

# What is a mashup?

... and what makes them possible?

Owen Stephens  
British Library



# Using these slides

These slides were developed by Owen Stephens  
(owen@ostephens.com) on  
behalf of the British Library.

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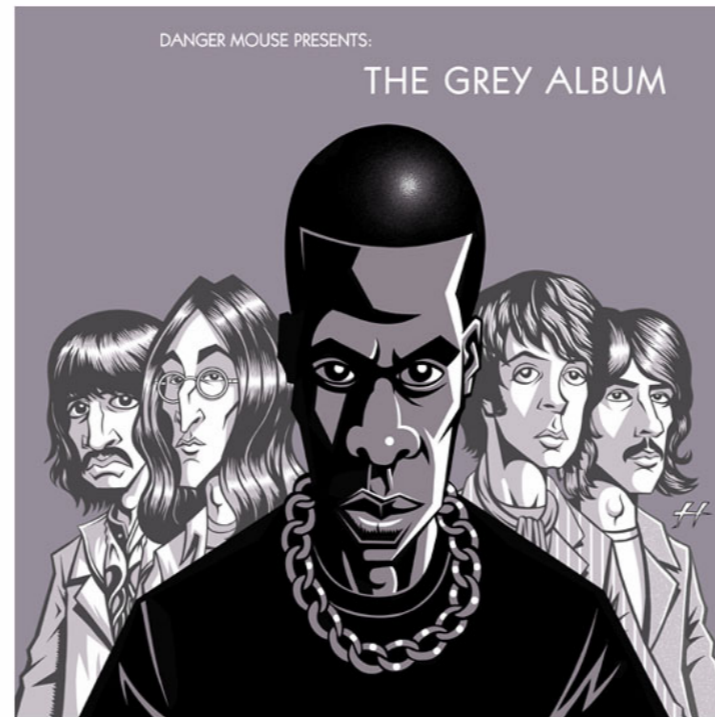
The use of the term mashup to describe a 'fusion of disparate elements' dates back to at least the 19th Century, but it wasn't until the late 20th Century that it became common, initially with specific reference to music .

In music at least, the reuse of other's material in new contexts or new ways has a long history. Some works such as Rachmaninov's 'Rhapsody on a theme of Paganini' (1934) explicitly took an existing theme and set it into a new context, using different instrumentation and playing with the basic structure of the piece to present something new.

A recording of Rachmaninov's composition licensed as CC-BY-NC-SA is available at <https://archive.org/details/RACHMANINOFFRhapsodyOnAThemeByPaganini-Rachmaninoff-NEWTRANSFER>

Coal drawing of Niccolò Paganini by Jean Auguste Dominique Ingres (left) <http://commons.wikimedia.org/wiki/File:NiccoloPaganini.jpeg> (Public Domain)

Photograph of Sergei Rachmaninoff (right) [http://commons.wikimedia.org/wiki/File:Sergei\\_Rachmaninoff\\_LOC\\_33968\\_Cropped.jpg](http://commons.wikimedia.org/wiki/File:Sergei_Rachmaninoff_LOC_33968_Cropped.jpg) (Public Domain)



Cover image (c) Justin Hampton (originally posted on <http://www.dangermousesite.com/>)

What is a mashup? “a digital media file containing any or all of text, graphics, audio, video, and animation, which recombines and modifies existing digital works to create a derivative work.”

For me - creativity meets technology. While I think it is arguable that technology is not an essential part of this, I believe it is the ease with which digital content can be repurposed latter not essential but enables?

Of particular note is the 'Grey Album' by DJ Dangermouse, which is made up entirely of samples from the Beatles' 'White Album' and JayZ's 'Black Album'. The 'Grey Album' attracted controversy and publicity as it sampled the source material without permission, and EMI subsequently requested those hosting the album to remove it due to the inclusion of material by the Beatles .

# Mashups beyond music

[http://www.youtube.com/watch?v=2T5\\_0AGdFic](http://www.youtube.com/watch?v=2T5_0AGdFic)

As tools, and content in appropriate formats became more common, the number of mashups being produced increased substantially both in their musical form, and also across other media. Video mashups particularly became popular and easy to distribute or access via YouTube.

