

# Defiant Objects: Research report

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## 1. Introduction

This project<sup>i</sup>, funded by SHERPA-LEAP's Media Working Group (2009-2010), was concerned with research outputs that, for one reason or another, pose problems for institutional repositories (IRs).<sup>ii</sup> We have termed these research outputs "defiant objects". IRs have, in the last 5 years, assumed a critical position within higher education institutions in the UK and elsewhere. IRs are increasingly being used for research assessment purposes, such as the Research Excellence Framework, REF (Day 2004; Carr, Weal and White 2010). They are also a very viable, arguably the most viable, route for meeting funders' open access (OA) mandates by facilitating Green open access (Harnad et al. 2008). At the same time, IRs help raise the visibility of particular research outputs as well as research in general (Robinson 2009).

The rise of interdisciplinary subject matters and methods, as well as the recognition of arts-based research has been expanding the repertoire of research outputs. These are no longer limited to traditional, text-based objects such as journal articles or monographs, but nowadays

include events, films, websites, exhibitions, apps and so on. IR systems such as EPrints and DSpace were originally conceived with traditional research outputs in mind and have required development or adaptation to accommodate these interdisciplinary or unconventional research outputs. In the last 5 years, a small number of projects, most notably the Kultur Project<sup>iii</sup> and its offshoots Kultivate and KAPTUR, have looked at how to represent arts-based research “in a coherent and valuable way” (Gray 2009). The Media Working Group has similarly grappled with some of the more practical issues that arise when multimedia research outputs from other disciplines are recorded and deposited within IRs. They have produced a draft metadata guide (Brown 2009) as well as an overview of file formats (MWG 2009), which are both available for download via the Defiant Objects blog.<sup>iv</sup> The current project at Goldsmiths follows on from this work by pursuing two interconnected objectives, firstly: understanding what makes some objects more difficult to deposit than others, i.e. what constitutes a defiant object; and secondly: making the deposit of defiant objects easier; supporting the deposit of defiant objects through a decision-making guide (see Appendix B).

The target audience for this research is primarily repository managers, those planning customization of their repository to accommodate a wider range of research outputs, for example by the ‘Kulturisation’ of an EPrints repository, and researchers and staff seeking help in making decisions about how to deposit ‘defiant objects’ and how to describe them.

This report is based on open-ended, unstructured interviews and conversations with IR staff as well as on reviewing IR-focused mailing lists and IR contents. We collected and analysed examples of defiant objects in institutional repositories. Examples of defiant objects were analysed as mini-case studies and explicit as well as implicit problems were noted for each. Appendix A contains a selection all of the IR items analysed. Through open coding and cross-case analysis we then developed a typology of defiant objects. In addition, we looked over research projects currently being carried out across the University of London in order to get a sense of the different kinds and breadth of research outputs produced. We also attended relevant events, such as the POCOS<sup>v</sup> symposia, and participated in related research projects such as KAPTUR<sup>vi</sup>. Recommendations and guidelines were subsequently formulated on the basis of this typology as well as on experiential evidence gathered in interviews and conversations. The lessons were then synthesised into the decision-making guide, which is attached in Appendix B. The guide was designed by Hyperkit<sup>vii</sup> and is distributed freely via mailing lists and Goldsmiths’ institutional repository, Goldsmiths Research Online (<http://eprints.gold.ac.uk>). In this report, we will describe our methodology and summarise our findings before detailing a typology of defiant objects and presenting our recommendations in relation to defiant objects.

## 1.1 Limitations

The research and its recommendations are very much focused on arts-based research as well as the IR software EPrints. This is because the research team has most experience with these subjects due to institutional affiliation and because the EPrints system is the most widely used IR system within the University of London. Arts-based research is also where one is likely to find many research outputs that could be seen as 'defiant'.

(NB. The report presents recommendations only – users should always consult their institutional guidelines.)

## 1.2 Findings

It is important to note that problems are not inherent in the objects themselves. Instead, they arise in situated practices due to a confluence of different factors: system specification, skill level and willingness to engage with the depositing process, conflicting guidelines, inadequate user interfaces, institutional requirements and different understandings and definitions of "research output" and "institutional repository". In short, defiant objects are technically, socially and conceptually tricky. Nevertheless, we do recognise that some digital objects and certain research outputs tend to be more difficult than others. The former commonly become difficult due to large file sizes, multi-media file formats or when they consist of multiple files of multiple file types. Research output is generally difficult when it does not correspond to the traditional genre of recognised research outputs (journal article, monograph, etc.).

Perhaps the most unexpected outcome of our research into the contents of various repositories was that many text-based research outputs could constitute defiant objects. While non-text-based research has so far found little room in IRs, objects such as book reviews, translations and grey literature can equally confound IRs. This, we suggest, is due to lack of clear guidance but also because of a lack of appreciation for these objects as research output. This latter point is in fact a considerable hindrance in facilitating inclusion in IRs, most of which remain wedded to the notion of "research output" as defined by the narrow parameters of certain programmes such as the REF or its previous instantiation, the RAE, and, subsequently, the wider academic merit system. We would urge for a more inclusive, open definition of "research output" while also stressing the importance of relevant and complete information and metadata. Following this advice will, on the one hand, make for a better resource: End-users will be presented with a comprehensive and heterogeneous archive of research activities. On the other hand, researchers themselves will be able to accumulate a varied, easily accessible portfolio of their work.

The research brought to light considerable differences between repositories and touched on fundamental questions pertaining to the role and function of IRs. Goldsmiths Research Online

(GRO), for example, identifies itself as a digital, publicly accessible archive of research produced at Goldsmiths. While it is used for formal research assessment, its primary function is that of an archive. This is further emphasized by the fact that GRO is managed by the Library, as part of its research support strand which also includes its Special Collections. Deposits into GRO are done directly into the EPrints system by researchers, whereas most institutions interviewed employed automated feeds via current research information systems (CRISes) or publications database systems (“upstream databases”) that, in turn, receive data from external sources such as PubMed or Web of Knowledge. Here, an obvious issue is the matching of metadata fields across the different databases – an issue further compounded by the fact that there is not much crossover between IR staff and staff responsible for the upstream databases. Repositories can contain many different fields, whereas CRISes and publication databases usually restrict their fields to citational data. Where such upstream systems are in place, researchers rarely deposit non-text-based items into the repository, though much of their non-text research may be represented in other places such as staff web pages or on project websites and blogs. Retrospectively enhancing records in the IR, given the rate of submissions and the general squeeze on staff time, may not be feasible for IR staff. Researchers could, however, be encouraged to review and add their own records, and there is potential for strategic review of the purpose of the institutional repository as the case for open data develops.

Most IRs we reviewed contained an item type (category) titled ‘Other’. It was there that we looked first for defiant objects as we expected that this item type would be chosen for research output that somehow escaped traditional categorisation. We found translations, grey literature and blog entries but also projects and conventional research outputs that could have been placed in existing categories such as ‘book’ or ‘conference paper’. In our interviews with repository staff we encountered a similar issue: Often the difficulty wasn’t so much of a technical (i.e. how to deposit) but of a conceptual nature, (i.e. what to deposit), what constitutes a ‘research output’ or, fundamentally, what constitutes a ‘deposit’. The support provisions for IR users that we reviewed, such as help pages and online guides, only addressed practical issues: how to log on, how to proceed through the deposit process or how to prepare files for upload. This is why we decided to create a basic and, hopefully, common sense decision making guide that addresses conceptual, as well as some technical, questions.

