

# ***Seven Deadly Sins of Data Modelers***

***a talk presented to***

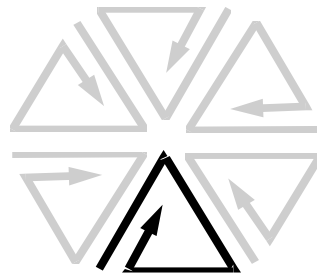
***DRMA Seattle***

***January 8, 2002***

***by***

***Gary Schuldt***

*DAMA International Individual Achievement Award Winner*

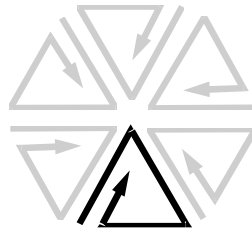


**SYNCRETICS**

# ***Seven Deadly Sins of Data Modelers***

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## ***about Syncretics . . .***

*Syncretics provides education and consulting in developing information systems. We specialize in a data-centered approach and have offered courses on a wide variety of system techniques, including Information Modeling, Access Modeling, Database Design, Performance Tuning, Prototyping, Data Warehouse, Process Modeling, and Event Modeling. Our courses have been taught world-wide.*

## ***about Gary Schuldt . . .***

*Gary is the principal consultant and instructor for Syncretics. He has been involved in information technology since 1965. He is noted for his contributions to data modeling teaching and methodology. Recently he has consulted as a data architect for both large brick and mortar companies as well as dotcoms.*

## ***Seven Deadly Sins of Data Modelers***

***A. Starting Point***

***B. Linguistic Skills***

***C. Worlds We Inhabit***

***D. Modeling Practices***

***E. Marketing!***

***F. Avoiding Living in Sin***

### **Catalog of Sins:**

- ✓S-1: “verb deaf”
- ✓S-2: “one-way street”
- S-3: “designer’s world”
- S-4: “process modeler’s world”
- S-5: “hierarchy world”
- ✓S-6: “hybrid”
- S-7: “Ron Ross entity modeling”
- ✓S-8: “low analyst pride”
- ✓S-9: “cooking our own goose”
- ✓S-10: “naïve expectations”
- ✓S-11: “miscast”
- S-12: “entity/attribute confusion”
- ✓S-13: “relationship phobia”
- ✓S-14: “fuzzy rationale”

