of how the current beta of the desktop application can be used and also discuss features that are planned or in development

# Beta Stage of Development Means:

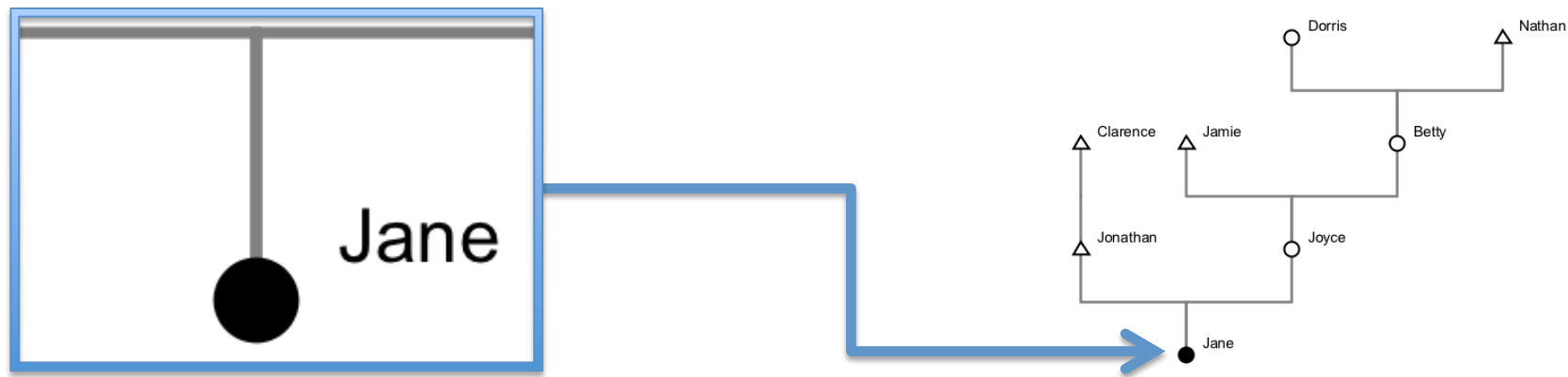
- Usability testing has begun and the interface is being refined
- Most features are present, but not all features fully functional
- Formal software testing has not begun so there will be bugs
- Public beta release will be very soon

# Core Aspects

- Graphical representation of the data is an important part of the application and the diagrams produced are intended to be very flexible and of publishable quality.
- Kin type strings are used throughout the application for constructing and searching data sets.
- The representation of kin terms is also integrated into the application allowing comparative diagrams of kin terminology.

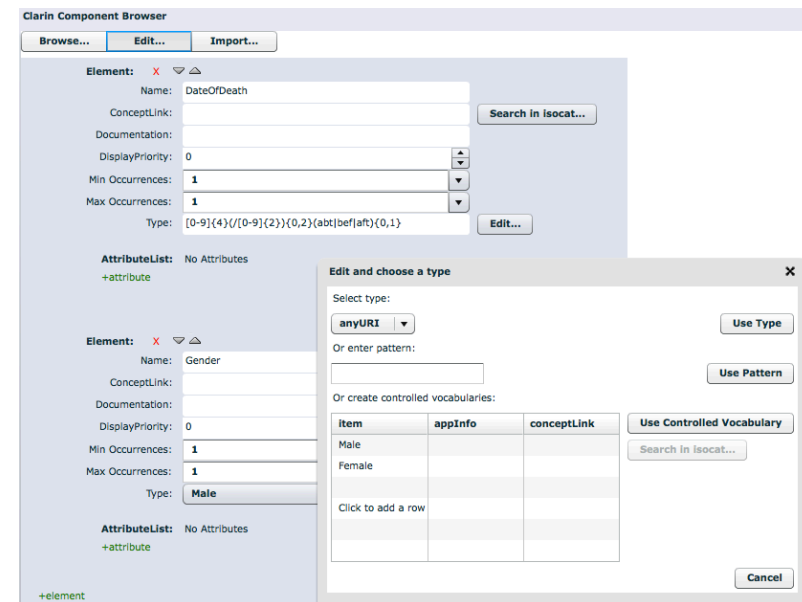
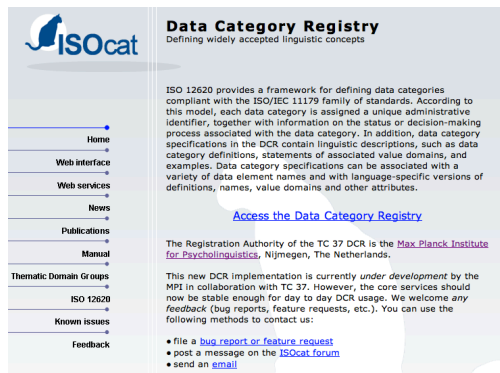
# Publishable Diagrams

- All the diagrams produced are in a vector format of publishing quality
- All diagrams can be exported into PDF format
- The working files are vector graphics files that can be viewed in a web browser



# Flexible Data Structure

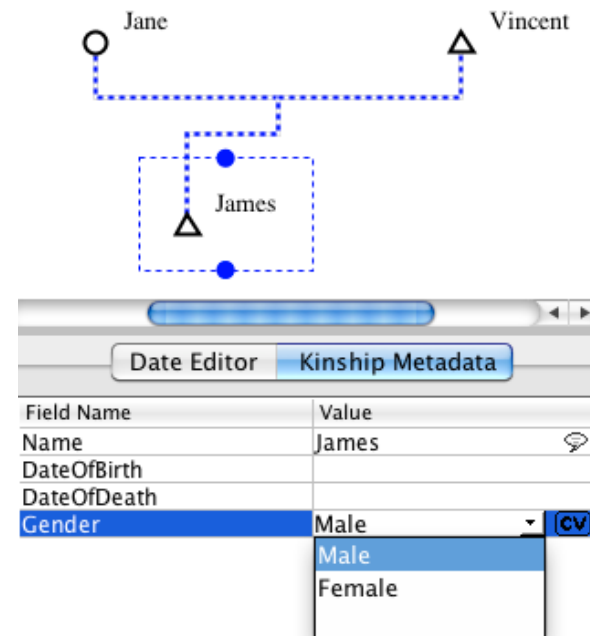
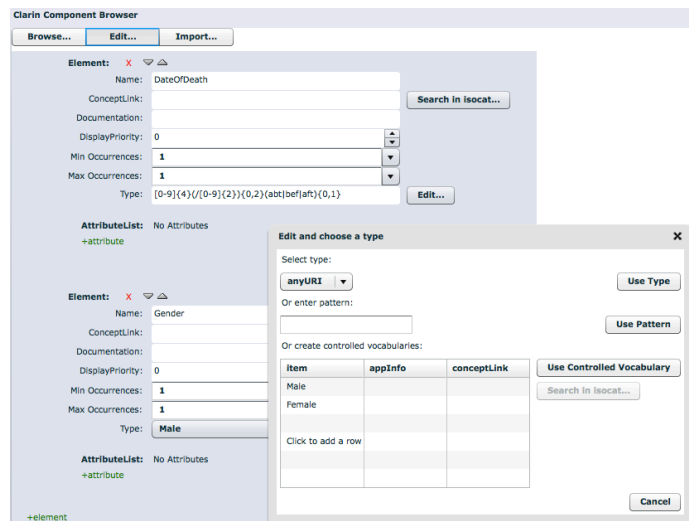
- The Clarin Component Registry can be used
- <http://catalog.clarin.eu/ds/ComponentRegistry>
- <http://www.isocat.org/>





