



Linked Data: Implications and Applications

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Linked Data in One Slide



Linked Data in One Slide

Tom

lives in

Bristol

Tom

works for

Talis

Talis

based in

Birmingham



Linked Data in One Slide

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<http://tomheath.com/id/me>

~~lives in~~

eg:livesIn

~~Bristol~~

<http://dbpedia.org/resource/Bristol>

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~~Talis~~

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~~Talis~~

~~based in~~

foaf:based_near

~~Birmingham~~

<http://sws.geonames.org/3333125/>



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~~based in~~

foaf:based_near

~~Birmingham~~

<http://sws.geonames.org/3333125/>

foaf:name

"Tom Heath"



Implications for Applications



<http://www.flickr.com/photos/khour/>



The Document Metaphor is Everywhere!

- *“I'd better clear all those messy **files** off my **desktop** before I connect to the projector”*
- *“Damn, I sent the **email** without attaching the **file**”*
- *“<sigh> I really must update my home **page**”*



What do you want the Web to be?



<http://www.flickr.com/photos/25831000@N08/>



<http://www.flickr.com/photos/kathycsus/>



The Web is the Exploratorium



Linked Data is not about...

- Searching for a specific document
- Visiting a particular Web site
- Browsing from one (RDF) document to the next



Linked Data is about Things!



Linked Data is about Things

- Describe any aspect you like...
...of any *thing* you like!
- Give identifiers (URIs) to those things
- Interact with those things directly!

What happens to the old metaphors?





10 Tasks for Potential Linked Data Applications



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- Locating
- Exploring
- Monitoring
- Notifying
- Sharing
- Transacting
- Asserting
- Discussing
- Evaluating
- Arranging



10 Tasks for Potential Linked Data Applications

Actions on single things?

- Locating
- Exploring
- Monitoring
- Notifying
- Sharing
- Transacting
- Asserting
- Discussing
- Evaluating
- Arranging



10 Tasks for Potential Linked Data Applications

Actions on single things?

- Locating
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Adding Linked Data to the Web?

- Asserting
- Discussing

- Evaluating
- Arranging



10 Tasks for Potential Linked Data Applications

Actions on single things?

- Locating
- Exploring
- Monitoring
- Notifying
- Sharing
- Transacting

Adding Linked Data to the Web?

- Asserting
- Discussing

Aggregation and analysis of Linked Data from the Web?

- Evaluating
- Arranging



Locating

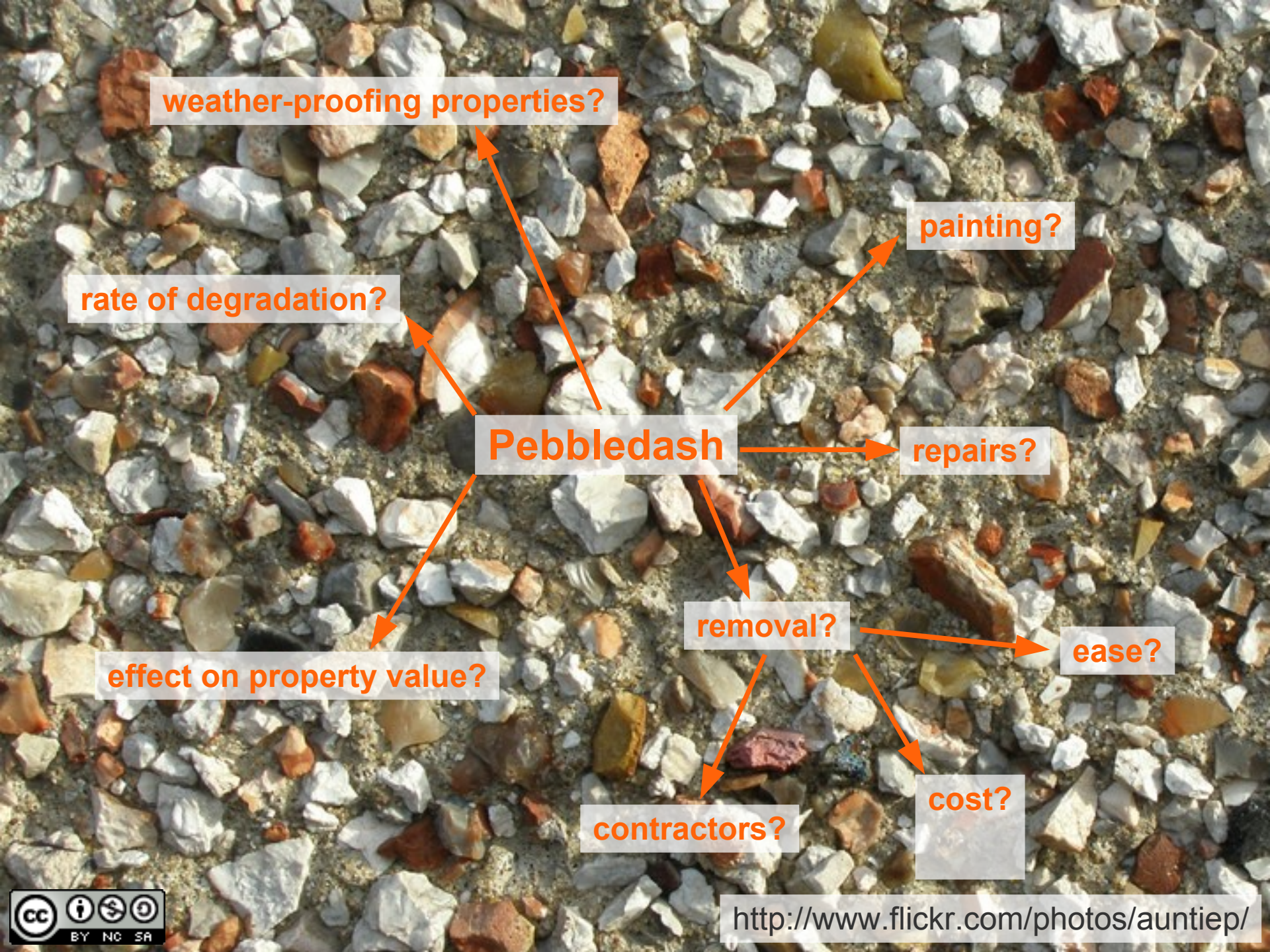
- Looking for an object or chunk of information which is known or expected to exist
 - Has a broadly identifiable target
 - e.g. the population of Aberdeen
 - e.g. a photo of a library that I can use in my presentation



