Why? Humans need models to represent every kind of knowledge. To share knowledge humans have to unify models.

What? Given two data models $M_1$ and $M_2$ (like ER, Relational, Object Oriented, Object Relational, XSD, ...), and a schema $S_1$ of $M_1$ (the source schema and model), we generate a schema $S_2$ of $M_2$ (the target schema and model), corresponding to $S_1$ and, for each database $D_1$ over $S_1$, we generate an equivalent database $D_2$ over $S_2$.

How? We use a framework that allows the definition of any possible model and the definition of translations from a model to another.

### Metamodel
The constructs in the various models are rather similar and can be classified into a few categories.

We can fix a set of metaconstructs and define models in terms of the metaconstructs they use.

### Supermodel
A model that includes all the metaconstructs.
Each model is subsumed by the supermodel.
Each schema for any model is also a schema for the supermodel.

### Translations
Translations can be defined on metaconstructs.
Each translation from the supermodel $SM$ to a target model $M$ is also a translation from any other model to $M$.

Given $n$ models, we need $n$ translations, not $n^2$ but we still have too much models.

Elementary translation steps to be combined:
Each translation step handles a supermodel construct (or a feature thereof) "to be eliminated" or "transformed".
A translation is the concatenation of elementary translation steps.
Basic translations are written in a variant of Datalog, with OID invention.

### Example: A Complex Translation from ER to OO

- Eliminate N-ary relationships
- Eliminate attributes from relationships
- Eliminate many-to-many relationships
- Eliminate generalizations
- Replace relationships with references