## **2. Typology of defiant objects: What constitutes a difficult deposit?**

The initial question that guides this project centred on the nature of difficult or ‘defiant’ objects. These are objects that, for whatever reason, have proven difficult to incorporate into existing IR structures and systems. We used three methods to understand their composition: Firstly, in unstructured open-ended interviews with repository staff we enquired about any

problems they encountered in depositing or reviewing IR items. In reviewing these experiential accounts, we looked out for common or reoccurring problematic situations. Secondly, we examined the research outputs of individual researchers and departments across the University of London (and beyond) and collected examples of defiant objects, i.e. objects that can be regarded as 'research outputs' but that are not text-based and/or do not appear in the repository. As we expected, the research landscape that emerged in these explorations was extremely rich and heterogeneous. While most of the ongoing research projects we reviewed had produced at least one 'conventional' research output, such as a conference paper, they had also created a host of materials that, while not easily perceived as traditional research output, would nevertheless warrant inclusion in IRs for the purpose of preservation, dissemination and 'representation', i.e. evidencing the research's multi-faceted productivity. Examples here included workshops, interactive maps, a novel terminology for textiles, computer models, new research method, videos, specialised software, specialised terminology, archives, registers, websites, audio CDs, documentation for CDs, and a robot that draws portraits.

Lastly, we examined Institutional Repositories across the University of London, particularly focusing on item types 'other' or 'miscellaneous'. Appendix A provides examples of such defiant objects in IRs (including projects, artworks, letters etc.) and aside from core metadata; each example is annotated with a number of 'issues' we identified. The majority of items in these categories were misidentified rather than genuinely escaping the given list of item types. Nevertheless, a considerable number of items escaped the given categories and/or posed some problems in properly recording them in the IR. Certain kinds of outputs made a regular appearance in the 'Other' category, such as: blog posts, newspaper and magazine articles, broadcasts, grey literature, resources and materials, book reviews, letters.

There is an abundance of incomplete citations in IRs where the only information given is author name, title and date. This has a detrimental effect on end-user comprehension. Ideally, users of the IR (i.e. the public) can easily ascertain what the item is (e.g. an exhibition, a book, etc.) without having to open the file (if there is a full-text item attached to the record), though most of these very skimpy records did not have any full-text items attached either. We have, however, found that this is not always caused purely by insufficient or incomplete metadata. Some items, especially in the 'Other' category, but also some non-text-based research outputs, need more metadata and/or a description in order to make sense. While it might not be prudent or practical to have an exhaustive list of item types to try and cover every eventuality, it would be beneficial to extend this beyond the core set that caters mostly for text-based outputs. Intelligible and complete metadata requires both technical provisions (i.e. relevant metadata fields in the deposit process), and an understanding of the function and importance of metadata. Here, non-text-based research is markedly more affected as most IR systems are usually set up for conventional output and do not allow, or indeed,

encourage the recording of information such as dimensions, duration, materials etc. Nevertheless, insufficient or incomplete metadata affects text as well as non-text-based research. More generally, the issue also suggests a lack of understanding of how metadata provided at the point of deposit will translate into the public record. Academics are very aware of the importance of citations of their work, so to make sure that works deposited in IRs meet citation standards is in everybody's best interest. Adequate description of the work will improve the experience of using the IR for everyone, even if that means all the extra information needs to be included in the abstract or additional information fields.

A recurrent issue across IRs, but also for researchers pertains to multiple parts, variants and versions of work. In some cases IR records referred to one version of a work, while the upload consisted of another. This is a common practice for journal articles where often the upload is the post-print version whereas the actual record refers to the published version.<sup>viii</sup> For non-text-based research output, the relationship between upload and record can often be extremely tenuous and hence requires additional metadata for the item being uploaded. An example of this might be a record describing a site-specific generative sound recording, which is accompanied by a photograph of the site, rather than (or in addition to) an audio file. Or, a record for a wall painting is categorised as item type 'Image' in the repository because a photograph of the wall painting accompanies it, rather than item type 'Artwork'. Clearly, the depositor in this example became confused about the nature of the item being recorded: Should the record describe the actual file being uploaded or the content documented by the file? Also, some records do not identify a single research output but refer to multiple research outputs. At the same time, ongoing or multi-sited work was often difficult to discern, either because individual items were not discernibly related in the IR or because information about other parts or variants was 'buried' in one record.

## **2.1 Institutional perspectives on difficult deposits and defiant objects**

Issues that have arisen out of conversations with IR staff pertain to "defining the nature of an output" as one respondent put it: When a researcher has curated an exhibition which also contains the researcher's artwork, should they create a record for the exhibition and/or individual records for each artwork? While these questions may invite individual responses due to the way in which each researcher views and therefore represents their work, they are also implicated within wider institutional concerns about research evaluation: "We're having to decide where items fit best to help give us the best return on our outputs." These difficult questions are often compounded by systemic or technical shortcomings, such as the absence of (simple) hierarchical relations between items in an IR. In addition, the available item types might impede meaningful categorisation of objects. This is of course a familiar issue for anyone involved in cataloguing: Should item types proliferate or should there be a stable core set? Should there be sub-types within the stable core?

There is a definite case for the dynamic mapping of item types to reflect the different purposes that IR records are used for, whether that is REF, to push out to staff publication pages, as an archive, etc.

Another set of issues relates to the upload: What can be uploaded to a repository? What is the relationship between the file uploaded and the record? What formats should be uploaded? What is more important, end-user delivery or quality? How can adequate playback of multimedia content be ensured? What about copyright? More fundamentally, the fact that researchers can upload actual files is not well understood. Similarly, more information is required on the relationship between the upload and the record as well as the kind of material that can or should be uploaded. A frequent issue is the insufficient level of metadata supplied by depositors as well as the consistency of descriptions and terms.

There are several ways in which authorship can become an obstacle in the deposit process. Confusion remains where the depositor is not actually the (sole) 'creator' of the work deposited, such as with artist researchers depositing exhibition catalogues that feature their work but were not written/edited by them. Collective identities are another difficulty. In some cases, the researcher might produce a work under a group identity. Here, recording one's own name might be inappropriate, although group memberships can fluctuate and so putting the group name might not be appropriate either. (Ippolito 2008).

According to our interviews and conversations, repository staff spend a considerable amount of time checking versions of uploaded documents, referring to SHERPA/Romeo and verifying copyright issues. Contacting researchers and requesting pre- or post-print versions of texts is the most time-consuming task. In summary, the following issues relating to IR deposits emerged in institutional responses:

1. Definition and demarcation of research output
2. Definition and selection of appropriate category/item type
3. Understanding of 'versions' (published, post-print, pre-print)
4. Copyright
5. Multimedia upload and playback
6. Consistency in descriptions and definitions

On the basis of this, we have drawn up the following typology of defiant objects:

- a. Non-text-based objects
- b. Other text-based objects
- c. Multiple/iterated objects
- d. Multimedia uploads

Each of these will be explained in the following section. In addition, we have identified a set of issues for each object.

## **2.2 Non-text-based research output**

Non-text-based research outputs are primarily associated with creative research and can include objects such as paintings or drawings, films and videos, exhibitions, designs, performances, textiles, ceramics, compositions, scores, plays, installations, sound art. But natural and physical sciences equally produce a range of non-text research outputs such as animal models, cell lines or physical models. At the same time, many traditional disciplines like sociology and anthropology have expanded their repertoire of research outputs to include exhibitions, archives and films. Because IRs have primarily been designed to hold bibliographic references for text-based research, any non-text-based research output can be challenging to record. Therefore, departments such as Art, Design, Drama, Architecture, etc. usually have a less prominent presence within IRs.