Exploring

- Gathering information about a specific concept or entity to gain understanding or background knowledge
 - Has an identifiable subject
 - e.g. the concept 'pebbledash'





weather-proofing properties?

painting?

rate of degradation?

Pebbledash

repairs?

effect on property value?

removal?

ease?

contractors?

cost?

<http://www.flickr.com/photos/auntiep/>





Monitoring

- Checking something that is expected to change, in order to be aware of these changes
 - e.g. checking your email
 - e.g. RSS Feed-reading
 - Can I do an HTTP GET on the URI of an organisation to get (redirected to) a list of their press releases?
 - Can I do an HTTP GET on a URI of a country to get (redirected to) the news about that country?
 - Can you do an HTTP GET on my URI to get (redirected to) a description of my current status?



Notifying

- Informing others of an event in time or a change of state
 - e.g. emailing / tweeting / txting / IMing friends to tell them you'll be going to the pub on Friday
 - Can this just be POSTed to my friends' URIs?
 - Is this over-stretching the HTTP methods?
 - Do we need some new methods? An alternative?



Sharing

- Making an object or chunk of information available to others
 - e.g. sharing holiday photos via Flickr or MMS
 - Can an object I want to share be POSTed to my friends' URIs?
 - Or PUT to the URI of their 'in-tray'? (a bit old-school?)
 - Shouldn't we be passing by reference?



Transacting

- Transferring money or credit between two parties
 - e.g. paying a bill
 - If you owe me ten pounds, do you get to choose which pocket I put it in when you settle your debt?
 - Is the cheque in the POST?

Asserting

- Making statements of fact or opinion
 - e.g. writing a review of a restaurant
 - e.g. stating that you own (a copy of) a particular book
 - Referring to but not acting on the specified resource
 - No specific response
 - Into which data space should these statements go?
 - Not the resource owner's data space!



Discussing

- Exchanging knowledge or opinions with others on a specific topic
 - e.g. posting a comment on a discussion forum or blog
 - Equivalent to multiple instances of the *Asserting* task?



Evaluating

- Assessing a number of alternative options
 - e.g. choosing a pebbledash removal contractor
 - e.g. selecting a hotel near Paddington station for less than a hundred pounds (without bed bugs)?
 - Multiple points of reference and dimensions of assessment
 - Location and Capability and Certification
 - Location and Object Type and Cost and Cleanliness



Arranging

- Coordinating with third parties to ensure that something will take place or will be possible at a certain time
 - e.g. arranging travel and accommodation for a Linked Data meetup
 - If the arrangement has an identifiable target, can't we provide an actionable, machine-readable specification?



Conclusions



Conclusions

- A document-centric perspective hides things inside documents, and constrains our imagination
- If you don't feel constrained, then you're not thinking hard enough :)
- Linked Data promotes all things to first class Web citizens
- We need apps for actions on all types of things
- What thing-centric metaphors can we adopt? From where?



Discussion

- Slides
 - <http://tomheath.com/slides/2010-02-london-linked-data-implications-and-applications.pdf>
- Further Reading
 - “How will we interact with the Web of Data”
 - Tom Heath
 - <http://tomheath.com/publications>
 - “The problem with breadcrumb trails”
 - Michael Smethurst
 - <http://derivadow.com/2010/02/18/the-problem-with-breadcrumb-trails/>