Here’s a list of all the things I want to add to DP 4.0, which will be targeted for .NET 4.0 and beyond.

*Make proxy creation pluggable*. That is, don’t have a direct tie-in into System.Reflection.Emit. Have implementations for:

* System.Reflection.Emit
* CCI
* Mono.Cecil
* IKVM

*Look into Pex’s ExtendedReflection – i.e. managed profiling*. If this could work, this may mean non-virtuals could be hooked.

*Allow for collectable dynamic assemblies*. SRE now has the ability to do this in .NET 4.0. Support this.

*Allow client to ask proxy to support IDynamicObject*. This would be useful in dynamic language scenarios. Basically, the idea is to be able to intercept non-virtual methods via System.Scripting.Actions.IDynamicObject. Also, seeing if a "missing method" idea can be worked into dynamic proxies (although this may be off-focus).

References:

http://blogs.msdn.com/cburrows/archive/2008/10/28/c-dynamic-part-ii.aspx

http://community.bartdesmet.net/blogs/bart/archive/2008/11/10/introducing-the-c-ducktaper-bridging-the-dynamic-world-with-the-static-world.aspx

http://www.dev102.com/2008/11/03/c-40-dynamic-lookup-are-you-kidding-me/

http://saftsack.fs.uni-bayreuth.de/~dun3/archives/first-look-ducktyping-c-4-0-idynamicobject-metaobject/202.html

http://msmvps.com/blogs/jon\_skeet/archive/2008/10/30/c-4-0-dynamic-lt-t-gt.aspx

http://michaelbraude.com/2008/12/introducing-mimics.html

*Support interfaces and abstract classes*. I think this is the right approach. Need to have some thought on how to do this (i.e. all the edge-cases that can come about when you’re given an abstract class + 3 interfaces and there are “conflict” with the intersection).

*Different callback binders*. Right now, the proxy gets a list of IInvocationHandlers. I’ve toyed with the idea of passing in objects that have “matching” methods so the proxy would callback to those methods (which would potentially make things quicker). Also, maybe the callback receiver wants to use events, although that could get awfully messy in a hurry. Think TypeMock’s DoInstead where it gets a context with an Instance (which could be strongly-typed) and a list of Parameters.