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## Access and the Consequences of Damage

### Introduction

This paper presents a brief outline of part of a study being undertaken for the degree of MPhil in Conservation with the Royal College of Art and the Victoria & Albert Museum, London

Conservation may be seen as the management of damage and all conservators will recognise that the requirement for access to collections lies at the heart of their work. The *raison d'être* of museum collections is to provide information and in palaeontology collections this demands access at many levels, from molecules to mammoths, and commonly with a high degree of intervention. Whether or not a balance is achieved between the level of accessibility to the collections and the information they hold, and their preservation might be assessed by considering the damage which results from access and its consequences.

### Risks and Damage

The risk assessment technique developed by Waller (Waller, 1994, 1995), provides a quantitative analysis of risks through the calculation of Risk Magnitude (MR) as the product of Probability x Fraction Susceptible to the Risk x Loss in Value. The resulting figures mean little on their own and the value of Waller's technique relies on the comparisons of Risk Magnitudes. However, much depends on the parameters chosen and

how the value of collections is viewed. The consequences of the identified risk tend to be defined as a far from tangible loss in value and are presumed to be negative and synonymous with damage. This may not always be the case. The three key events in the damage process are the Risk, the Failure Event, and the Consequences. Damage is not a measure of loss in value although loss in value may be one of the consequences of damage. In fossils, damage is the normal state and as Ashley-Smith (Ashley-Smith, 1995) observed, perceptions of damage in an object vary from one observer to another. Equally some actions or situations, perceived by some to involve risks, may have a beneficial outcome and the consequences are not always negative.

### Consequences

"Accidents" are very specific and acute failure events which result in damage to people or objects. Working in occupational health studies of accidents in the furniture industry of Finland, Aaltonen et al (Aaltonen et al, 1996, ) have produced a model based on two premises which are readily transferable to the field of conservation and its management:

Information about the consequences will motivate the prevention of accidents.

and

The information on the controllable accident costs will affect the motivation of the top management to invest in accident prevention.

# The Ten Agents of Deterioration

An issue by issue guide to the risks facing museum collections



## 2. Flood

flood became apparent a dike was constructed around the Gallery and it was decided to evacuate the basement. A round-the-clock work plan was drawn up. The plan did not take into account the fact that in the event of the basement flooding the goods lift would not operate; it was realised therefore, that the plan would have to be enacted well in advance of flooding, and was begun immediately. Upstairs galleries, the staff lounge, the board room, the lecture hall and the meeting room were used for temporary relocation of collections. Much of the Inuit sculpture and decorative art collection was not moved due to fragility. The operation was completed in less than a week and monitoring of the basement by Engineering and Security staff was ongoing. Inevitably there would be disruptions to the public

programmes and space rentals but the Gallery did not have to close completely and the operation resulted in a sense of collective 'ownership' of the collection with staff from diverse parts of the Gallery, for once, working together.

In the run up to, and throughout, this unsettling period the Manitoba Heritage Conservation Service (MHCS) has been preparing and offering help and advice to museums in the area., but fortunately, there have so far been no reports of flood damage. The MHCS is now developing a workshop for its clients on Disaster Preparedness, in readiness for the next challenge.

*Tracey Seddon  
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The consequences are depicted in tree diagrams, Accident Consequence Trees, designed to be inclusive and comprehensive and extending a consideration of the accident phenomena and cost beyond the narrow view of personal injury, damage to property and loss in productivity (Fig. 1).

Not all the consequences will be relevant in all cases. Applied to conservation, this model takes us beyond the notion of damage to a specimen as the final and only outcome of the risk and failure event and suggests a more complete view of the consequences of accidents or damage. It also offers another view of losses and gains in value.