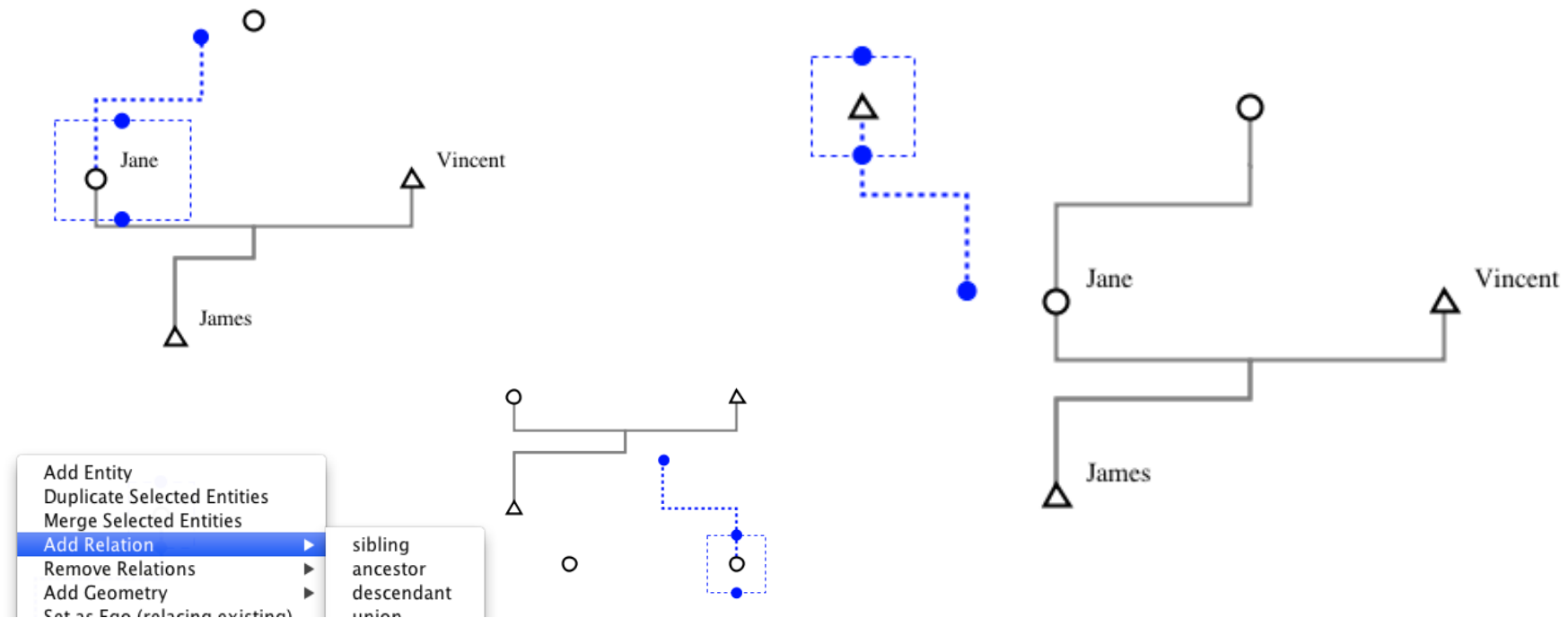
# Multiple Data Types

- The data structure designed in the component registry can be used on the kin diagrams
- Multiple data structure types are possible on the same diagram



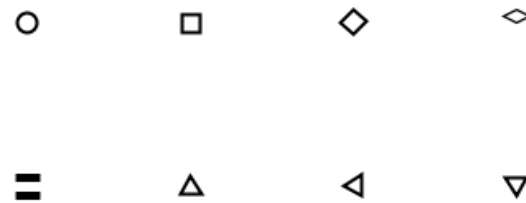
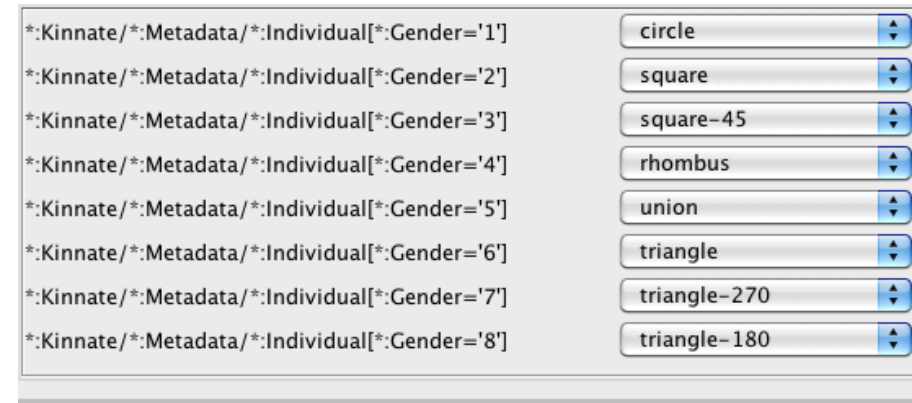
# Adding Relations

Relations can be constructed either via the context menu or by dragging the blue dots with the mouse



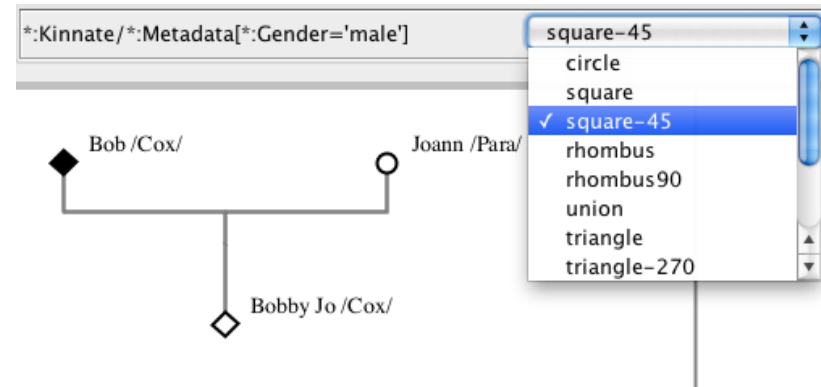
# Creating Custom Symbols

- Custom symbols can be inserted into a kin diagram and used like any existing symbol
- Currently there is no simple way to add them via the user interface
- In the interim time this can be achieved by using an external editor such as Inkscape and adding the new symbol manually.