Non-text-based items pose both a technical and a conceptual challenge: IRs as well as more upstream systems do not allow the proper recording of these items. Concurrently, 'research output' is often very narrowly defined as only peer-reviewed journal articles and monographs.<sup>ix</sup> These oversights can mutually enforce each other. Some of the key problems encountered when depositing non-text-based items comprise the definition of research outputs, the understanding of the role of IRs (less evident than for journal articles and books), the available list of item types, the metadata schema, complex works that are made up of multiple parts of different media, and the meaning of 'full-text' in relation to non-text-based research. The last two also bear on questions of copyright which is often more difficult to ascertain when the work (and its documentation) involves multiple creators and media.

Most IR systems permit the uploading of multimedia objects such as images, videos or sound files. While these can pose a number of technical challenges relating, for example, to file formats or file size, there are also more abstract considerations pertaining to the description of the upload (i.e. the metadata provisions for uploaded files) and the relationship between the upload and the record as well as to the recording of this relationship.

## **2.3 Other text-based research output**

Aside from articles, books, book chapters, and conference papers/proceedings there are a number of text-based items that can elude conventional classification. These include creative writing, pamphlets, exhibition catalogues, book reviews, translations, scholarly editions, grey literature, and magazine articles, as well as articles for blogs and online publications. As with non-text-based research, problems occur due to the restricted definition of research output,

the limited list of item types and the lack of appropriate metadata fields. REF 2014 has included the object 'working paper' in its permitted output types. This is described as a paper "often written in the style of a journal article" and "usually made freely available on line [sic]" that "may not have been peer reviewed, and has not yet been formally published".<sup>x</sup> This suggests another difficulty, one that affects the full range of text-based items, namely publication date. Given the upcoming research assessment as well as the trend to integrate staff pages with IR contents (e.g. publication lists on staff pages fed directly from IRs or upstream databases), researchers are putting more and more forthcoming or in press items into repositories. Similarly, working papers or pre-prints suggest multiple publication dates: the date when it became available online ('online first'), the date when it became available online in the final edition of the online journal, and lastly, the date when it first became available in the print edition of the journal. Generally, the citation created in the IR refers to the final published printed version, though the actual record might be created prior to final formal publication, hence a number of data such as date, page range, DOI and, sometimes, final title won't be known yet. The result is incomplete or inaccurate records that, due to the public nature of IRs, quickly proliferate and may affect citation of the work.

#### **2.4 Multiple/iterated research output**

One common problem pertains to the distinction between versions or the distinction between work and surrogates. This difficulty often underlies questions of whether one can or should deposit a particular output. Once again the problem can be understood in both technical and conceptual terms. Regarding the former, no off-the-shelf IR system in use at the time of this research permits hierarchical relationships between items. In addition, appending to or nesting related items within a record inhibits findability, as browse functions only take into consideration top-level data provided for the main record. For example, including bibliographic details of an exhibition catalogue within the record for the exhibition neither creates a citation for the exhibition catalogue, nor will it appear in any browse views for the depositor. In this case, we would recommend that exhibition catalogues are deposited as separate items, especially given their significance for artists who customarily include exhibition catalogues that mention their work on their CVs. Conceptually, the problem presents itself as a discrepancy between the realities of the research process and the affordances of the IR system in reflecting these. Plans, models, studies, position papers, sketches, and design objects often function as works in their own right, yet they are also often one part of a larger project or piece. So, if the repository software has the capacity to link records into projects, then this should be exploited.

While library and archive cataloguing has developed sophisticated schemas for recording relationships between objects (such as FRBR and CCO), IRs conceptualise 'research outputs' as single units which can make it difficult for depositors to decide what to deposit. A research output might consist of (temporally and spatially) separate parts. A site-specific

installation can include a performance, a film and a range of ephemera such as posters, pamphlets and cards. Similarly, an exhibition can tour or a composition be performed or broadcast many times over. In these instances, we are inclined to leave it up to the researcher to make a decision as to what to deposit. Whereas we do encourage the deposit of such 'process materials' as it enriches the understanding of research, we also refer the researcher to individual institutions' IR policies.

### 3. Recommendations for defiant objects

In the following, we detail our recommendation on the basis of the deposit guide that we produced. This guide is designed for both researchers and IR staff. Recommendations are based on the issues identified during research as well as on the defiant objects collected in the course of this research. The guide is divided into 4 sections: glossary, deposit decisions, item types and defiant objects. Each section contains concrete instructions as well as general recommendations. Generally, we recommend clearer definitions of key terms, an augmented list of item types and accompanying metadata fields, more comprehensive instructions for uploads and, most importantly perhaps, greater attention to the conceptual questions around research outputs and institutional repositories.

#### 3.1 Definitions

Some of the most basic terms and concepts are not necessarily understood, or understood in the same way. For researchers who are new to the IR world, some of its most common terms – 'full-text', 'deposit', 'item', 'upload' – can be incomprehensible. For other terms, such as 'research output' or 'version', there is no consensus – neither global nor on a local scale within institutions or even within IRs. Similarly, questions such as what constitutes an item or what sort of material can be uploaded, simple as they may be for IR staff, are often difficult for researchers to answer. For IR staff we would therefore recommend the use of common terms and descriptions in the deposit process and IR descriptions and guides. We suggest the inclusion of a glossary that remedies unfamiliarity with a) IR and Library terminology and b) specific language around text-based output (such as 'citation', 'abstract' or 'full-text'). We have devised the following glossary, which is included in the decision-making guide:

**Abstract:** Brief summary or description of your work.

**Citation:** Condensed description used for referencing your work and derived from the record you create.

**Deposit:** An item consisting of record (citation) and upload entered into the repository.

**Digital Object Identifier (DOI):** Character string that uniquely identifies a digital object such as a journal article or book.

**Discoverability:** The quality of being easily findable and visible. Institutional repositories enhance this for their contents by providing well-structured data.

**Full-text:** Entire work, or version of work, uploaded as a digital file to the repository.

**Green Open Access (Green OA):** Deposit (self-archiving) of your work in a publicly accessible archive such as an institutional repository.

**Grey Literature:** Written material not commercially published, e.g. reports, white papers.

**Item:** A record in the institutional repository identified by a unique and stable web address (called a 'URI'), e.g. <http://yourrepository.ac.uk/1234>.

**Institutional repository (IR):** Online public archive of research outputs managed by your institution.

**Metadata:** Data that describes your work, e.g. title and date, and forms the record.

**Open Access (OA):** Free availability of research outputs online.

**Post-print:** Final draft author's manuscript including revisions after peer review but prior to proof correction and typesetting. Please note that not all publishers use the same terminology.

**Pre-print:** Draft author's manuscript prior to peer review.

**Related documentation:** Additional material accompanying your work or parts of your work that can be uploaded, e.g. press release, photographs, trailer etc.

**Upload:** Associated digital file that you append to your deposit, this can be the full text and/or related documentation.

**Research output:** Work produced through your research, e.g. articles, exhibitions, performances, film.

**Variants:** Related research outputs that differ to such an extent as to warrant separate deposits, e.g. installations in different locations.

**Versions:** Closely related instances of research output for which one deposit may suffice, e.g. draft and published version.