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\$2250	2bd	Luxury 2bed 2bath High Rise in A+ Location!	Chicago	9/08	
\$2300	2bd	Great 2bed 2bath Condo w/ Amazing Amenities!	Chicago	9/08	
\$3309	2bd	Beautiful Se. View-Free Heat/Cable/Internet! Balcony! Avail 9/9	184 N Harbor	9/08	
\$2500	2bd	2BR +office, 2.5 Bath, Loft, Duplex, Two Decks!	Chicago	9/08	
\$2350	3bd	Wow – Lakefront Renovated Vintage Condo-Private Elevator	Illinois	9/08	
\$2495	4bd	Beautiful Top Floor Four Bedroom, Three Bath Duplex in Wicker Park!	Chicago	9/08	
\$2300	2bd	2Bd 1 baths in Chicago, IL	Chicago	9/08	
\$2480	2bd	Breathtaking Apartment – Boutique 2 Bed / 2 Bath, WD- \$2480	Philippi	9/08	
\$2355	2bd	2 br / 2 ba Amazing location, luxury living – 2 months free!	Chicago	9/08	
\$2625	3bd	Don't Miss This Spacious 3 Bed w/ Balcony! Luxury Living!	New York	9/08	
\$2530	2bd	Luxury 2 Bed/2.5 Bath Penthouse – Lakefront High Rise – Rent Special!	Chicago	9/08	
\$2545	2bd	New Luxury High Rise in West Loop, Wild In Unit, Granite, Ss, Pool and	Chicago	9/08	
\$2800	2bd	Chic new 2 BR in River North Art Gallery Districts, granite, Ss	Philippi	9/08	
\$2763	2bd	New Streeterville 2 br! Hottest amenities and best finishes! Everything You Need	Streeterville	9/08	
\$2715	2bd	Huge 2 Bed with views, new Appliances!	Chicago	9/08	
\$4200	3bd	Stunning River North 3 BR Apt w/ Dark Hrdw, Ss, Grnt, Spa, Wine Room	Philippi	9/08	

<http://www.housingmaps.com/>

In my view the factors that have encouraged mashups of cultural material are the availability of appropriate tools and source material in easy to manipulate formats. These factors apply equally to other forms of information, and in recent years 'data mashups' combining data from online resources to produce a new view of existing information have become increasingly common. Particularly mashups that combined data with some geographic aspect with online maps started expand rapidly from 2005 when Google Maps was first made available. An early example of this is <http://www.housingmaps.com/> which combined information from Craig's List (a classified advertising site) with Google Maps offer a map-based interface to find properties to buy or rent.

Google Maps has been the basis for large numbers of 'mashups' – perhaps reflect later in the day why this is?

# Visualising Twitter

<http://vimeo.com/4587178>

Twitter/flight visualisation

And finally web mashups. Making use of the distributed and open nature of the web to bring it together information and media from different parts of the web to build applications that were greater than the sum of their parts. Perhaps the most common type of mashup we've seen are map mashups



Image: More Mixed Messages, CC-BY-SA, <http://www.flickr.com/photos/withassociates>

What does 'open' mean?

Back to 5 stars of LOD

Not a simple binary open/closed... but rather a continuum

Amount of friction...

Things that create friction:

Explicit restrictions

Uncertainty about possible restrictions

Unusual/Unfamiliar interfaces (Z39.50 anyone?)

Lack of information on data and where it is available

Formats – Paul Walk argues we need a 'richer understanding of openness' which encompasses not just permissive licensing but, more broadly, the ease with which data can be used, taking into consideration aspects such as format and access mechanisms



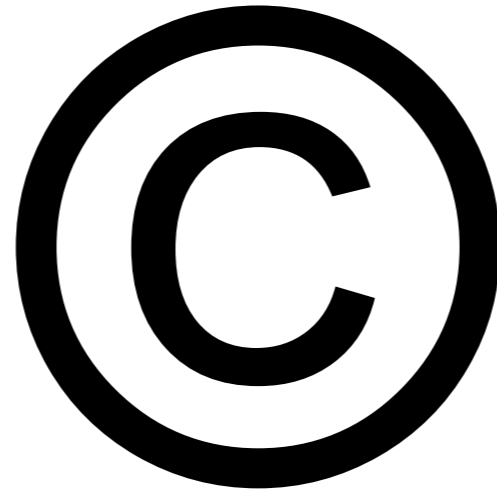


Image: Banana Skin, CC-BY, <http://www.flickr.com/photos/25414047@N00/5656079620/>

Friction can be good. What is not good is thoughtlessly or accidentally introducing friction.

Frictionless means losing control (over the data) – that's ok if that's what you want. Can combine approaches by making your interface the easiest to use

# Licensing



Licenses, OBD

Things that create friction:

Explicit restrictions

Uncertainty about possible restrictions

Problems with anything beyond PDDL and CC0 – does anyone own the metadata? Conflicting legal advice and decisions

Do you have database rights?