# Selecting Custom Symbols

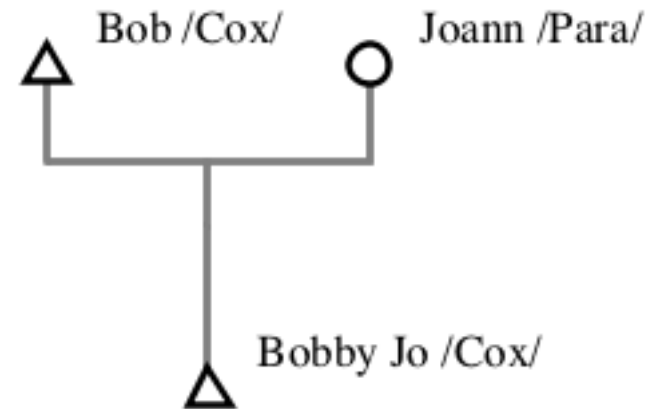
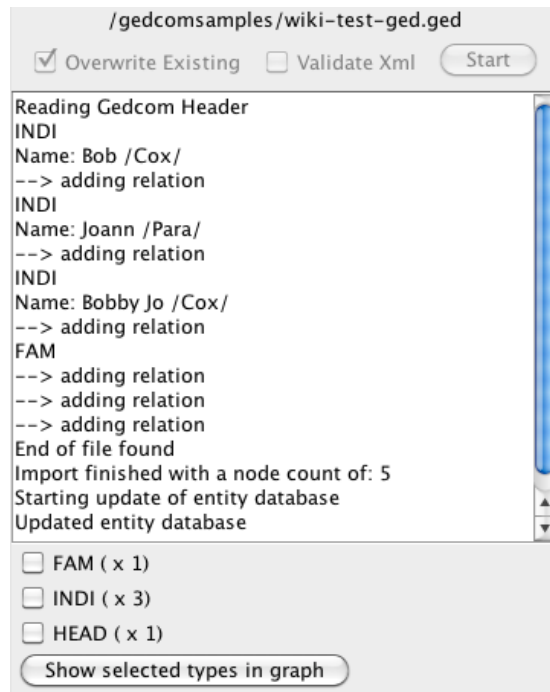
- The symbols are placed on the diagram based on the data for that individual
- Any number of symbols can be use on a diagram
- For instance "`*:Kinnate/*:Entity[*:Gender='male']`" can be associated with the symbol "rhombus"
- Note that the table data is extremely flexible and could equally be "`*:Kinnate/*:Entity[*:caste='Y']`"
- Additional overlay symbols will be available in the future



Field Name	Value
Name	
DateOfBirth	
DateOfDeath	
Gender	Male

# Gedcom Import

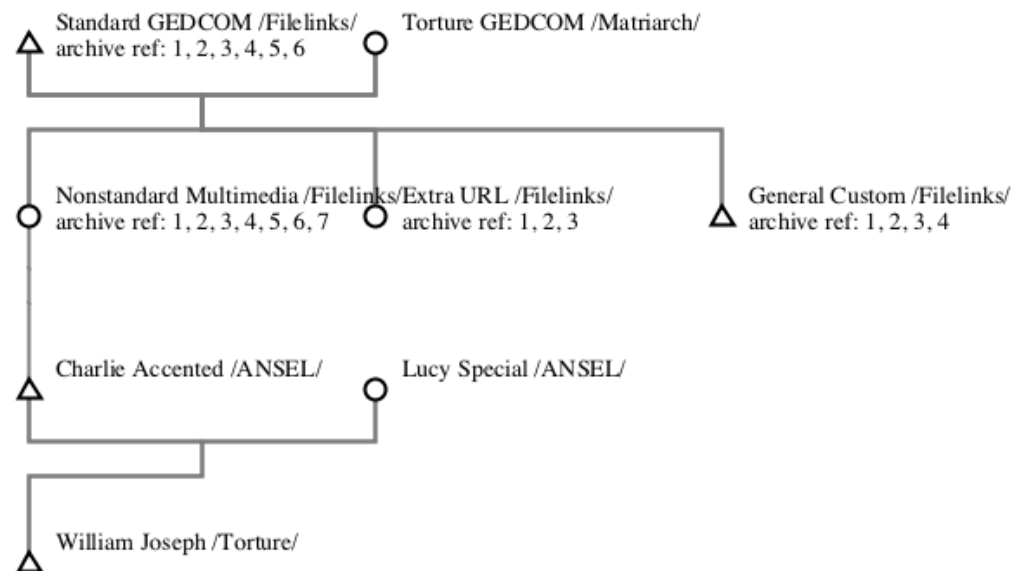
```
sample.ged
0 HEAD
1 SOUR Reunion
2 VERS V8.0
2 CORP Leister Productions
1 DEST Reunion
1 DATE 11 FEB 2006
1 FILE test
1 GEDC
2 VERS 5.5
1 CHAR MACINTOSH
0 @I1@ INDI
1 NAME Bob /Cox/
1 SEX M
1 FAMS @F1@
1 CHAN
2 DATE 11 FEB 2006
0 @I2@ INDI
1 NAME Joann /Para/
1 SEX F
1 FAMS @F1@
1 CHAN
2 DATE 11 FEB 2006
0 @I3@ INDI
1 NAME Bobby Jo /Cox/
1 SEX M
1 FAMC @F1@
1 CHAN
2 DATE 11 FEB 2006
0 @F1@ FAM
1 HUSB @I1@
1 WIFE @I2@
1 MARR
1 CHIL @I3@
0 TRLR
```



- All Gedcom fields are imported
- This simple example is from the Wikipedia Gedcom page
- <http://en.wikipedia.org/wiki/Gedcom>
- For testing the “GEDCOM 5.5 Torture Test Files” are used
- <http://www.geditcom.com/gedcom.html>

# Resource Files

- Like manually created resource links, imported GEDCOM resources files are available both on the diagram and via the diagram tree



# Kin Type Queries

- Kin type queries consist of kin types followed by search parameters

E[Margaret of\_Sweden]

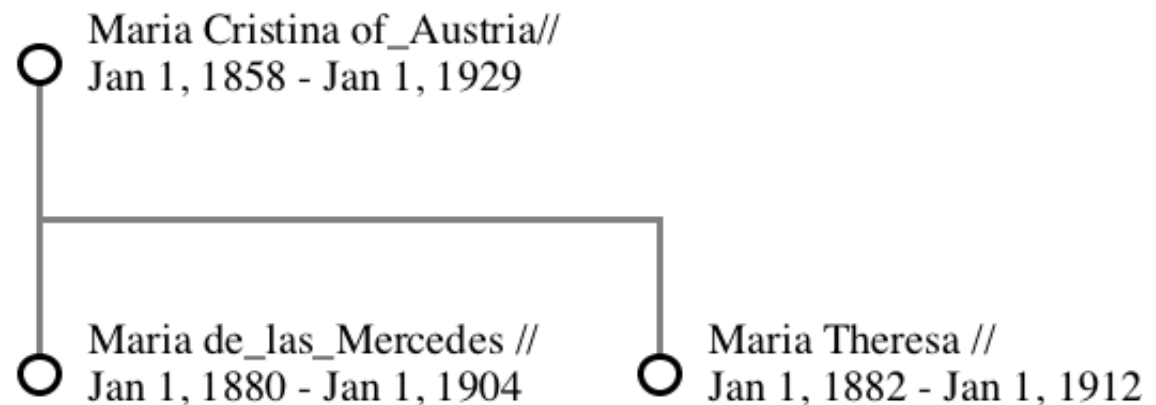
● Margaret of\_Sweden //  
Jan 15, 1882 - May 1, 1920