### 3.2 Enhanced list of item types and metadata

We would recommend that research output be understood in more expansive ways to include research that goes beyond text-based objects. IRs, if properly adapted, can host a much broader scope of research outputs and potentially data too. In order to properly develop and use this scope, IRs need to actively facilitate the deposit of non-text-based outputs. In reviewing research outputs across departments within the University of London as well as items designated 'other' or 'miscellaneous', we drafted an extended list of item types. This is by no means exhaustive but would go some way towards expanding the existing scope of IR deposits. The recommended item types are, in alphabetical order, as follows. Recommended metadata for these item types are provided in the next section:

- Article (Journal Article, Book Review, Editorial, Letter)
- Artwork (Painting, Sculpture, Photograph, Installation, Multimedia)
- Book (Monograph, Edited Book, Scholarly Edition)

- Book Chapter
- Conference Item (Conference Paper, Conference Proceedings, Conference Presentation, Conference Poster)
- Creative writing
- Design & Architecture
- Digital Object
- Exhibition
- Moving Image
- Other Writing (Working Paper, Technical Report, Manual, Governmental Briefing)
- Patent
- Performance
- Sound & Music (Composition, Recording, Audio Realisation)
- Technology, Technique & Device

Metadata based on simple Dublin Core (DC) is often not sufficient for describing scholarly work (Allinson, Johnston, and Powell 2007), let alone creative, multimedia works. Yet, while there are many sophisticated schemas to describe artistic and cultural objects, IRs do not have to meet the same documentation standards as archives and museum collections.<sup>xi</sup> Resources are limited and archival standards require a high degree of professional oversight. Furthermore, IRs largely rely on the idiosyncratic self-archiving practices of individual researchers or error-prone automated digests and only a small number of IR staff for reviewing and checking records. We therefore recommend approaching metadata with a view to end-user comprehension, that is, the metadata should allow users to know what it is that they are looking at. The core set for all items should include title, creator(s), contributor(s), abstract/description, date or date range, location and publication, funding information and keywords. Recommendations of additional metadata for individual item types include format, technique, duration, dimensions, media, genre, and copyright holders.

Additional metadata recommended for each item type:

**Article:** ISBN, ISSN (print and online), DOI, URL, peer reviewed yes/no, pages, volume and issue number, publisher name and location, PubMed ID.

**Artwork:** Material, technique, dimensions, collection name and/or current location, acquisition date, copyright holder(s), media.

**Book:** ISBN, URL, peer reviewed yes/no, pages, publisher name and location, PubMed ID.

**Book Chapter:** ISBN, URL, peer reviewed yes/no, page range, publisher name and location, PubMed ID.

**Conference Item:** ISBN, ISSN (print and online), DOI, URL, peer reviewed yes/no, pages, volume and issue number, publisher (name and location), PubMed ID, conference name, location and date range.

**Creative Writing:** ISBN, URL, peer reviewed yes/no, pages, publisher name and location.

**Design & Architecture:** Material, technique, client, location, purpose and application, copyright holder(s), media, manufacturer.

**Digital Object:** Format, version, type/genre, publisher, purpose and application, platform.

**Exhibition:** Date range, location (venue name, city and country), group/solo, exhibition catalogue, media.

**Moving Image:** Format, technique, publisher, duration, collection, screenings and broadcasts (event name, location, date), copyright holder(s).

**Other Writing:** ISBN, ISSN, URL, peer reviewed yes/no, pages, publisher name and location, commissioning body, DOI.

**Patent:** Country of publication, patent kind code, patent registration number, application number, patent assignee.

**Performance:** Type/genre, event name, event location, event date, duration, media.

**Sound & Music:** Sound recording details (format, publisher/label name and location, series, catalogue number, release date), duration, performers, genre, style, copyright holder(s), media.

**Technology, Technique & Device:** Genre, materials, dimensions, purpose and application, copyright holder(s), location, manufacturer, media.

### 3.3 Your deposit

This forms the central part of our deposit guide and is structured around 3 parts: Decisions, Record and Upload. The key questions guiding this section are 'What can I deposit?' and 'What does a deposit consist of?' In reference to the first question, there are a number of considerations. On the most basic level, the answer should be guided by the purpose of the IR and the researcher's own concern for the public representation of their work. The following rationales can inform deposit decision:

- **Institutional guidelines:** Your institution may have provided guidelines as to what you can deposit in the repository. Please check with repository staff and IR help pages.
- **Research output:** IRs serve as an archive for research outputs and facilitate the Green OA option. It allows the recording of a broad range of works, from articles to artefacts, performances and other creative outputs.
- **Showcase:** IRs act as a showcase for the institution's research. Other researchers, prospective collaborators and students as well as more general audiences can browse the IR or look at a specific department or person's research. Deposit your item if you would like it to represent your research in this public context.
- **Personal archive:** The repository can work as a central archive for your research. It provides stable URLs (website addresses) for your work and lets you archive ephemeral

documents relating to specific items. For example, if you're depositing an Exhibition, you can append a PDF of the press release or invitation card as well as any reviews.

Generally, it needs to be stressed that the depositor is creating a public record for their research and that it is hence in their own interest to create a complete, accurate and intelligible representation. The second question, 'What does a deposit consist of?' yields two answers, 'Record' and 'Upload'. We felt that researchers often did not quite understand this very basic premise of IRs. Hence, this part tries to be very clear about the composition of an IR item. It is important to stress that the record is assembled via metadata (core and additional) and that this provides the basis for the public citation.

Clear guidance regarding what can and cannot be uploaded and made publicly accessible should be included in the upload stage. More details on this can be given on the IR's help pages as well as in any relevant sections of the researcher's home institution's Library and Research Office web pages. The key issues addressed here pertain to the handling of the actual file being uploaded (e.g. format) and the relation between this upload and the record. While there are ever expanding options for file types, our recommendations focus on end-user delivery and availability of formats. Where possible, we recommend the use of well-documented or open formats and users should retain a high-quality version of any file for preservation purposes in their own archives.<sup>xii</sup>

Recommended file formats for upload (this covers the most common files uploaded):

**Text:** PDF or Word (.doc)

**Image:** JPEG (.jpg)

**Moving Image:** MPEG-4 (.mp4), MOV (.mov), Flash video (.flv)

**Sound:** MP3 (.mp3), wav (.wav)

Depositors should check their institutional guidelines for further information and guidelines for file size restrictions, particularly if they would like to deposit more complex works.

The second key aspect concerns the distinction between work and image (in VRA Core terms) or between work, expression and manifestation (in FRBR terms). Often, the upload constitutes related documentation rather than the actual work. At other times, the upload represents a version of the work described by the record (e.g. the author's first draft as opposed to the published version). Here, we would recommend a clearer understanding of what can be uploaded as well as the inclusion of information about how the upload relates to the record. Examples of related documentation include publications accompanying a work such as reviews, reports, manuals, publicity materials, press releases, CD booklets; visual documentation such as installation shots of exhibitions, photographs of performances or artworks and artefacts and screenshots of video games or online contents. For text-based

works, uploads can comprise the full-text or versions thereof. In all of these cases, it is important to understand the copyright implications and detail the licence specifying what people are permitted to do with the uploaded files. We refer to the standard copyright resources, SHERPA-RoMEO, which lists publishers' copyright policies, the toolkits developed by the Web2Rights project (in particular, the IP Flowchart) and the Creative Commons.<sup>xiii</sup>

### 3.4 Defiant objects

In this section we will list the items we defined on the deposit guide as being 'defiant objects', with an explanation of why they were chosen and our recommendations for depositing them into a repository.

**Book Review:** Many Institutional Repositories do not have a specific item type for book reviews, and despite this being a fairly simple type of output; unless the title or description is clear, there can be some confusion for the end user of the IR between the review, and the book being reviewed, and the author of the review and the author of the book being reviewed. During our research we found many examples of these that were given the item type 'Other', presumably because the depositor did not know which item type would be most appropriate to use. Many book reviews are written for journals; so in the absence of a dedicated item type, 'Article' might be the closest item type to choose, but unlike most articles, book reviews may not be peer reviewed. When creating the record on the IR we recommend that the title should contain the word 'review' in it for clarity, for example "Moby-Dick [Review of Moby-Dick; or, The Whale by Herman Melville]".

