

Thank you very much to the CodeX folks for honoring me and Kevin with this prize.
I am delighted to accept it. I'm sorry not to be there in person at Stanford...

I'd like to take about 5 minutes to give you an idea of the trajectory that took us to HYPO & beyond.

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I've always been interested in how one constructs clever examples and counter-examples, especially in math.

Examples can be pivotal in the dialectic – the back and forth – of proving and refuting conjectures. They are key to teaching and to understanding mathematics. This is true even for high school subjects like algebra and geometry.

To create useful examples (that satisfy certain desiderata or constraints), one often modifies mathematically germane features of existing examples so that they have more or less of a particular property.

The same is true in law, for instance, in oral argument or Socratic teaching.

That takes us to HYPO.

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To create telling and artful hypos, one often alters clusters of facts that are doctrinally relevant. You can think of this as projecting a complex multi-dimensional case onto a subspace of facts and moving it around there – particularly to explore how the case might be strengthened or weakened.

That is the essence of the idea of Dimensions.

A key element in HYPO, dimensions capture:

“legal relationships between clusters of operative facts and conclusions they support or undermine” and “along which a hypo can be modified in ways that have legal significance for one party or the other.”

For example, in the law of trade secrets misappropriation (HYPO's domain):

the more people you, the plaintiff, tell about your secret, the weaker your claim that it was misappropriated by defendant.

In the law concerning the home office deduction:

the more “regular” your usage of your home office, the stronger your claim for taking the deduction.

HYPO started out as a project to explore the creation of hypotheticals in argument, and grew to become the HYPO system as you know and love it, that is, Kevin's Ph.D. dissertation.

HYPO used dimensions for case analysis and retrieval, case comparison, precedent-based argument, hypo creation, etc.

Dimensions can also be used to create “slippery slope” arguments familiar to all law students or “constellations” of hypos that you sometimes see in Supreme Court oral argument.

When Kevin arrived at Pitt, he pushed the basic ideas in HYPO in significant new directions. For instance, he used “factors” instead of dimensions to create landmark systems like CATO.

In my lab at UMass, we continued to use HYPO-style mechanisms – especially dimensions – in our work. David Skalak and I took these ideas into the realm of statutory law in our CABARET system. CABARET combined HYPO-style case-based reasoning with traditional rule-based reasoning (in the Home Office Deduction domain). We used a HYPO-style front end to make information retrieval more intelligent (in Chap.13 personal Bankruptcy).

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I believe that lessons learned from HYPO could be used right now to improve our systems.

I feel that it is **imperative** that we provide **good explanations (on demand)** in any systems to assist in the automation of legal tasks. “Because I say so” just isn’t good enough. Our systems should not be opaque. Explanation/justification/argument are all inextricably intertwined. Hypos, cases, and examples play a central role in all of them.

It is crucial for users to understand the conclusions/recommendations/ramifications – of a system in order to learn what changes of facts/behaviors/policies could improve or weaken their situations. We owe this to our users.

I hope future research will take the ideas that we pioneered in HYPO and its progeny and push them further to improve the kinds of systems of interest to the CodeX community.

For now though, thank you once again.