- This example will show any entity that contains the string “Margaret of\_Sweden” on the diagram, in this case there is only one match

# Kin Type Query Syntax

- The kin types following a query will add any matching kin, for example the daughters of Maria

x[Maria Cristina of\_Austria]D





# Dragging to the Query Text

- The queries can be constructed by dragging values from the table below (when entities are selected) onto the query text

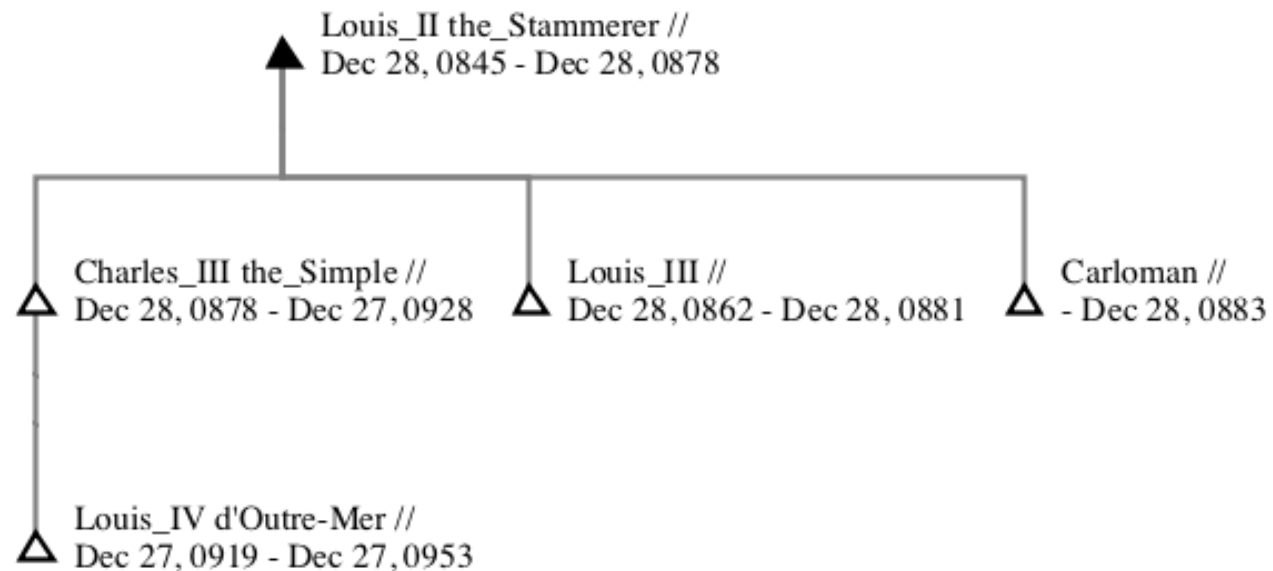
E[INDI.NAME=Louis\_II the\_Stammerer //]

Field Name	Value
NAME	Louis_II the_Stammerer //
TITL	King of France
SEX	M
BIRT.DATE	846
DEAT.DATE	879

# Kin Type String Queries

- Multiple queries can be used per kin type
- Queries can use = contains, == exact match, > greater than, < less than

`E[DateOfBirth<0850][INDI.TITL=King of France]CC`



# Kin Type Definitions

- The kin types used in the application can be customized
- Each kin type can use any string and any symbol
- These custom kin types are stored in the diagram file

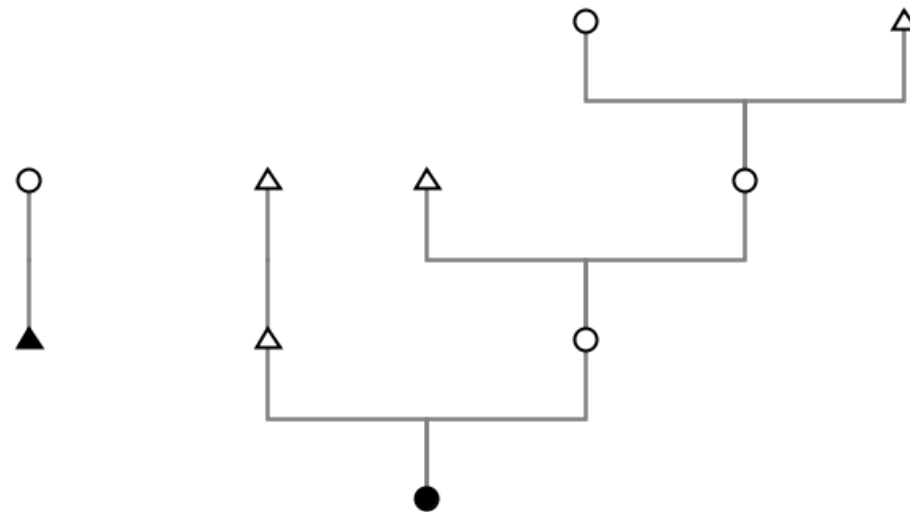
Kin Type String	Relation Type	Symbol Type	Display Name	
Ef	none	circle	Ego Female	<input type="checkbox"/>
Em	none	triangle	Ego Male	<input type="checkbox"/>
Fa	ancestor	triangle	Father	<input type="checkbox"/>
Mo	ancestor	circle	Mother	<input type="checkbox"/>
Br	sibling	triangle	Brother	<input type="checkbox"/>
Si	sibling	circle	Sister	<input type="checkbox"/>
So	descendant	triangle	Son	<input type="checkbox"/>
Da	descendant	circle	Daughter	<input type="checkbox"/>
Hu	union	triangle	Husband	<input type="checkbox"/>
Wi	union	circle	Wife	<input type="checkbox"/>
Pa	ancestor	square	Parent	<input type="checkbox"/>
Sb	sibling	square	Sibling	<input type="checkbox"/>
Sp	union	square	Spouse	<input type="checkbox"/>
Ch	descendant	square	Child	<input type="checkbox"/>
F	ancestor	triangle	Father	<input type="checkbox"/>
M	ancestor	circle	Mother	<input type="checkbox"/>
B	sibling	triangle	Brother	<input type="checkbox"/>
Z	sibling	circle	Sister	<input type="checkbox"/>
S	descendant	triangle	Son	<input type="checkbox"/>
D	descendant	circle	Daughter	<input type="checkbox"/>
H	union	triangle	Husband	<input type="checkbox"/>
W	union	circle	Wife	<input type="checkbox"/>
P	ancestor	square	Parent	<input type="checkbox"/>
G	sibling	square	Sibling	<input type="checkbox"/>
E	none	square	Ego	<input type="checkbox"/>
C	descendant	square	Child	<input type="checkbox"/>
m	none	triangle	Male	<input type="checkbox"/>
f	none	circle	Female	<input type="checkbox"/>
x	none	square	Undefined	<input type="checkbox"/>
*			Any Relation	<input type="checkbox"/>