**Composite Works:** Some research outputs may be formed of multiple and varying parts, so the choice of which item type to choose when depositing work in the IR can be difficult. We suggest that the depositor choose the item type that is most relevant for the main bulk of the work; for example a sound installation that comprises devices and projections might require the use of item type 'Sound & Music', but the abstract should include descriptions of the other elements of the work.

Where an element of the whole work might constitute a research output on its own, this could be deposited as a separate item of the appropriate type, and relationship between this and the main work could be described in the abstract. For example an algorithm that transformed weather data into music might be deposited separately as a digital object.

**Digital Object:** This can encompass a large range of work, but for our purposes it is research output that is born digital<sup>xiv</sup>, such as software, a website, simulation, computer game etc. Care should be taken when noting the different versions of these, as digital objects have the potential to change radically between versions, and if the work is something that is likely to remain in perpetual beta, being constantly updated and developed, then this could be noted

in the abstract. Software versions or game platforms should be noted in the title, e.g. "Monkey Island [version 2.3 for Sega]".

For complex digital objects such as computer games that may have been created by a large team, you should specify your role (e.g. programmer, character designer or writer) in the abstract if there is no way to do so in the creator field.

If you are contributing a text to a website or a blog, this could be recorded as item type 'Article' if it was peer-reviewed or 'Other Writing' if it is grey literature. If however you have created your own website or blog, this should be recorded as 'Digital Object'.

**Exhibition Catalogue & Artist Monograph:** If you are the author of the whole catalogue, or if you contributed an essay, this should be deposited in the repository as a 'Book' or a Book Chapter'. If you are the sole subject of the catalogue, or it is an artist monograph it should be deposited as a 'Book' or 'Edited Book' but you should record both yourself and the place of exhibition and/or the author(s) as creators of the work. You should make sure to include the date range of the exhibition.

If you are depositing the exhibition as a separate item, include a reference to the exhibition catalogue in the abstract.

**Grey Literature:** Before depositing material considered 'grey literature' into the repository you should consider if it is appropriate for public dissemination, and that you want it to be part of your research profile. You should also be sure that you have the correct permissions to use it if necessary, and that any data protection or confidentiality issues have been considered.

If there is more than one creator, the depositor should check with the other authors before making the full-text available.

**Multimedia Uploads:** Whatever type of research is being deposited, when dealing with multimedia outputs you should try and keep a clear relation between the files being uploaded and the research output being recorded. In fact this is true of all uploads, not just multimedia ones.

Permissions and licences for any uploaded file need to be clear and metadata for the files should be added during deposit. This will aid in preservation and future accessibility of the uploaded files.

Always check that files open/play or view correctly: use preferred or open formats and encoding where possible, and check the guidance from your institution on the preferred formats for your institutional repository.

**Project:** Where different research outputs are related, create a record for the overall project, using item type 'Project' if it available in your IR, and create individual records for each output using the appropriate item type for each one. Indicate relationships by placing the project name and date range in the title of each item, for example "Arboreal Etudes [Living Sounds, 2010-11]". Include a standard description of the project alongside each item's abstract. This should contain the project title, date range, funding or commissioning body, and, if available, location and URL.

**Screenings & Broadcasts:** Record details of screenings and broadcasts of the work within the record created for the object (for example moving image or composition).

Include the date of screening or broadcast; the broadcast medium, for example television, radio or podcast; the broadcast details, e.g. BBC2 or screening event, such as Locarno International Film Festival.

**Translation:** If there is no specific item type given for translation, then as with book reviews, the fact that it is a translation should be made clear in the title and description in the item record, for example the title could read: "The Piano Teacher" [Translation of "Die Klavierspielerin" by Elfriede Jelinek].

## Conclusion

There is an increasing abundance of research output being produced across the university sector and beyond that does not fit the traditional text-based model of journal article and book that institutional repositories and similar systems were initially designed for. It is important to include non-standard works in order to record and showcase them as valid outputs from research, and to make them visible to funding bodies and end users alike. It is also important that researchers know they can deposit such works in an institutional repository. This means that the item types offered by repositories need to be expanded to cater for a wider variety of works, and that the metadata that is created for each object ensures proper understanding of what the work is and allows it to be discovered and cited.

The Defiant Objects project is part of the effort to aid the inclusion of these non-standard research outputs in repositories, and we hope that the decision making guide we have produced will help and encourage researchers and repository managers in depositing a wider variety of work, enriching the contents of each repository and creating a more satisfactory resource for everyone: clarifying the depositing process for researchers, without adding hugely to the workload of repository managers.

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<sup>ii</sup> SHERPA-LEAP (the London E-prints Access Project) is a University of London (UoL) partnership, which has created open access institutional repositories at several University of London institutions and continues to support their development and management, through ongoing development projects, and as a consortium of repository managers. For more information, visit the website <http://www.sherpa-leap.ac.uk/>.

<sup>iii</sup> Kultur was a JISC-funded project from 2007-09 that established a model of an institutional repository for use in the creative and applied arts. See <http://kultur.eprints.org>. Kultivate, which built on Kultur, was driven by user-needs articulated by creative and visual arts researchers and focused on sharing and supporting the application of best practice. Further information together with a toolkit can be found at <http://www.vads.ac.uk/kultur2group/projects/kultivate>.

<sup>iv</sup> The DO blog is at <https://defiantobjects.wordpress.com>.

<sup>v</sup> POCOS (Preservation of Complex Objects Symposia) focused on complex objects such as software art and computer games and their respective digital preservation issues. More information is available on the website <http://www.pocos.org/index.php/pocos-symposia>.

<sup>vi</sup> KAPTUR is a JISC-funded project focused on managing visual arts research data. It is carried out by the Visual Arts Data Service, Goldsmiths, Glasgow School of Art, University for the Arts London and the University for the Creative Arts. More information can be found at <http://www.vads.ac.uk/kaptur/about.html>.

<sup>vii</sup> The authors wish to thank Kate Sclater at Hyperkit ([www.hyperkit.co.uk](http://www.hyperkit.co.uk)).

<sup>viii</sup> The LSE Library's Versions Project has produced an extremely useful toolkit for managing versions of scholarly outputs. See <http://www.lse.ac.uk/library/versions>.

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<sup>ix</sup> The REF 2014 defines the broadened scope of output as follows: “In addition to printed academic work, research outputs may include, but are not limited to: new materials, devices, images, artefacts, products and buildings; confidential or technical reports; intellectual property, whether in patents or other forms; performances, exhibits or events; work published in non-print media.” (§106, REF 2014 2011)

<sup>x</sup> See the FAQ for the REF 2014 at <http://www.ref.ac.uk/faq/all/>.

<sup>xi</sup> It is nevertheless useful to review some of the cataloguing standards developed elsewhere in order to enhance the IRs capacity for recording defiant objects. SHERPA-Leap’s Media Working Group has reviewed the Visual Resources Association’s Cataloguing Cultural Objects as well as the Getty research Institute’s Categories for the Description of Works of Art (CDWA), Public Broadcasting Core Elements, KULTUR project metadata elements and core elements of SEPIADES (Safeguarding European Photographic Images for Access Data Element Set).

<sup>xii</sup> Digital preservation was the topic for the JISC project KeepIt (2009-2011). The KeepIt course on digital preservation tools for repository managers can be found at <http://blog.soton.ac.uk/keepit/tag/keepit-course/>. The project report is at <http://repository.jisc.ac.uk/553/>.

<sup>xiii</sup> SHERPA-RoMEO can be found at [www.sherpa.ac.uk/romeo.php](http://www.sherpa.ac.uk/romeo.php). The copyright toolkit of the Web2Rights project is at <http://www.web2rights.org.uk/>, the IP Flowchart is at [http://www.web2rights.org.uk/navigator/content/ipr/chart/IPR\\_Flowchart.pdf](http://www.web2rights.org.uk/navigator/content/ipr/chart/IPR_Flowchart.pdf). Creative Commons licences and information can be found at <http://creativecommons.org/>.