Remember the first \* of LOD?

# The Problem of the Yellow Milkmaid



“people simply didn’t believe the postcards in our museum shop were showing the original painting”

<http://pro.europeana.eu/documents/858566/2cbf1f78-e036-4088-af25-94684ff90dc5>

Examples of ‘open’, and friction (some friction is OK?)

Europeana

BNB – originally released with an “NC” license. Moved quickly to CC0

Problems with NC

OCLC – compromise

DPLA – asserts no copyright exists over metadata. But asserts to the extent it exists CC0 applies – compatibility with Europeana

‘The Milkmaid’, one of Johannes Vermeer's most famous pieces, depicts a scene of a woman quietly pouring milk into a bowl. During a survey the Rijksmuseum discovered that there were over 10,000 copies of the image on the internet—mostly poor, yellowish reproductions<sup>1</sup>. As a result of all of these low-quality copies on the web, according to the Rijksmuseum, “people simply didn’t believe the postcards in our museum shop were showing the original painting. This was the trigger for us to put high-resolution images of the original work with open metadata on the web ourselves. Opening up our data is our best defence against the ‘yellow Milkmaid’.”

Image reproduced from “Europeana Whitepaper No. 2: The Problem of the Yellow Milkmaid”, <http://pro.europeana.eu/documents/858566/2cbf1f78-e036-4088-af25-94684ff90dc5>, CC-BY-SA



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# Visit the New Ocean Community

**Latest Datasets**

- FedScope Separations Cube (Fiscal Year 2011)
- FedScope Employment Cube (March 2011)
- FedScope Employment Cube (June 2011)
- FedScope Employment Cube (September 2011)
- FedScope Employment Cube (December 2011)
- FedScope Accessions Cube (Fiscal Year 2011)
- Number of Veterans Insurance by VGLI by State
- VGLI Coverage Amount by State
- Federal Fleet Report
- Antitrust Division Ten Year Workload...

**DATA AND APPS** **COMMUNITIES** **OPEN GOVERNMENT**



<http://www.data.gov/>

US Government produced catalogue of available data at [data.gov](http://www.data.gov/)

data.gov.uk<sup>BETA</sup>  
Opening up government

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Who does what in Whitehall?



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<http://data.gov.uk/>

UK Government data.gov.uk

## data.open.ac.uk - Datasets

[data.open.ac.uk](#) is constantly evolving to deliver more public data from the Open University as open linked data. The list of datasets described below are the ones that we consider stable in the sense that their structure has been validated and is unlikely to change frequently. They are constantly being updated based on new data and updates realised on the origine repositories. Other datasets are also available on [data.open.ac.uk](#), but are currently in a test/validation phase.

### Open Research Online

The [Open Research Online](#) system contains information about publications originating from OU researchers. This information is represented using the [Bibliographic Ontology \(bibo\)](#).

Graph name: <http://data.open.ac.uk/context/oro>

License: [Creative Commons Attribution 3.0 Unported License](#)

[List of classes](#)

[List of Properties](#)

Example query: [Names of the people who have authored a patent](#)

Example object: [The Article "Molecular parameters of post impact cooling in the Boltzsh impact structure"](#)

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<http://data.open.ac.uk>

Now other organisations doing similar – Universities like [data.open.ac.uk](#) (and others)



- Business & Economy
- Communities
- Community Safety
- Council & Democracy
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## Warwickshire Open Data

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Providing access to public data in Warwickshire.

### Latest posts from the blog

[Hacking Warwickshire....again](#)

Tuesday 24th August 2010

### Latest datasets

[Payments To Suppliers](#)

March 2011 posted 16 days

<http://opendata.warwickshire.gov.uk>

Local Government – eg Warwickshire

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Hold CONTROL key for 2 or more

- All
- LC Subject Headings
- LC Name Authority File
- LC Children's Subject Headings
- LC Genre/Form Terms

<http://id.loc.gov>

<http://id.loc.gov>



The screenshot shows the homepage of the British National Bibliography (BNB) as Linked Open Data. At the top left, there is a vertical red bar with the text "BRITISH LIBRARY" in white. To its right, the main header reads "THE BRITISH NATIONAL BIBLIOGRAPHY" in bold black text, followed by "as Linked Open Data" in a smaller font. A search box with a "SEARCH" button is located to the right of the header. Below the header is a dark navigation bar with links for "Home", "Getting Started", "Documentation", "FAQs", and "Contact Us". The main content area features a heading "Welcome to bnb.data.bl.uk" followed by a paragraph explaining the BNB Linked Data Platform and its SPARQL services. A second search box with a "SEARCH" button is provided below the text. The footer of the page contains a paragraph describing the BNB's history and the types of publications it covers.

