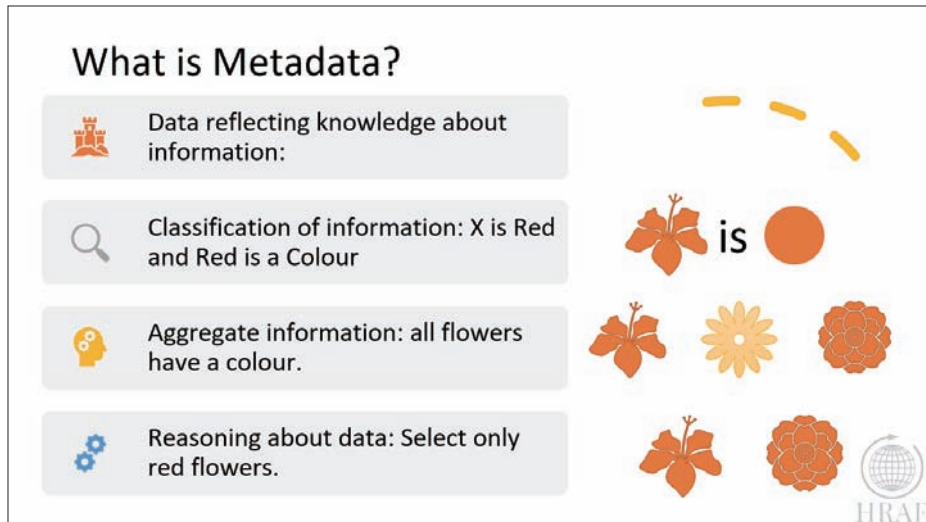





Special Lecture**Adapting to the New Era of
Intangible Cultural Heritage with Metadata****Michael Fischer**Vice-President of Human Relations Area Files

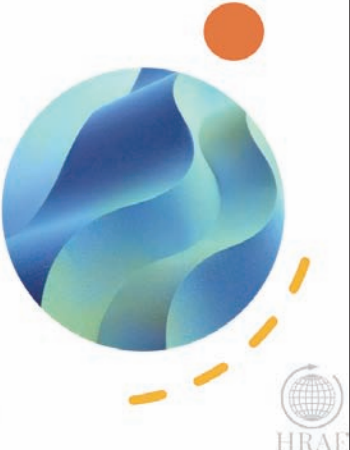
We have been in the midst of a new era of intangible cultural heritage for quite some time. Rapidly vanishing ways of life, globalisation, climate change, political change, new communications technologies, and now a global pandemic, are destroying, modifying and creating cultural patterns, activities and knowledge continuously. Although these processes have been ongoing since the first cultural expressions emerged early in the ancestry of humans, these have accelerated over the past two centuries from gradual generational change to increasingly rapid change over increasingly small sub-generational cohorts. The impacts of these processes have expanded due to major changes in communication, which can spawn and nurture new forms of sociality and shared experience without spatial contiguity. So it has become increasingly imperative to not just collect descriptive and narrative accounts of ICH, but to further document ICH within its context of use and experience.




Metadata is a relatively new term (1960s) for a very old human creation. The textbook definition is something like “data about other data” ... metadata is documentation that describes data (Research Data Management Service Group, no date). Greenberg’s (2003) functional definition of metadata is structured data that supports functions associated with a designated object. Without metadata, a record of behaviour, and even firsthand experience, is not sufficient to capture cultural practices, knowledge and skills. Metadata is often associated with libraries, museums and customer databases. But it is a far more pervasive concept: abstract classification based on perceived qualities of experience with objects and processes. Human language is the main means by which people describe and animate complex and detailed metadata about their lives and the world around them. Language reflects the juncture of bottom up generation of behaviour and presence (phenomena), and top down conceptual categories and relationships which are imposed on phenomena, which often invoke responses that modify the phenomena. The outcome is often an instance of ICH. Without explicit classification learning is difficult, and for many human domains, impossible.

What does Metadata do?