<sup>xiv</sup> “Born digital resources are items created and managed in digital form”. This definition of ‘born digital’ material is taken from Ricky Erway’s 2010 essay for OCLC Research which can be found here: <https://www.oclc.org/resources/research/activities/hiddencollections/borndigital.pdf>

# Appendix A:

## Examples of defiant objects

As stated in section 2 of the report, we looked at research objects and outputs that were mostly non-text-based and therefore perhaps not so easily ingested into repositories. This does not mean however that this research is not documented, merely that it may not have been included in the institutional repository alongside the more conventional outputs. Therefore to find 'defiant' material we looked at university and staff research pages, research project websites etc. and have documented some of the research we looked at here.

We wondered why research outputs from these sorts of projects might not be being regularly deposited into the repository. Was it because of the nature of the research, the culture of the department or simply lack of knowledge about the repository?

### **A1: Examples of defiant objects, partially, or not deposited in IRs.**

The following examples were collected from university webpages, from department and research centre sections that presented current research activities, and project web pages linked to them.

<b>Example 1:</b> A research project. <i>Weaving communities in practice: Textiles, culture and identity in the Andes</i>	
Institution	Birkbeck with Instituto de Lengua y Cultura Aymara
Date (range)	2009-2012
Description (taken from AHRC website)	Research in Bolivia, Peru and Chile, combined with museum research there and in the UK, focuses on Bolivia, Peru, and Chile on the basis of previous ethnographic, archaeological and museological knowledge and contacts, and three time horizons: Tiwanaku, the Inka-early colony, and the contemporary. The primary aims of this project are: to link visual, computer and museum studies in areas of cognition, and curatorial methods; to advance textile studies in areas of structure mapping and correlations with socio-cultural data; to advance understanding of meta-learning in visual contexts; to ensure that, through exchanges of ideas, methods, and technologies, the study of the visual aspects of man-machine interface methodologies are better integrated with the social sciences. Secondary aims include providing new methods for textile producers to document and defend their textile patrimony and understanding regional textual practices from the perspective of Andean weavers contributes to decolonisation studies, and new intercultural ontological approaches.
Research outputs	Articles, books and book sections, conference papers, reports, software, interactive maps, textile terminology, research methodology, workshops, museum textile register, computer models, data, video and photographs etc.
Any outputs from this project currently in the IR?	No

Issues Identified:

- Project level
- Definition of “research output”
- Authorship
- Structural relationships
- Item types

<b>Example 2: AHRC Research Centre for Cross-Cultural Music and Dance Performance</b>	
Institution	SOAS
Date (range)	?
Description	<p>Project 2, convened by Keith Howard (kh@soas.ac.uk), with DVD production coordinated by Sarah Bilby (sarah@goldendeer.demon.co.uk), aims to record and produce ten audio CDs and five DVDs that couple performance to extensive high quality documentation in a manner that complements each constituent research project and addresses inadequacies in current recordings.</p> <p>Two primary concerns exist: the first is to support other Centre projects, but at the same time they are a significant output medium that functions as a series with a distinct identity. The second concern is a reflection on the poor documentation that accompanies most commercial CDs, which we challenge by constructing extensive documentation in collaboration with performers.</p> <p>Audio CDs are recorded and mastered during the residency of performer-researchers. The Centre distributes review copies (in accordance with MCPS norms) and reviews are used to acquire feedback. The development of CDs and DVDs takes place within specific time frames (as specified in individual projects), and DVDs where appropriate include links to websites.</p>
Research outputs	CD, DVD, documentation
Any outputs from this project currently in the IR?	Yes, a few of the CDs produced for this project have been recorded in SOAS research online, with varying amounts of description; some mention the AHRC project, some don't. No full text.

This is a series of CDs and DVDs produced by SOAS. The CDs/DVDs are outcomes of collaborations between one resident and one non-resident scholar and/or artist. Each comes with extensive documentation, some of which is available on the SOAS website.

Issues identified:

- Project level
- Definition of “research output”
- Multi-part objects
- Authorship
- Structural relationships
- Item types

<b>Example 3: AIKON</b>	
Institution	Goldsmiths
Date (range)	AIKON I 2006-2008, AIKON II 2008-2012
Description (Taken from the project website)	The main objective of our investigation is to implement a computational system capable of simulating the various important processes involved in face sketching. The ensemble of processes to be simulated, including; the visual perception of the subject and the sketch, the drawing gestures, the cognitive activity: reasoning, the influence of the years of training, etc., the inter-processes information flows. It is evident that due to knowledge and technological limitations the implementation of each process will remain coarse and approximate. The system implemented is expected to draw in its own style.
Research outputs	Journal articles, newspaper and magazine features and articles, exhibitions, videos, photographs, portrait sketches, conference papers, workshops, television appearances, drawing robot arm, computer program, website
Any outputs from this project currently in the IR?	No.

Project to create a robot capable of producing sketch portraits, improving its skills over time.

Issues identified:

- Definition of “research output”
- Multi-part objects
- Authorship
- Structural relationships
- Item types
- Copyright (for example, of the many videos that have been taken of the robot in action that are now on YouTube or Vimeo).

<b>Example 4: B-Keeper</b>	
Institution	Queen Mary
Date (range)	2007?
Description (Taken from the project website)	B-Keeper is a drum tracker that uses a click track to sync Ableton Live to drums, so that Live will follow the drummer.
Research outputs	Software, website, video, screen shots, journal articles
Any outputs from this project currently in the IR?	Not specifically, though there may be related material in the researcher’s phd thesis, which is deposited in the repository.

B-Keeper has been developed through a research project at the Centre For Digital Music, Queen Mary University of London.

Issues identified:

- Definition of research output
- Metadata
- Multiple item types within the project/produced from it.

- Location of research (spread across research pages, project website, multiple journals etc.)

## A.2 Examples of defiant objects in IRs

The following items are taken from IRs. Information mirrors the information given in each record and has been copied and pasted from the respective IR. Hence, all typos are from source. Each record is succeeded by a brief description of the item and a list of issues.

<b>Example 1: Creative resource: sustainable materials archive and library</b>	
Item type	Other
Institution	Kingston University
IR	Research at Kingston University at <a href="http://eprints.kingston.ac.uk">http://eprints.kingston.ac.uk</a>
URI	<a href="http://eprints.kingston.ac.uk/1578/">http://eprints.kingston.ac.uk/1578/</a>
Date (range)	2003
Description	The archive is open to the public by appointment and has over 800 material samples and data collected from 12 manufacturing countries. All samples are 100% recycled waste, including plastics, rubber, fibre, metal, glass, ceramic and textiles. Forty designers' case studies provide discussion of best practice, manufacturers, issues relating to local and international sourcing, government policy, the waste-management industry, material technologists, architects, environmental design researchers, educators and writers from Europe, Asia and North America. Funding from AHRC and London Remade
Keywords	Sustainable materials library
Full text	No

This record refers to an archival resource created by the researcher. According to the archive's website *Rematerialise Eco-Smart Materials* at [http://research.kingston.ac.uk/rematerialise/html\\_and\\_flash/searchwelcome.htm](http://research.kingston.ac.uk/rematerialise/html_and_flash/searchwelcome.htm), it exists as both physical and digital library and it is "also visualised in the form of a travelling exhibition". Funding information is contained in the Abstract/description field.