F	ancestor	triangle	Father
M	ancestor	circle	Mother
B	sibling	triangle	Brother
Z	sibling	circle	Sister
S	descendant	triangle	Son
D	descendant	circle	Daughter
H	union	triangle	Husband
W	union	circle	Wife
P	ancestor	square	Parent
G	sibling	square	Sibling
E	none	square	Ego
C	descendant	square	Child

# Freeform Diagrams

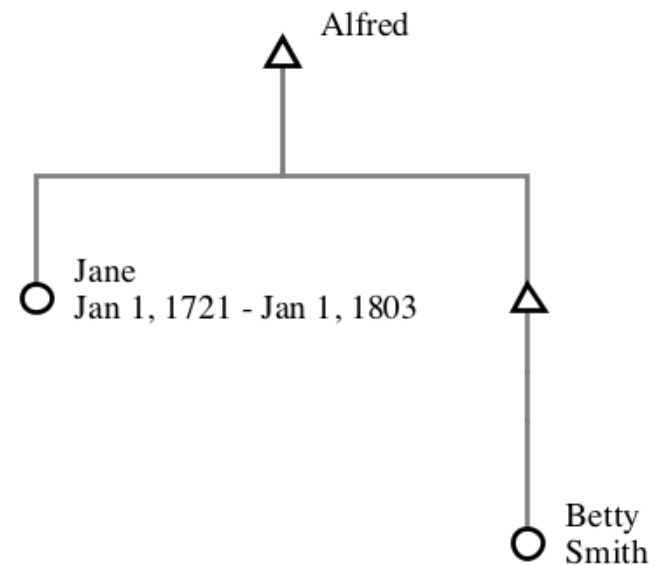
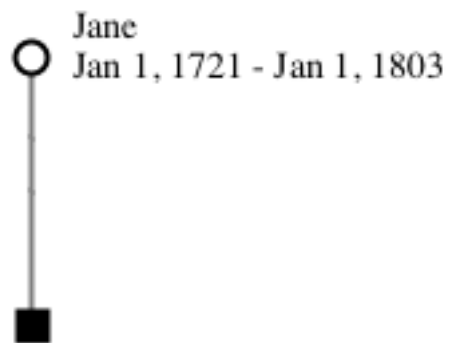
- Freeform diagrams are constructed simply by entering kin type strings

Efff  
EfMF  
EfMMF  
EfMMM  
Em  
EmM



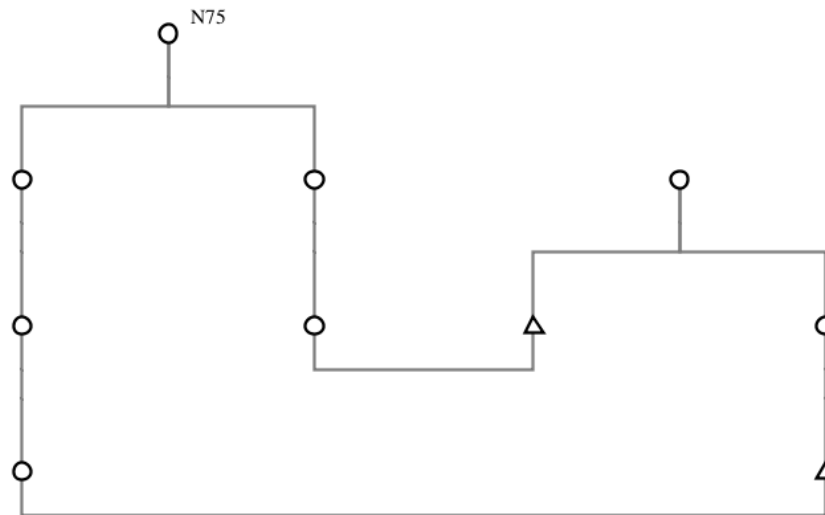
# Freeform Diagram Syntax

- <KinType>:<id>;<label>;<label...>;<DOB>-<DOD>:<KinType...>
- EM:Jane;1721-1803:
- f:#3;Jane;1721-1803:F:Alfred:SD:Betty;Smith:

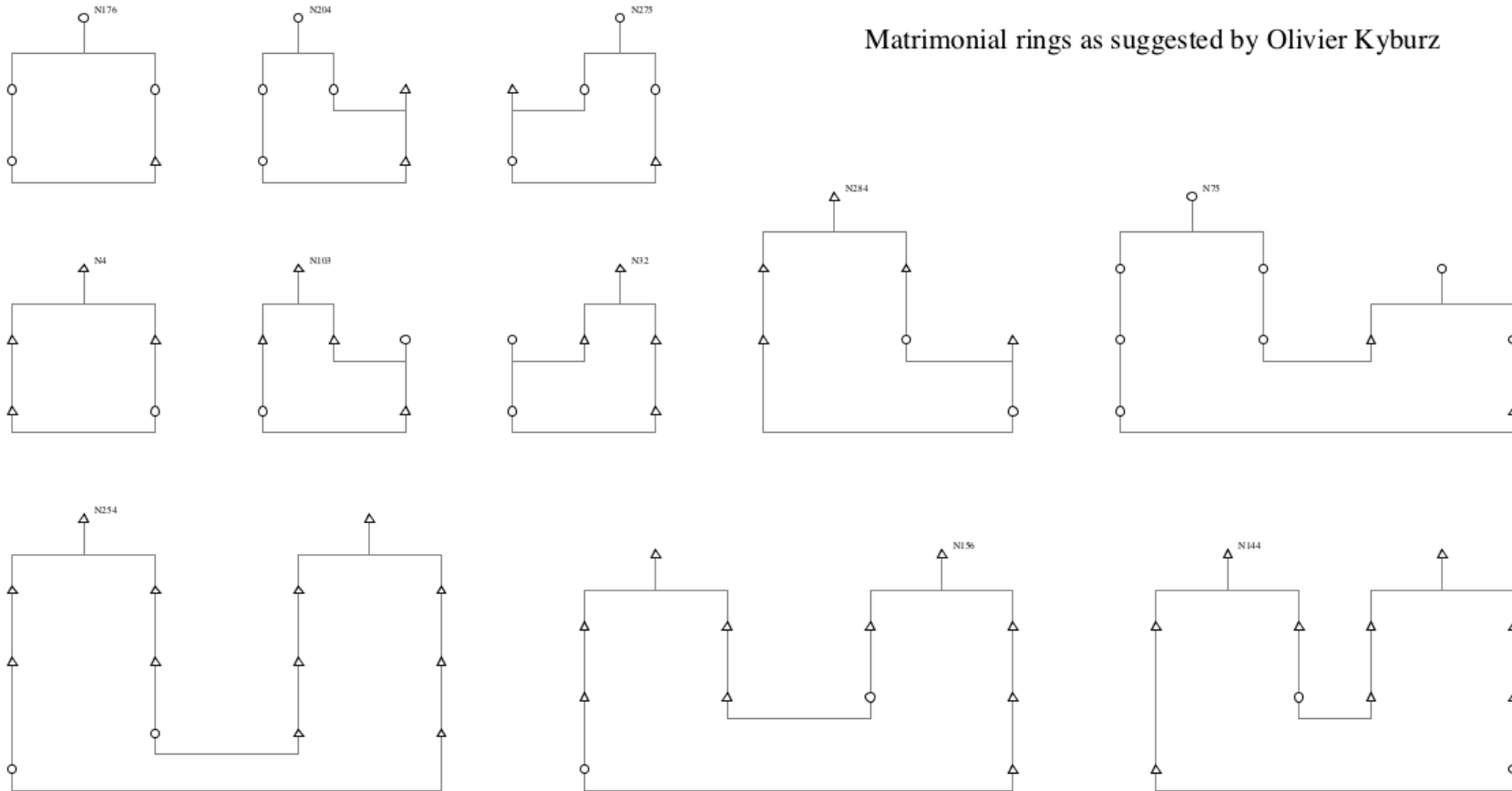


# Freeform Diagram Syntax

- By using the <id> preceding individuals can be referred to later in the string
- Here id #75 is used as a back reference to the first individual
- f:#75;N75:DDHMDSWMMM:#75:



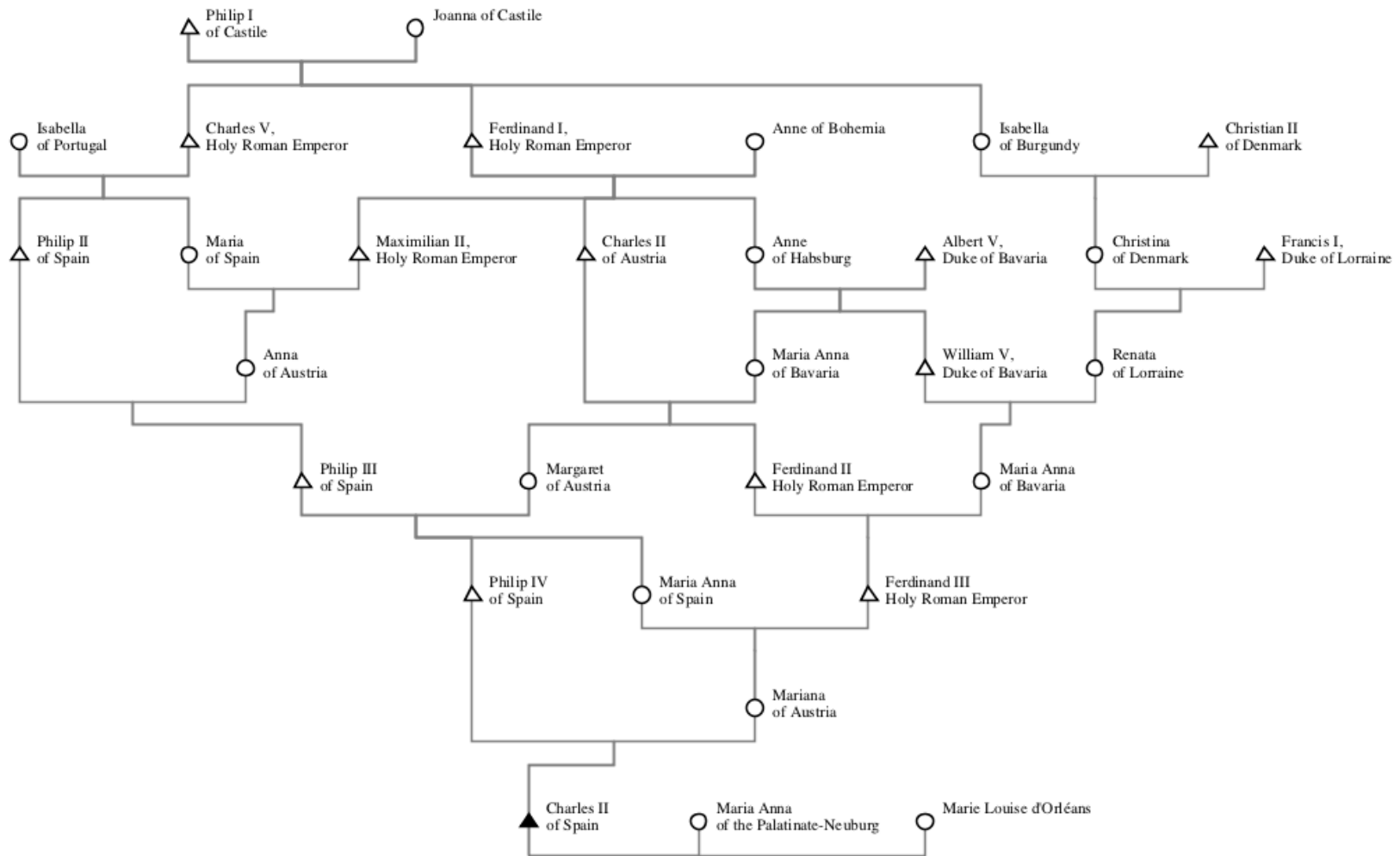
# Example: Matrimonial Rings



17 February 2012

Peter.Withers@mpi.nl The Language  
Archive, Max Planck Institute for  
Psycholinguistics, Nijmegen

# Example: Charles II of Spain



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Peter.Withers@mpi.nl The Language  
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# Potential Interoperability

There are a number of opportunities for interoperability with other software

- Sharing data via the desktop application or via the web service
- Post or pre processing with R or SPSS
- A plugin framework to allow third party code gain access to the data and the graphical output features

# R and SPSS

- The queries as used in the diagram can also be used via the web application
- This can be used in R and SPSS as a data source
- This web service is not yet publicly available but it functions as follows:  
<webservice-url><kintype-query>  
where the kintype-query for example would be E[Bob]MMZ

- Usage in R would be as follows:

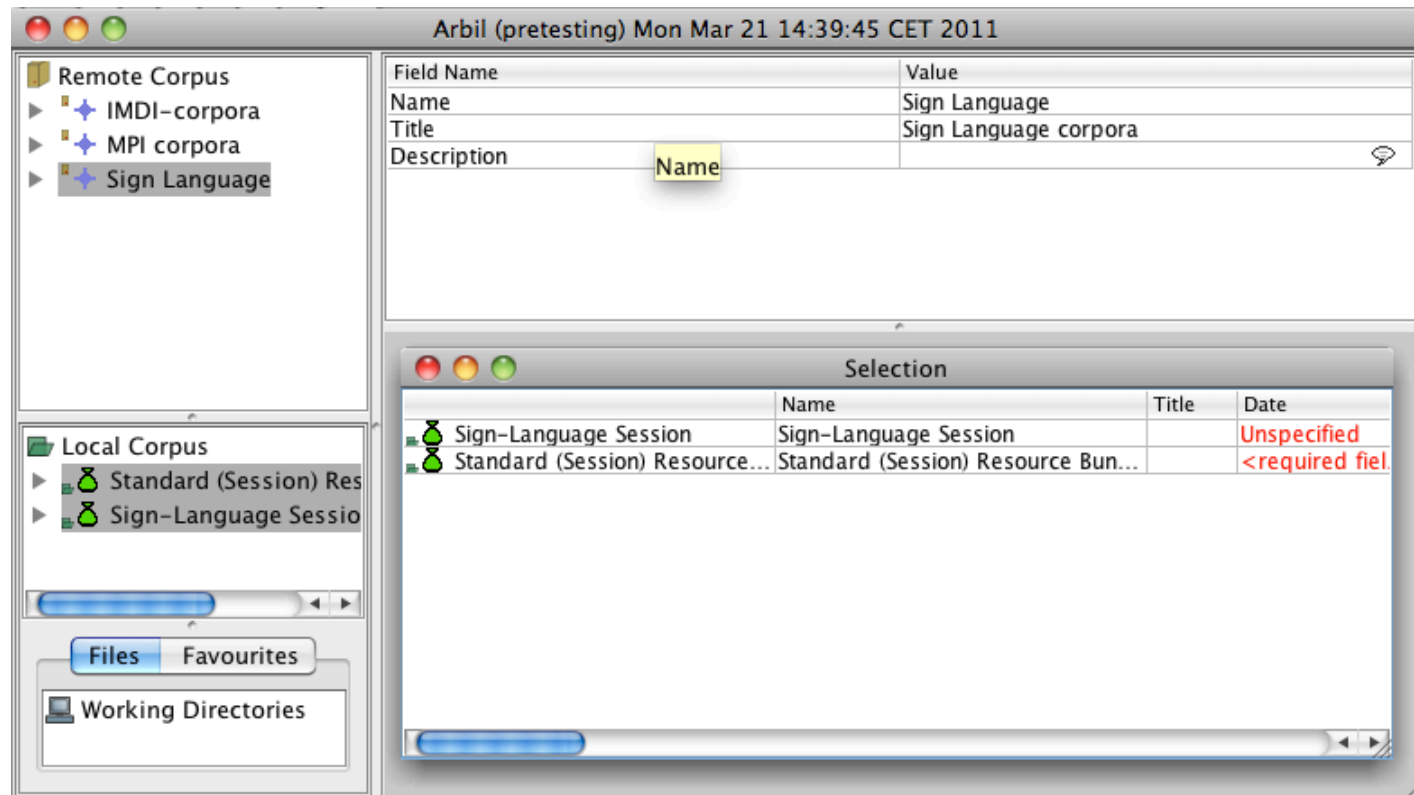
```
dataFrame <- read.table("http://mpi.nl/tls/kinship:8080/kinoath-rest/  
kinoath/getkin/csv?kts=E[Bob]MMZ",header=T)  
library(kinship)  
attach(dataFrame)  
pedigreeObj <- pedigree(id, dadid, momid, sex, affected)  
plot(pedigreeObj)
```

# Linking Archive Data

- Because this kinship application shares a lot of code with Arbil (explained in next slide), there is great flexibility in the metadata that can be consumed by it
- Many of the advantages of the Clarin metadata structures are available including the Data Category Register
- In order to link archive data many of the archive search tools found in Arbil are used
- Not all of these are ready for demonstration but they operate in a similar way as used in Arbil

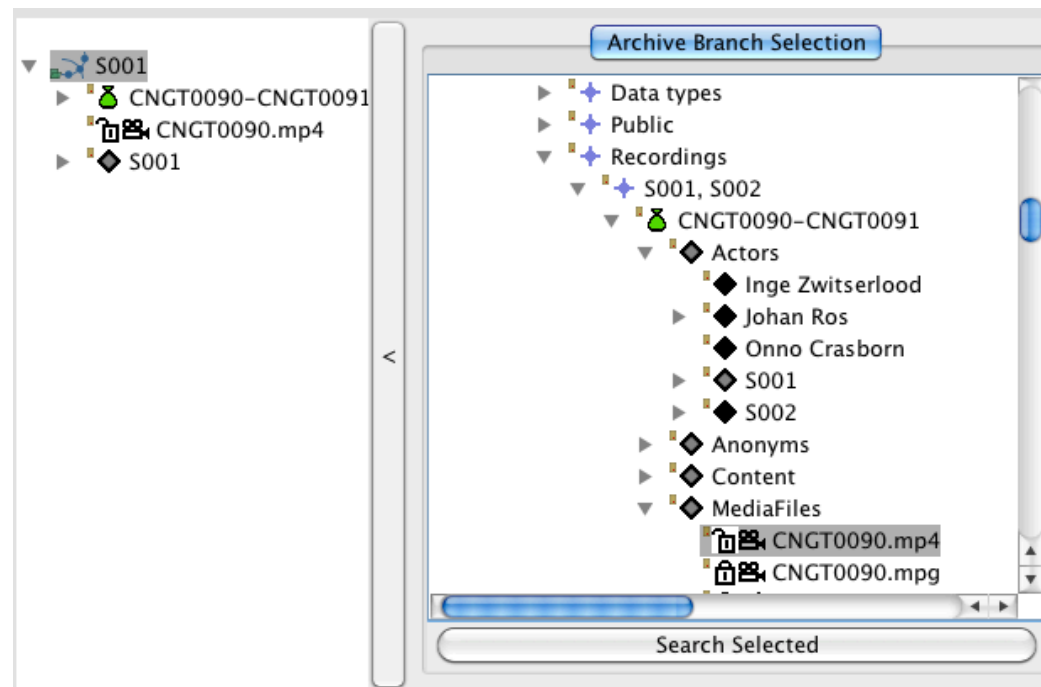
# Archive Intro

- Arbil demo...