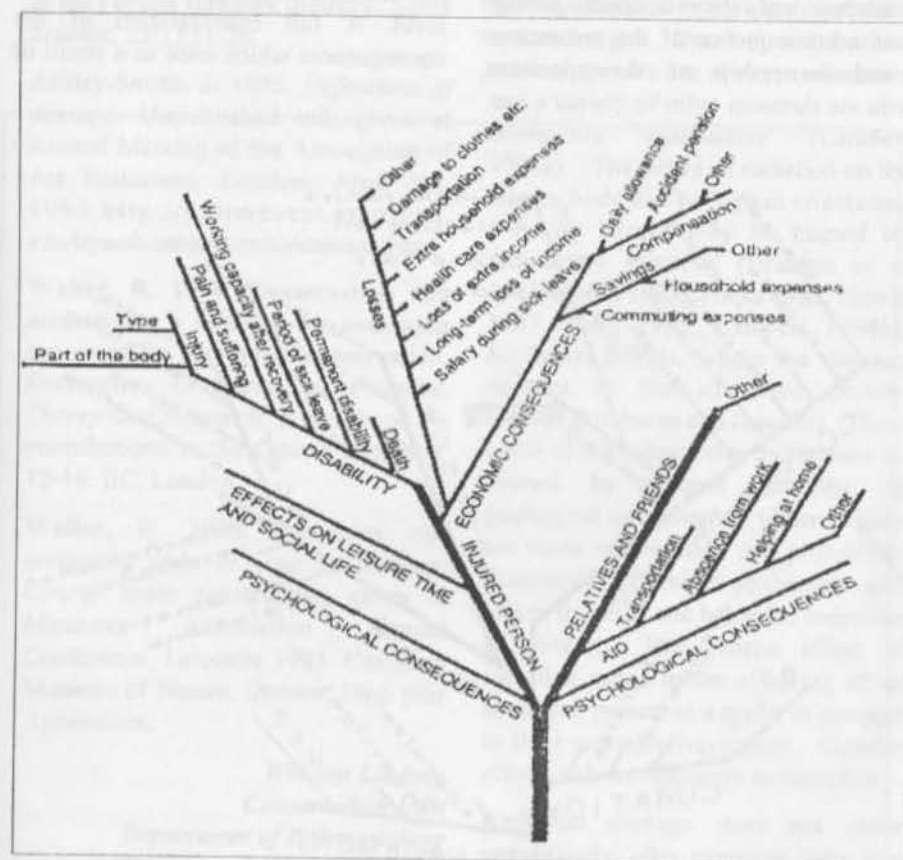


Figure 1. An example of the Accident Consequence Tree for an individual (Aaltonen et al. 1996)

Figure 2 depicts a first attempt at constructing a general consequence tree for damage to a museum specimen or collection. Some of the branches indicate losses but others, such as careers, may be gains or losses depending on their relationship to the damage. Some, such as work hours and funds can be measured in financial terms while others such as the effect on international relations, arising perhaps as a consequence of the provenance and ownership of the specimen,

cannot. Anguish, although depicted here as an expression of conservation only would, hopefully, be a more universal consequence of damage.

### Conclusions

Damage arises as a consequence of access but it is not the only consequence. Assessments of risks help us to manage access and to prevent damage, but do not consider consequences at a useful level. A full consideration of the consequences which arise as a result of

a failure event add to an appreciation of the risks and the management of the access from which they result.

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## Risk Assessment of Radiation and Radon Hazards Associated with the Mineral Collections of the National Museums and Galleries of Wales

Radioactive mineral specimens present twofold hazards to curators: radiation and radon gas. Uranium and thorium mineral species are always radioactive and a variety of other minerals are also commonly radioactive (Lambert 1994a). The action of radiation on the human body has biological effects and a health hazard may be caused by radioactive minerals (Brunton *et al* 1985, Dixon 1983, Hicks 1983, Howie 1987, King 1986, Lambert 1994b). Radiation effects, where the damage appears in the irradiated person, include skin burns and cataracts. These occur at high dose rates and cannot be caused by normal handling of geological specimens. Other effects are those where there is a probability relationship between exposure and effect, the main one being the induction of cancer. The genetic effect of radiation arises in the offspring of an irradiated person as a result of damage to their reproductive organs. Genetic effects may be dominant or recessive.

Radiation damage does not show immediately, after exposure there is a latent period before damage becomes evident, radiogenic cancer may not show for 10 to 20 years after the irradiation which is responsible for it.

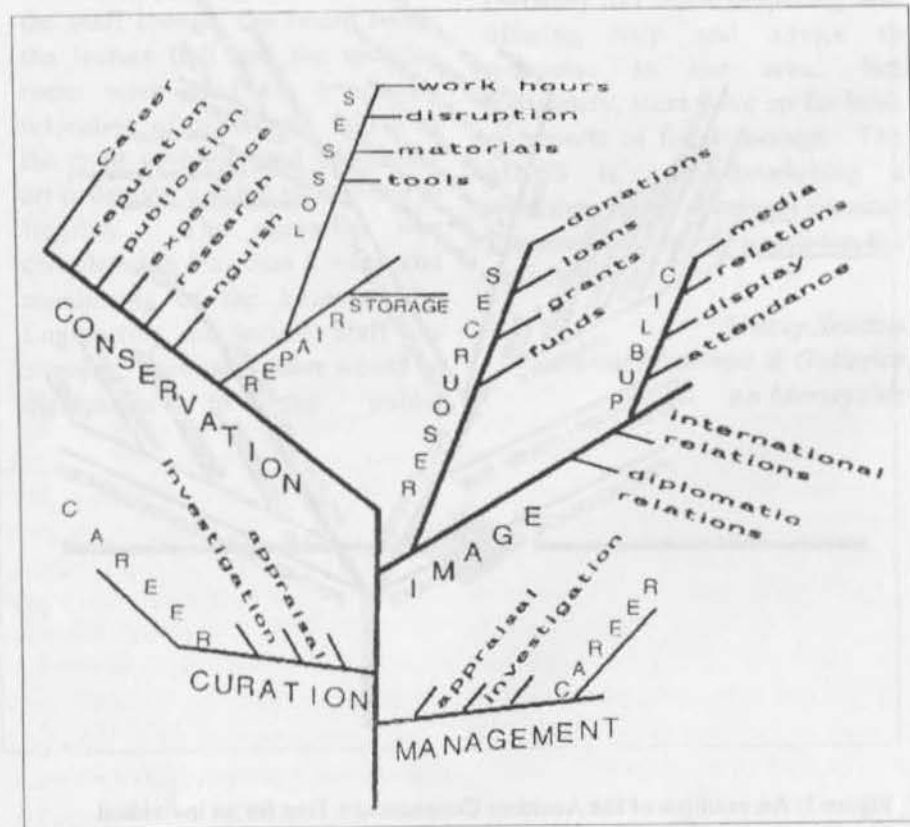


Figure 2. Consequences for the Institution