Issues identified:

- Insufficient metadata
- Organisation of metadata
- Multiple parts: resource, website, exhibition
- Item types

<b>Example 2: Matthew et Mathilde (Furniture)</b>	
Item type	Artefact/Device
Institution	Kingston University
IR	Research at Kingston University at <a href="http://eprints.kingston.ac.uk">http://eprints.kingston.ac.uk</a>
URI	<a href="http://eprints.kingston.ac.uk/3842/">http://eprints.kingston.ac.uk/3842/</a>
Date (range)	2000

Description	Exhibition piece was a pair of anthropomorphic dressing mirrors. 'Matthew' has a satin-chromed tubular steel support mounted on a terrazzo base. The top and drawer are in blue constructed veneer with English walnut details. 'Mathilde' has the same support materials but the top was dyed green birds-eye maple inset with two silver plated bowls with English cherry covers. Scale of 'Matthew' - 1650mm (h) / 580mm (w) / 300mm (d) Scale of 'Mathilde' - 1500mm (h) / 590mm (w) / 365mm (d). Exhibited at the 'Second Biennial International Design Festival St-Etienne' (5 - 15 October 2000) in the 'International Exhibition: 100 Countries' in St - Etienne, France. The Exhibition was organised under the auspices of the town of St-Etienne and in partnership with amongst others: The Museum of Modern Art at Firminy, Le Corbusier Espace at Firminy, the Town of Firminy, the Rhone-Alpes Design Centre, the Loire Federation for the Protection of Nature and Wildlife and the French Design Institute. Exhibition catalogue: ISBN: 2-9128-28-25-1 page 363 (2 colour illustrations).
Full text	No

This is a record for two pieces of furniture. The abstract/description contains further items: an exhibition and an exhibition catalogue.

#### Issues

- Organisation of metadata
- Multiple parts: Exhibition, exhibition catalogue etc.

<b>Example 3: Embroidered Digital Commons</b>	
Item type	Project
Institution	Goldsmiths
IR	Goldsmiths Research Online
URI	<a href="http://eprints.gold.ac.uk/6742/">http://eprints.gold.ac.uk/6742/</a>
Date (range)	2009-13
Description	<p>A distributed embroidery of 'A Concise Lexicon of / for the Digital Commons' Raqs Media Collective, 2003. Facilitated by Ele Carpenter 2009-13.</p> <p>International partners for stitching the lexicon: Access: Access Space, Sheffield, 2010; Code: National Museum of Computing, Bletchley Park, 2011; Data: Dorkbot 2012; Ensemble, Café Crema, London, 2011; Fractal: Mr X Stitch 2011; Gift: Oppen Syjunta, Sweden 2010; Heterogeneous: AMIW, VBKOE Art Festival, Vienna, 2011; Iteration: Woolly Way, Ireland; Journal: smallestforest.net, Australia, 2011; Kernal: Access Space, Sheffield, 2011; Liminal: Brenda Burrell, 2009; Meme: Furtherfield and Unwooly, London 2012; Nodes: Women Writers Network, Belgrade, Serbia and Chawton House Library, 2011; Orbit: Furtherfield, London, 2012; Quotidian: Suzanne Hardy, Washington, UK, 2011; Rescension: Digital Humanities Conference, Kings College, London, 2010; Site: Rayna Fahey &amp; Lynda Roberts, Yarra Sculpture Gallery, Melbourne, Australia, 2010; Tools: 'Analogue is the new digital' MadLab, AND Festival, Manchester, 2010; Vector: Power of Making, V&amp;A Museum, 2011; Web: EDC Facebook Group 2011; Xenophilly: Ruthie Ford, Sheffield, 2011; Yarn: Humlab, Umea,</p>

	Sweden 2009; Zone: 'Analogue is the new digital' MadLab, AND Festival, Manchester, 2010.
Official URL	<a href="http://eprints.gold.ac.uk/6742/">http://eprints.gold.ac.uk/6742/</a>
Full text	Yes (cached website)

This is a project initiated by the researcher. It consists of a series of embroideries, which are based on a lexicon developed by the Raqs Media Collective, made by a (growing) number of partners. These are listed in the description of the item. The project is documented on the project website and includes images of embroideries as well as video and text.

#### Issues

- Organisation of metadata
- Multiple parts
- End-user comprehension
- Definition of research output
- Project level
- Multiple authors/creators

<b>Example 4: MIB-1 and p27(Kip1) expression in neuroblastoma</b>	
Item type	Other
Institution	Institute of Cancer Research
IR	ICR Publications at <a href="http://publications.icr.ac.uk">http://publications.icr.ac.uk</a>
URI	<a href="http://publications.icr.ac.uk/3370/">http://publications.icr.ac.uk/3370/</a>
Date (range)	2004
Description	None
Keywords	International-society; prognostic value; renal tumors; wilms-tumor; trial; siop-9/gpoh; proteins; receptor; children
Official URL	<a href="http://clincancerres.aacrjournals.org/cgi/content/full/10/22/7785">http://clincancerres.aacrjournals.org/cgi/content/full/10/22/7785</a>
Full text	No

This is a letter published in *Clinical Cancer Research* with the doi 10.1158/1078-0432.CCR-04-0952 in response to a recent article published by the journal.

#### Issues

- Item type
- End-user comprehension
- Insufficient metadata

<b>Example 5: LSE team responds to Home Office criticisms of The Identity Project report</b>	
Item type	Other
Institution	LSE
IR	LSE Research Online
URI	<a href="http://eprints.lse.ac.uk/742/">http://eprints.lse.ac.uk/742/</a>
Date (range)	2005
Description	This document sets out the response of the LSE's ID Project Report Team to the Home Office's critique of our Identity Project report, published on 22 July 2005. For ease of reference, the LSE response is based on the format of the

	Home Office (hereafter HO) document.
Additional information	The Identity Project has been organized and sponsored by the LSE Department of Information Systems. Three department members, Simon Davies, Gus Hosein, and Edgar Whitley coordinated the production of the reports, overseen by an advisory committee of 16 LSE professors who guided the report. Numerous LSE staff members and an international team of 60 researchers contributed to, and reviewed, the reports. Copyright © 2005 Department of Information Systems, London School of Economics and Political Science. LSE has developed LSE Research Online so that users may access research output of the School. Copyright and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LSE Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain. You may freely distribute the URL (< <a href="http://eprints.lse.ac.uk">http://eprints.lse.ac.uk</a> >) of the LSE Research Online website.
Keyword	ID cards, identity project
Full text	Yes

This is a press release responding to Home office criticism of the Identity Project.

Issues identified:

- Item type
- Metadata organisation
- Authorship/Creators

<b>Example 6: <i>Louis</i></b>	
Item type	Other
Institution	UCL
IR	UCL Discovery
URI	<a href="http://discovery.ucl.ac.uk/1316652/">http://discovery.ucl.ac.uk/1316652/</a>
Date (range)	2009-11
Description	For the making of this project Goodwin accompanied Louis in different situations over an 18 month period, closely observing his activities and daily routines, for example when at home, at work, in meetings, during meals, in the gym, watching a film or driving his car. Although occasionally alone, he was mostly drawn in the company of others, either one person or a combination of people, all with different relationships with him, for example work colleagues, his trainer, members of his family, his wife, his son, his daughters, his father, his mother or his friends. Through this activity Goodwin made 440 small pencil drawings, for the majority of the time drawing back and forth between the subject and the individuals he came into contact with, some of the drawings are only a few lines, others are more worked up. Goodwin presents the drawings in two ways: inanimate, in a frame, mounted in the order that they were made and secondly as an animation, in which the drawings are sequenced in multiple combinations to further explore, reflect on and draw out the suggestions and nuances contained within

	the individual drawings and relationships between them. Louis considers the idea that a portrait is never adequate to the task of portraying an individual. It still remains that many aspects and subtleties of each interaction are concealed or distorted, however, it seems possible that these absences are active spaces for the imagination. The 'portrait' considers how individuality is expressed and defined by one's relationships with others.
Location	London
Keywords	Portrait, portraiture, pencil drawings, animation
Full text	No