**BRITISH LIBRARY**

# THE BRITISH NATIONAL BIBLIOGRAPHY

as Linked Open Data

Home Getting Started Documentation FAQs Contact Us

## Welcome to bnb.data.bl.uk

The BNB Linked Data Platform provides access to the **British National Bibliography** published as linked open data and made available through SPARQL services. Two different interfaces are provided: a **SPARQL editor**, and `/sparql` a service endpoint for remote queries. Alternatively, use the search box below to enter a plain text term.

SEARCH

The **British National Bibliography** (BNB) records the publishing activity of the United Kingdom and the Republic of Ireland and has been doing so since the 1950s. This has traditionally included printed works and has recently been extended to electronic publications. The dataset includes metadata about published books, already published and forthcoming, and serials i.e. journals, periodicals, magazines, newspapers, etc.

<http://bnb.data.bl.uk>

<http://bnb.data.bl.uk>



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## Harvard Library Open Metadata

The Harvard Library is committed to making as much of its metadata as possible available through open access in order to support learning and research, to disseminate knowledge and to foster innovation. Open access to metadata aligns with the university's established commitment to open access for scholarly communication.

<http://openmetadata.lib.harvard.edu/>

Des fiches de référence sur les auteurs, les œuvres et les thèmes

Bienvenue sur data.bnf.fr

La Bibliothèque nationale de France vous guide dans ses ressources en regroupant sur une même page toutes les informations issues de ses différents catalogues, ainsi que de sa bibliothèque numérique Gallica.

Enquête de l'Observatoire des publics de la BnF :  
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<http://data.bnf.fr/>



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## LINKED DATA SERVICE DER DEUTSCHEN NATIONALBIBLIOTHEK

Die Entwicklungen im Bereich Semantic Web zielen darauf ab, semantische Strukturen nachnutzbar und Daten besser zugreifbar zu machen. Dies ermöglicht es, Daten aus heterogenen Quellen miteinander zu verknüpfen, was eine Etablierung neuer Dienstleistungen mit sich führt. Im Rahmen dieses Projekts werden von Anbietern (meist gemeinnützige Organisationen, Universitäten oder öffentliche Einrichtungen) ihre Daten in einer Semantic-Web-Form insbesonders Daten, die von generellem Nutzen für die Allgemeinheit sind. Beispiele hierfür sind geografische Informationen, Thesen

[http://www.dnb.de/DE/Service/DigitaleDienste/  
LinkedData/linkedata.html](http://www.dnb.de/DE/Service/DigitaleDienste/LinkedData/linkedata.html)

Usted está aquí: [Catálogos](#) > [Datos enlazados en la BNE](#)

**Datos enlazados en la BNE** ▶

- Fuentes de datos
- Tecnología
- Modelos (Ontologías)
- Enlaces relacionados
- Descarga de ficheros

## Datos enlazados en la BNE

Escuchar



**datos.bne.es** es un proyecto conjunto del Ontology Engineering Group (OEG) y la Biblioteca Nacional de España, destinado al enriquecimiento de la Web Semántica con datos bibliográficos provenientes de su catálogo. Esta iniciativa se ha puesto en marcha con la publicación, conforme a los principios de Linked Data, de información procedente de los catálogos bibliográficos y de autoridad, haciéndolos disponibles como bases de conocimiento RDF (Resource Description Framework). Además, estos datos se

interrelacionan con otras bases de conocimiento existentes en la iniciativa Linking Open Data. De esta manera, España se suma a los proyectos que otras instituciones como la British Library y la Deutsche Nationalbibliothek han comenzado recientemente.

Los datos están publicados de acuerdo a las especificaciones y condiciones de la licencia Creative Commons Zero (CC0)

[Acceso a la base de datos >>](#)

### Buscar

En el sitio web




Sitio web  Catálogo

### Accesos directos

- [Catálogo](#)
- [Biblioteca Digital Hispánica](#)
- [Hemeroteca Digital](#)

<http://datos.bne.es>

## Swedish National Bibliography and authority data released with open license

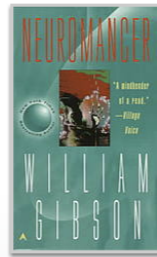
21 september, 2011 |  Martin

Before the summer the Swedish national librarian, Gunnar Sahlin, signed an agreement effectively releasing the Swedish National Bibliography and authority files into the public domain. We are now pleased to announce the general availability of these records (see below for details). We see the investment in Open Data as a strategic one and one that is needed to ensure long term sustainability and competition when it comes to the services needed by libraries and their users as well as the right to control over their collections. The license chosen is [CC0](#) which waives any rights the National Library have over the National Bibliography and the authority data.