-  Empresses our knowledge about knowledge on related information.
-  Helps find information relevant to a new and novel context
-  Improves our ability to aggregate information
-  Improves capacity to automate reasoning with data




Centres of Tangible Cultural Heritage, such as museums or libraries, have metadata that is often oriented to describing and classifying individual objects - the abstract archetypal classification is often more or less metadata, a connecting thread for a set of objects. In documenting ICH the archetype is the focal unit, and specific instances are given as examples that document the archetype, rather than the focus of attention. Specific, instantiated, examples are needed, but these often serve more as a kind of metadata relating to the generic ICH these are an instance of. Where Tangible Cultural Heritage is concerned with things, and the processes of their making is secondary, ICH focuses on DOING things, ethnological processes, and specific instances are examples of ethnological archetypes. Thus metadata in ICH is largely oriented to documenting processes for making things, whether tangible, such as a basket, or intangible such as a marriage. This is more so in the digital age we now find ourselves inhabiting. Understanding tangible artefacts such as a collection of emails rely on understanding the cultural processes these are a product of.




Human Relations Area Files

- Founded 1949
- Mission: to encourage and facilitate the cross-cultural study of human culture, society, and behavior in the past and present.
- Curates knowledge about day to day life of peoples of different cultures as recorded by anthropologists and others in ethnographic writing.
- Initially using paper – now digital.
- Key metadata -
- Ethnonyms – Outline of World Cultures - OWC
- Descriptors – Outline of Cultural Materials - OCM



The Human Relations Area Files, and its parent, Yale's Institute of Human Relations (IHR), was one of the first attempts to curate ICH on a large scale. The IHR was established in 1929, and created the Cross-Cultural Survey. In 1949 HRAF was founded to promote the Cross-Cultural Survey on a broader scale. Currently the digital version of HRAF curates over 7000 ethnographic documents covering 360 societies, with a total of around a million pages. Since its inception as the Cross-Cultural Survey in 1935, metadata has been applied to each page and paragraph by professional HRAF analysts. HRAF, like so many organisations sometimes referenced as 'memory institutions', is focused on reuse of information, not just its preservation.



Human Relations Area Files: Outline of World Cultures

OWC	EHRAF WORLD CULTURES NAME	REGION	SUBREGION	SUBSISTENCE TYPE	PSF	SRS	SCCS
SI04	Abipón	South America	Southern South America	hunter-gatherers			Yes
RI03	Abkhazians	Asia	Caucasus	pastoralists			Yes
NK04	African Americans	North America	Regional and Ethnic Cultures	commercial economy			
AB06	Ainu	Asia	East Asia	hunter-gatherers			Yes

The Outline of World Cultures provides critical metadata for identifying the group associated with the ethnography. Many groups have many different names, and the OWC normalises these to a standard ‘preferred’ name. These have changed over the years, often in response to indigenous groups requests. But all the ethnonyms are retained as these are used in various documents HRAF curates. The OWC covers many more groups than the 360 societies HRAF curates, so may be of value to other providers. We will be releasing a public OWC service in the near future.




Human Relations Area Files: Outline of Cultural Materials

<p>▼ 150 BEHAVIOR PROCESSES AND PERSONALITY</p> <ul style="list-style-type: none"> 151 SENSATION AND PERCEPTION 152 DRIVES AND EMOTIONS 153 MODIFICATION OF BEHAVIOR 154 ADJUSTMENT PROCESSES 155 PERSONALITY DEVELOPMENT 156 SOCIAL PERSONALITY 157 PERSONALITY TRAITS 158 PERSONALITY DISORDERS 159 LIFE HISTORY MATERIALS 	<p>▼ 430 EXCHANGE AND TRANSFERS</p> <ul style="list-style-type: none"> 431 GIFT GIVING 432 BUYING AND SELLING 433 PRODUCTION AND SUPPLY 434 INCOME AND DEMAND 435 PRICE AND VALUE 436 MEDIUM OF EXCHANGE 437 EXCHANGE TRANSACTIONS 438 INTERNAL TRADE 439 EXTERNAL TRADE
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The other critical metadata for HRAF collection is the Outline of Cultural Materials (OCM), originally a thesaurus developed for the the Cross-Cultural Survey with 755 terms organised into groups. Each is assigned a numeric label, and it is this which is applied by HRAF analysts to the text on a paragraph by paragraph basis. As an attribute of the text, the OCM indicates what kinds of ICH processes a given text refers to.