#### Issues

- Item type
- Minimal citation: "Goodwin, D (2011) Louis. UNSPECIFIED"

<b>Example 7: <i>The Smelly Hillock</i></b>	
Item type	Artefact
Institution	UCL
IR	UCL Discovery
URI	<a href="http://discovery.ucl.ac.uk/1333273/">http://discovery.ucl.ac.uk/1333273/</a>
Date (range)	2010
Description	Unlimited buy-one-get-one-free edition, signed and free at point of purchase when you buy a piece of rubbish destined for landfill.
Keywords	Climate Change, Art Writing
Full text	No

#### Issues

- Item type
- End-user comprehension
- Incomplete metadata

<b>Example 8: <i>Sleeping</i></b>	
Item type	Other
Institution	IoE
IR	IoE Eprints
URI	<a href="http://eprints.ioe.ac.uk/3468/">http://eprints.ioe.ac.uk/3468/</a>
Date (range)	2010
Official URL	<a href="http://www.purplecrying.info/sections/index.php?sct=3&amp;">http://www.purplecrying.info/sections/index.php?sct=3&amp;</a>
Keywords	Babies Parenting
Full text	Yes

This is a text published on a website for an organisation that offers advice on how to deal with crying infants. The attached PDF is dated November 2009 (in the file name) and appears to be a draft. It shows tracked changes, contains notes to the author and has no references.

## Issues

- Item type
- Minimal citation: James-Roberts, Ian St (2009) *Sleeping*. UNSPECIFIED.
- Upload version

<b>Example 9: AgroPolis</b>	
Item type	Design
Institution	UCL
IR	UCL Discovery
URI	<a href="http://discovery.ucl.ac.uk/239015/">http://discovery.ucl.ac.uk/239015/</a>
Date (range)	2009
Abstract	Self-Sustaining City, Egypt (Design Team: marcosandmarjan; collaboration: Rocky Marchant, Sana Hasan, Heba Layas).
Location	Khataba (Al Jadida), Egypt
Keywords	marcosandmarjan, digital architecture
Full text	No

## Issues

- End-user comprehension
- Minimal citation: Colletti, M and Cruz, M (2009) AgroPolis. [Design].
- Insufficient metadata
- Metadata organisation

<b>Example 10: Slow</b>	
Item type	Other
Institution	UCL
IR	UCL Discovery
URI	<a href="http://discovery.ucl.ac.uk/49968/">http://discovery.ucl.ac.uk/49968/</a>
Date (range)	2009
Location	Vienna
Full text	No

There is no way to tell what this item actually is, though the faculty link (which doesn't work) is to the Bartlett School of Architecture.

## Issues

- End-user comprehension
- Item type
- Minimal citation: Glanville, R (2009) Slow. UNSPECIFIED, Vienna.
- Insufficient metadata

<b>Example 11: VOXED.org</b>	
Item type	Other
Institution	Institute of Education
IR	Institute of Education ePrints

URI	<a href="http://eprints.ioe.ac.uk/3918/">http://eprints.ioe.ac.uk/3918/</a>
Date (range)	2003
Additional information	Project website on the meaningful application of technology in the singing studio.
Full text	No

This links to a description of the project on the iMerc.org website, which includes a list of the people involved and links to some of the text-based research outputs.

#### Issues

- End-user comprehension
- Item type
- Authorship
- Minimal citation: Himonides, Evangelos (2003) *VOXED.org*. UNSPECIFIED.
- Insufficient metadata

<b>Example 12: <i>idonthaveyourmarbles</i></b>	
Title	idonthaveyourmarbles
Researcher(s)	J. Dean and K. Klega
Item type	Show/exhibition
Institution	UWE
IR	UWE Research Repository
URI	<a href="http://eprints.uwe.ac.uk/16131/">http://eprints.uwe.ac.uk/16131/</a>
Date (range)	2011
Description	An international ongoing collaborative project operating within a pre-existing economic framework (ebay), in which artefacts (made / found objects of questionable value) are listed for 10 days a month, with invites to participate sent to members of the art world. An exhibition version exists in which artefacts are exhibited alongside their virtual counterparts.
Official URL	<a href="http://www.ebay.co.uk/sch/idonthaveyourmarbles/m.html">http://www.ebay.co.uk/sch/idonthaveyourmarbles/m.html</a>
Location	Maddox Arts, London
Keywords	Virtual, value
Full text	No

#### Issues

- Multiple Item types
- Contents continuously in flux
- Ownership
- Multiple participants
- Dates

<b>Example 13: <i>Bee Stop</i></b>	
Title	Bee Stop
Researcher(s)	Margot Bannerman
Item type	Show/exhibition
Institution	UAL

IR	UAL Research Online
URI	<a href="http://ualresearchonline.arts.ac.uk/3295/">http://ualresearchonline.arts.ac.uk/3295/</a>
Date (range)	2010
Description	Bee-Stop is a semi-permanent green roof installation above a parade of shops on the Holloway Road London. It is sewn with resilient nectar rich flowers and plants to investigate both the viability of specific plants and the specially fabricated growing structure. Bee-Stop is part on an ongoing research project into interventions with growing structures. It is predicated on evidence suggesting the benefits of urban greening in high-density built environments suggesting replacing hard surfaces with growing surfaces helps mitigate against air pollution, rainwater loss, urban heat radiation as well as supporting biodiversity through co-opting even small urban spaces.
Full text	Pdf of publicity, and photographs available to download.

#### Issues

- Item type
- Dates

**Example 14:** *The romantic economist on "The nature of technology", a guest review [book review]*

Title	The romantic economist on "The nature of technology", a guest review
Researcher(s)	Richard Bronk
Item type	Other
Institution	LSE
IR	LSE Research Online
URI	<a href="http://eprints.lse.ac.uk/25659/">http://eprints.lse.ac.uk/25659/</a>
Date (range)	2009
Description	none
Official URL	<a href="http://blog.enlightenmenteconomics.com/blog/_archives/2009/11/2/4369117.html">http://blog.enlightenmenteconomics.com/blog/_archives/2009/11/2/4369117.html</a>
Full text	No

#### Issues

- Multiple item types: blog, book review

**Example 15:** *UKCGO (UK Children Go Online) Child questionnaire*

Title	UKCGO (UK Children Go Online) Child questionnaire
Researcher(s)	Sonia Livingstone
Item type	Other
Institution	LSE
IR	LSE Research Online
URI	<a href="http://eprints.lse.ac.uk/501/">http://eprints.lse.ac.uk/501/</a>
Date (range)	2004

Description	None
Official URL	<a href="http://www.children-go-online.net/">http://www.children-go-online.net/</a>
Status	Unpublished
Full text	Yes

#### Issues

- Item type
- No description

<b>Example 16: <i>Beacon</i></b>	
Title	Beacon
Researcher(s)	Thomson, JR & Craighead, A
Item type	Other
Institution	UCL
IR	UCL Discovery
URI	<a href="http://discovery.ucl.ac.uk/13599/">http://discovery.ucl.ac.uk/13599/</a>
Date (range)	2005
Description	none
Official URL	none
Status	none
Full text	no

This particular piece has at least 3 incarnations, a railway flap installation, a gallery installation and an online version that updates every second.

#### Issues

- Version/variant
- Item type
- Minimal citation: Thomson, JR and Craighead, A (2005) Beacon. UNSPECIFIED
- No description