<http://librisbloggen.kb.se/2011/09/21/swedish-national-bibliography-and-authority-data-released-with-open-license/>















Search

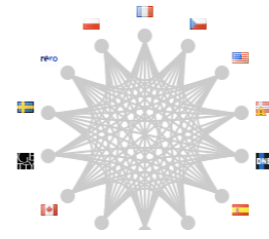
Select Field:  Select Index:  Search Terms:



Gibson, William, 1948-....   
Gibson, William   
Gibson, William, 1948-2008   
Gibson, William American writer, born 1948   
VIAF ID: 109517110 (Personal)  
Permalink: <http://viaf.org/viaf/109517110>

Preferred Forms

-   100 1 \_ [\\_ta Gibson, William, td 1948-....](#)
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-   100 1 \_ [\\_ta Gibson, William, td 1948-](#)
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-   100 1 \_ [\\_ta Gibson, William, td 1948-](#)
-   200 1 [\\_ta Gibson tb William tf 1948-....](#)



<http://viaf.org/viaf/data/>

### WorldCat

[A global library resource](#)

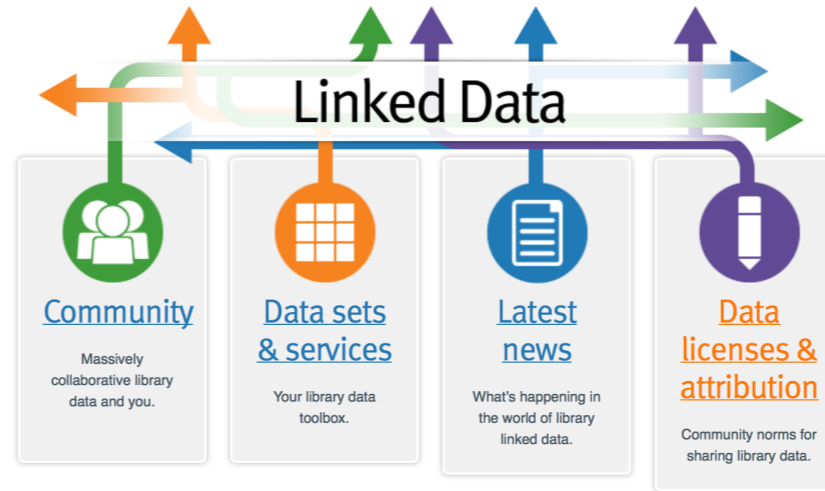
[WorldCat community](#)

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### Linked data at OCLC

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<http://www.oclc.org/data.en.html>



The image shows a screenshot of the Amazon.co.uk homepage. At the top left is the Amazon logo. To its right, a personalized greeting reads: "Hello Owen Stephens. We have recommendations for you. (Not Owen?)". Below this are links for "Owen's Amazon.co.uk", "Today's Deals", "Gift Cards", and "Gifts & Wish Lists". A navigation bar includes a search box and a dropdown menu for "All Departments". On the left, a vertical menu lists various departments: Books, Music, Games, Film & TV, Kindle, Electronics, Computers & Office, Home, Garden & Pets, Toys, Children & Baby, Clothes, Shoes & Watches, Hobbies, Sports & Leisure, Grocery, Health & Beauty, and DIY, Tools & Car. The main content area features a large advertisement for the Kindle, showing a hand holding the device. Text next to the device states "Kindle #1 Bestselling Product on Amazon" and "£89 Order now". To the right of the device are three smaller promotional tiles: "Shop Kindle Books" with book covers, "Free Kindle Reading Apps" with icons of a smartphone, tablet, and laptop, and "Shop Accessories" with images of a Kindle case and a stylus.

<http://www.amazon.co.uk>

Not necessarily about open licensing – but being clear about T&C

Amazon, Twitter, Guardian – not open, but still used. Not always the only factor. Amazon have T&C that dictate ‘purpose’ and mandate linking to Amazon – deliberate friction that has not prevented massive uptake of the API

# What is a mashup?

- a 'fusion of disparate elements'
- an act of creation, not a technology
- enabled by making resources available through widely adopted mechanisms; in formats that enable use/reuse; and with permissive licensing