Human Relations Area Files: Outline of Cultural Materials



304 BODY ALTERATIONS
Scarification and tattooing; cranial deformations; tooth filing and removal; piercing of ears, nose, and lips; genital mutilation (e.g., castration, circumcision, clitoridectomy); age, gender, and status differences; special techniques and apparatus; associated beliefs; etc. The term was changed from "Mutilation" to "Body Alterations" in 2000.

567 SLAVERY
Presence or absence of a servile class of chattel slaves; number of slaves and proportion in the population; activities of slaves; methods of control; treatment; stigmata; rights and privileges of slaves (e.g., to hold property, to marry, to contract debts); rights, privileges, and powers of masters (e.g., to kill, to sell, to hire out); enslavement (e.g., of war captives, for debt, for crime); slave trade; permanency of servile status (e.g., hereditary, for life); redemption (e.g., manumission, adoption, purchase of freedom, escape, asylum); intermarriage between slaves and freemen; status of children of mixed marriages; emancipation; origins of slavery; etc.



Each of the terms in the OCM is defined. These definitions have changed occasionally to reflect a more detailed understanding that has arisen over the past 85 years since the inception of the OCM.

Sample File Page, Annotated

SOURCE NUMBER	AUTHOR'S LAST NAME	SOURCE EVALUATION (Original Field Work by Trained Researcher)	DATE OF FIELD WORK	DATE OF PUBLICATION	NAME OF SOCIETY	OUTLINE OF WORLD CULTURES CODE (Including Location of Text Category)
2	Lewis	1-1	(1956-1957)	1958	MOA Somali MOA	MOA

MODERN POLITICAL MOVEMENTS IN SOMALILAND 211

think and a new view—although there is something of this aspect among the folk of Somaliland. The real struggle is between the ideal of national unity as opposed to the reality of the status of slavery and economic dependency imposed by the foreign powers.

As a whole, the Somalilands, because of their poverty in natural resources, have been little affected economically by European colonization. Natural conditions remain the basic economy, carrying with it for the majority of the population the traditional political structure and family values described above. There has been no general land industrial revolution¹ and correspondingly little technological advancement. The main source in the Somali territories are indicated here for comparative purposes of their population.

French Somaliland 210th, new town, population = 20,000 (13,000 Somali)²
Somaliland Protectorate 210th, new town, population = 20,000 (13,000 Somali)
Somaliland 210th, new town, population = 20,000 (13,000 Somali)
Somaliland 210th, new town, population = 20,000 (13,000 Somali)

The presence of a class of Indians is no new phenomenon, although the Somali element is as opposed to the Asian immigrants, has probably considerably increased since the last twenty years. Through foreign administrative measures have without doubt made possible the absence of any large foreign urban community in Somaliland the middle class of 'new men', which has arisen elsewhere in Africa in response to colonial rule, has been largely absent in terms in the administrative service. The influence of a European class community is most marked in Somaliland, the former Italian colony and the foothold for the Italian conquest of Ethiopia. But, compared with other African colonies, the numbers are small—no persons including expatriate administrators and expatriates to have over 4,000 and economic development and Somaliland, the work of the agricultural communities (the major being the Jowhar agricultural area, Somalia, S.A.S.A.) constitutes an economic development of some importance.³ But the number of Africans imported has and is light industries to suit the population of Somaliland is estimated at 40 per cent. Somaliland, 30 per cent. Somaliland who possess some agriculture, 20 per cent. Somaliland and 10 per cent. Somaliland, to the British Protectorate of 2 per cent. of the population are thought to possess industries (the north-western districts), 2 per cent. to the British Protectorate of 2 per cent. to the British Protectorate.