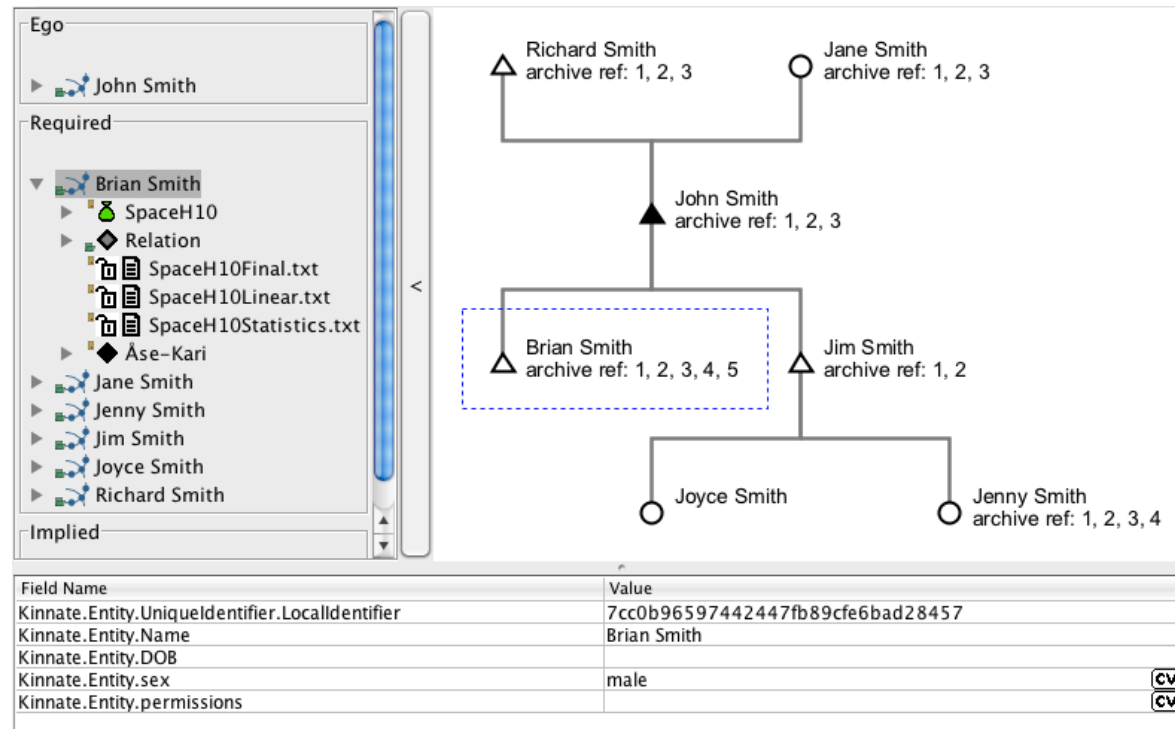
# Creating Archive Links

- By using the archive metadata to create kin entities the manual data entry is reduced



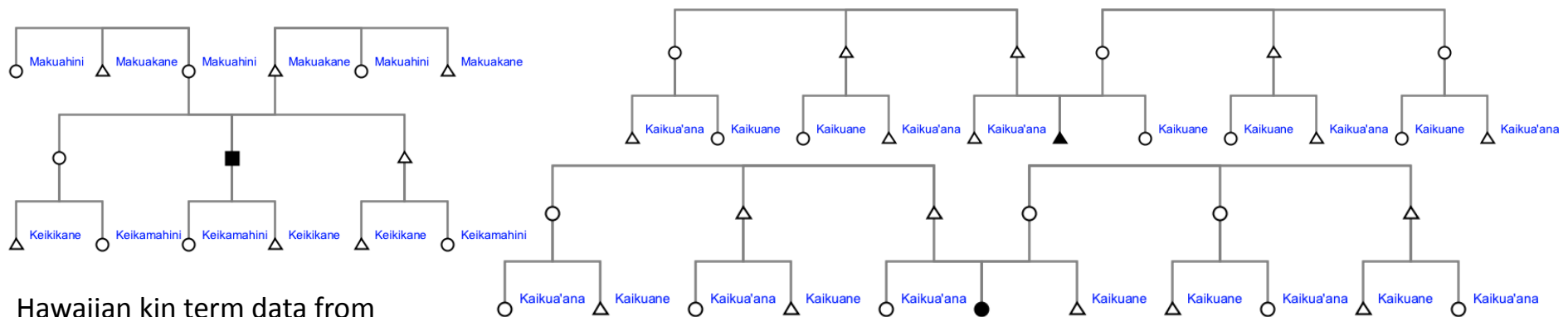
# Archive Links on the Diagram

- When added to a kin diagram the linked archive data are accessible from the kinship diagram



# Kin Terms

- Kin terms can be entered into a diagram
- A freeform diagram can be generated from these kin terms
- In the future these kin terms can be overlaid onto an existing diagram



Hawaiian kin term data from  
<http://umanitoba.ca/faculties/arts/anthropology/tutor/kinterms/hawaiian.html>

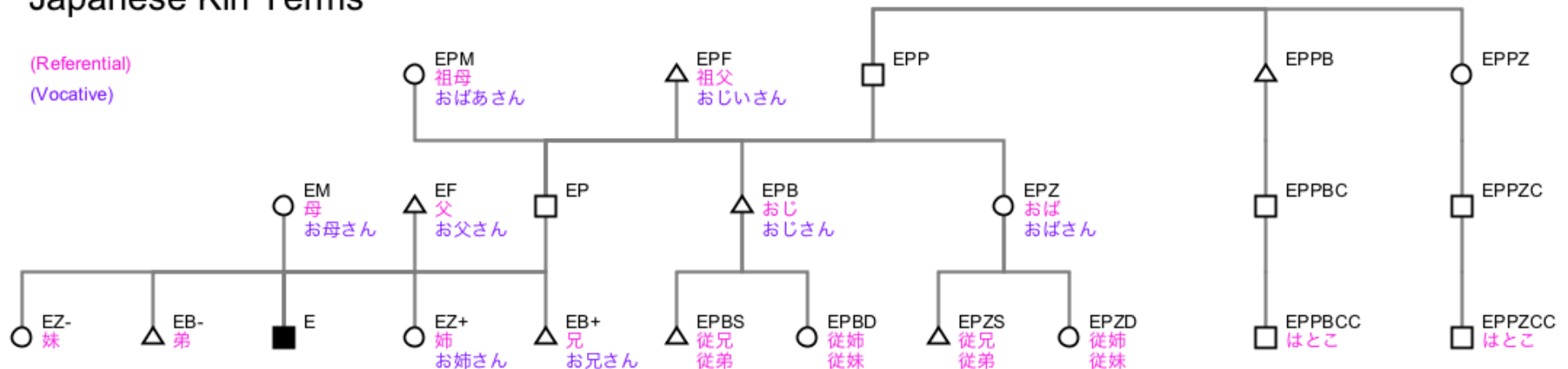
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# Comparative Kin Terms

- Multiple groups of kin terms can be shown on one diagram
- In this case some of the Japanese vocative and referential kin terms are shown on the diagram

## Japanese Kin Terms



Data sourced from <http://ja.wikipedia.org/wiki/親族> and subsequent links

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# Conclusion

- KinOath desktop is now in beta stage and already has many features with many yet to come:
- Create publishable-quality kinship diagrams;
- Query the internal kinship database constructing diagrams with links to archived data;
- Provides an efficient way to construct kinship diagrams including matrimonial rings;
- Create kin term diagrams with multiple kin term groups or language groups on the diagram;
- Provide a link from a published diagram back to the source data in the archive;
- Be financially accessible to everyone (free) .