

# What's in a name?

The latest controversy over  
XML namespaces

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# The problem

- What do relative URI references mean in namespace declarations?
- The specification answers this question.
- What's the problem again?
- People don't like the answer, and it's confusing

# The W3C has decided the question

- And the answer is...
- We don't know, so we advise avoiding them until it's been figured out.
- With the news out of the way, perhaps we'd like to understand what it means?

# **Prologue: What are namespaces?**

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# The specification's viewpoint

- A way to globally declare and recognize global element names
- By using a URI to disambiguate the names
- To enable (limited) interoperability

# What is a URI?

- Either a URN, or a URL
- URNs: RFC 2181 (syntax), 2483 (services), 2611 (assignment)
- Still experimental
- The point of URNs Global, Persistent, Unique

# What are namespaces good for?

- 3 things (I think):
  - Define a global context that can be extended
  - Create element types that can be mixed into an arbitrary context
  - Record “human semantics” or “meaning” in a limited way

# Is that enough to make all the fuss worthwhile?

- Yes.
- The limitations of namespaces as they currently exist are related to “defining meaning”
- This is an old problem, and all known formal systems have a “grounding problem”

# Unique naming

- Key focus of the existing spec
- Enabled by:
  - Deterministic comparison algorithm
  - Distributed authority

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# Some desiderata

- Should work for arbitrary applications
- Can't demand application have universal knowledge
- Shouldn't require network traffic to function
- Should integrate with the web architecture

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# Back to our problem

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# What's wrong with the spec?

- There are 3 popular answers:
  - Nothing
  - Almost everything
  - A few bugs

# There's nothing wrong

- URIs are a decent distributed naming authority
- URLs aren't perfect, but URNs are coming along
- The comparison algorithm is well defined

# Almost everything is wrong

- Namespace URIs are not linked to resources
- Relative namespace references are allowed but are compared by very un-web-like rules
- Because the resource situation is undefined, there's no growing room.

# A few bugs

- This position is not a single one, but represents a variety of possible compromises
- One view:
  - the basic goals of the namespace spec are unassailable
  - The current handling of URIs leaves little growing room
  - It does not integrate elegantly with the web

# Some issues that fuel the disagreement

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# Unique naming vs. relative addressing

- The standard interpretation of a URI reference allows relative addressing (a life-saver in managing retrieval of data)
- It saves a life by allowing one string to represent several different possible URIs
- It makes unique identification more problematic.
- Which is more important, unique identification, or standard URI processing?

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# Is the notion of a “namespace URI” well defined?

- Arguably not, because the references are not interpreted normally
- Arguably not, because the specification explicitly decouples the namespace from the URI’s resource, using the URI only a conveniently unique string.
- For the moment, the W3C prescribes agnosticism on this issue

# Is there a resource at the namespace URI?

- Assuming that “namespace URI” makes sense, what sense would it make?
- In principle, there’s always one (by definition)
- The namespace spec. does not depend on what it is, or define its properties
- Would we want it to be simply a unique string forever, or might we want more?

# What kind of resource would be needed?

- A catalog of meta-information about the namespace
- A schema defining the namespace
- A semantic specification (like RDF) of the meaning of the namespace
- Code to process it in some context
- We could even indirect from this URI to another one that is the real name

# Alternatively...

- You could just use MIME types to pick out the right type or response to give to a request for a namespace resource.
- I think that this fails, because MIME types are not expressive enough

# The proposals

- There were four proposals that had vocal support:
  - Forbid
  - Define
  - Deprecate
  - Context
  - Literal

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# Forbid

- Favors unique identification and deterministic comparison above all else
- Fixes the hole in the spec by limiting the scope
- Is semi-compatible with the web.

# Define

- The most interesting proposals were in this class; also the most disagreement.
- Proposals here vary in their approach to the tradeoffs involved in defining actual consequences for a namespace declaration.
- While there was raging lack of agreement about *what* to define, many would like to, if possible

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# Deprecate

- This saves existing documents; retains compatibility with the existing standard
- Allows a new meaning to be defined at some later date.
- Allows progress on delayed standards

# Context

- This proposal is one that garnered vocal support, and that I don't fully understand.
- A URI is processed in a context, and that may affect the choice of a base URI
- It may affect the choice of a comparison algorithm
- It may affect assumptions about what lies at the end of a URI

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# Literal

- Preserves Unique identity and related goals.
- Does not leave a place for relative URI references.
- Based on a good philosophical reason for separating the concerns of metadata retrieval and identification

# The outcome of the plebescite

- Deprecate now
- Define ASAP (new working group).
- In the meantime, no W3C spec to make assumptions about how relative URI references in namespaces are to be processed

# Summary

- The agreement over the namespace specification was real but very fragile
- The underlying differences are issues of requirements, architectural coherence and visions of the future
- Perhaps, however, the minimalist approach of namespaces was not such a bad idea: by doing relatively little, even this level of disagreement may be resolvable.

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# Recommendations

- Do get involved if you have new/good ideas
- Read as much of the prior debate as you can, and *be patient*.
- *Don't be **too** philosophical!*

# Stuff to read:

- XML 1.0
- Namespaces in XML
- RFC 2396
- The final decision