In the west territory of French Somaliland, on the other hand, almost half of the total Somali, Danish, and Arab population is concentrated in the relatively heavily industrialized part of Jowhar, on which the country's economic activity depends.

As a whole, the Somali have not been heavily urbanized in terms of population upon the national system. This comment goes to indicate in the field of comparison to colonial rule—no probably, however, of some significance in Somaliland.

¹ This term is used to refer to the period of 1914-1918.
² In 1956, the population of the Somali territories was 1,100,000.
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⁴ The population of the Somali territories in 1956 was 1,100,000.
⁵ The population of the Somali territories in 1956 was 1,100,000.
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Anthropologically-trained analysts subject-index the paragraph-level with 3-4 digit numbers serving as a short-hand

Each page contained topical metadata associated with the text, based on the Outline of Cultural Materials.

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In the paper files, other metadata for the page was put at the top

It contained other metadata across the top of the page. This insured that each page could be processed independently of its position in a particular volume.






New Era of ICH

- Need to document more ICH and more quickly
- New Cultural Heritage processes, digital and otherwise
- New methods available through computational means
- Preserving the range of human responses to similar circumstances
- Applications: Adaptations to Disasters, Climate Change, Epidemics, Famine, External intrusion, Resource replacement

HRAF

The main reasons for declaring a “New Era of Intangible Cultural Heritage” are a greater need due to pressure on much ICH, many new forms of ICH to document, and more potential relevance for potentially any archetype of ICH to deal with future challenges we will face. In the past ICH has largely been documented and used by communities of experts, who established various roles in applying knowledge of ICH to current issues and problems. But this is an expensive and slow enterprise. For example, HRAF requires a budget of around 2 million US\$ per annum to curate and disseminate its collection. The cost of collecting and producing the ICH HRAF curates, in today’s dollars is in the neighbourhood of a billion dollars. And employing the current model of experts, is gravely under-utilised for a resource that could illuminate many other collections of both Tangible and Intangible Cultural Heritage.

Enhanced Metadata and Information Technology

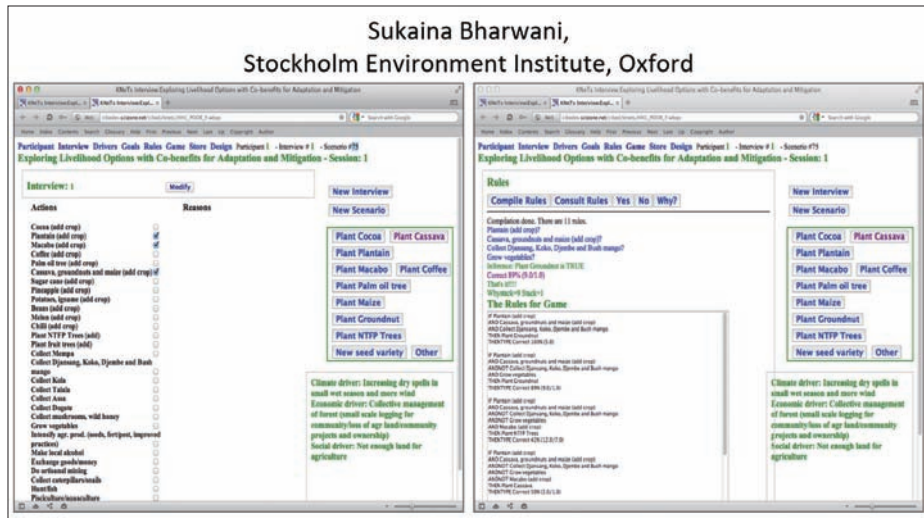
- Enhance and extend the contents of, and means of working with, networked ICH and TCH resources
- Improve interoperability with external databases ICH and TCH resources
- Expand the capability for automated processing and documentation of ICH

More specifically:

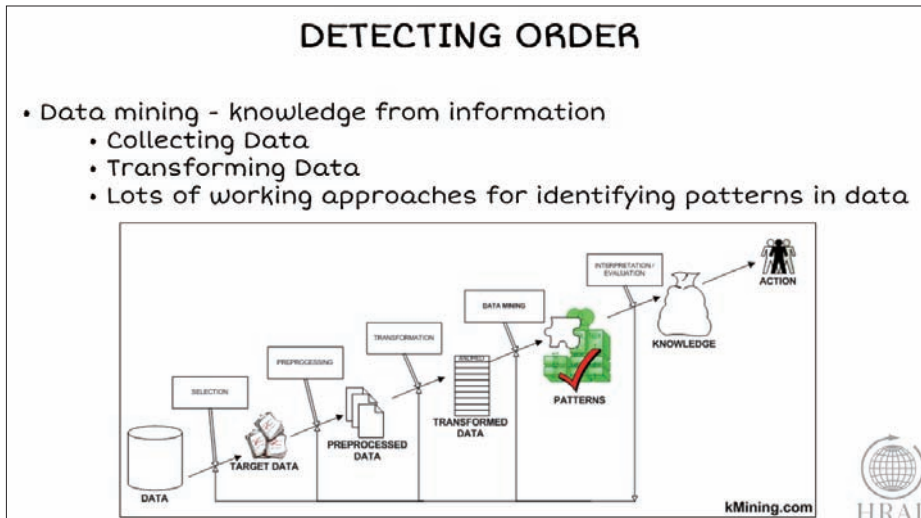
- Expand metadata using machine learning and a range of automated textual analysis
- Create metadata to improve interoperability with other resources
- Expose capabilities as services for use by other public or licensed users
- Create metadata to improve capacity for automated processing of ICH.

Metadata is part of the solution to breaking away from primarily direct expert mediation of ICH collection, processing and deployment, to an approach where all of these functions can be performed by non-experts. This metadata is derived from existing experts, for at least nominally metadata can represent the kinds of knowledge that experts possess about ICH. Just the development of solid metadata models for different ICH domains make the domains more accessible to non-experts.

But over the past two decades there has been a revolution in the development of machine learning for classificatory metadata and computational linguistics for treating embedded language artefacts as metadata. Perhaps, more critically, these computational tools can perform much better with the inclusion of expert-derived metadata, and with sufficient examples computational models can be evolved that can make similar judgements of similar quality to new data. At least in this small degree individual expert performances within a domain can be imparted to a computational model that can be applied to much more material than the expert could every process, and effectively put this expertise into the hands of non-experts to deploy for their own purposes.



Indeed, some of the most exciting prospects for enhancing ICH arise from the prospect of directing interacting with performers of ICH to create ICH data and metadata directly, rather than mediating between a performer and an expert. For example, Sukaina Bharwani, of the Stockholm Environment Institute, Oxford, has since 1998 been working directly with farmers and other local resource users to produce Expert System models of their knowledge relating to domains such as agriculture, water regulation and conservation or use of forest resources. This is done with a set of interviews, to collect initial judgements, and then iteratively on the resulting 'rules' that reflect local knowledge. The outcome is good, usually agreeing with the original source over 90% of the time, using rules that are unsequenced but which interact together to produce the outcomes.



Her results are achieved using a combination of machine learning to induce initial rules, and then iteratively working with the source to refine these rules for more general use. These machine learning tools work through relatively simple principles of classification, finding terms common enough to be useful, but not so common that excessive ‘lumping’ of cases occurs.

Computational simulations (Virtual Reality and Augmented Reality) can serve as a means of dissemination of ICH, assisting in its conservation in people, and not just in institutions. The Internet of Things is already in play, starting with phones that answer questions for you or turn on your lights. The environment will increasingly be littered with sensors and transducers to both collect information and to apply information to the environment. Machine learning and the derived metadata from this process will greatly influence both how useful (or unuseful) the IoT will be.