## **A. Starting point**

➤ ***We all play roles:***

- *analyst*
- *designer*
- *programmer*
- *project manager . . .*

➤ ***Analysis models offer relevant abstractions useful for:***

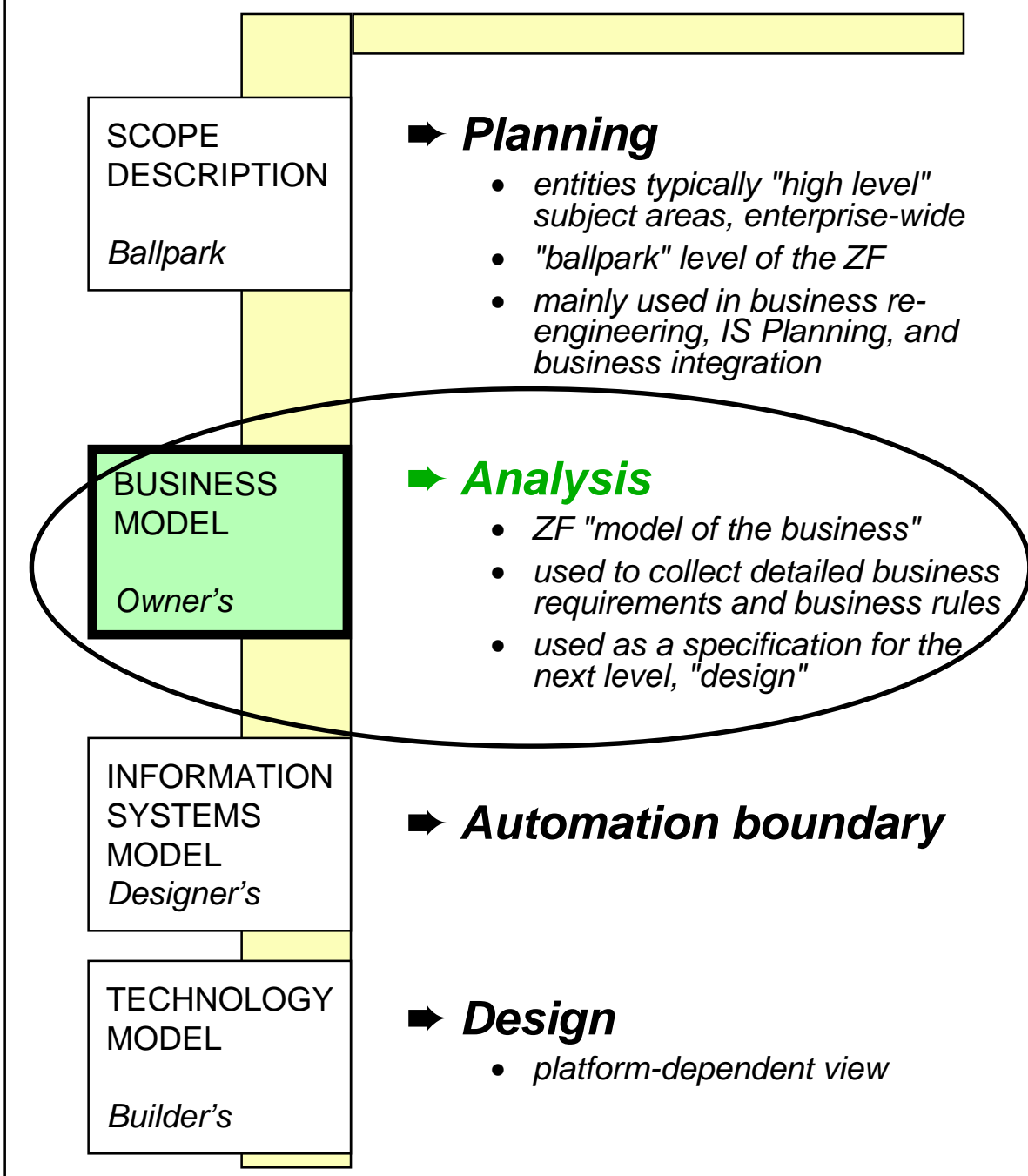
- *requirements specification*
- *business improvement*

➤ ***We are talking about “business data modeling”***

*(see next page)*

SEVEN DEADLY SINS OF DATA MODELERS

## “Analysis” and the rows in the Zachman Framework:



## **“Sin Analysis” Methodology:**

**S-*<id>*:** *<“nickname”>*

 ***<description>***

*Examples:*

*(concrete manifestations of the sin)*

*Why is it sinful?*

*(why the world is worse off when we commit it)*

*Psychology / Explanation:*

*(possible reasons why “The Devil made me do it!”)*

## B. Linguistic Skills

### S-1: “verb-deaf”

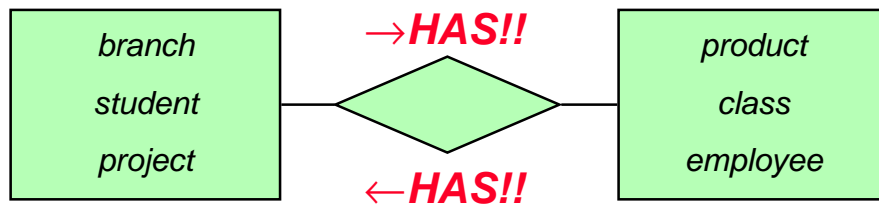
☹ **Failure to listen to the business verbs**

*Examples:*

“ . . . a branch **stocks** specific products”

“ . . . students **enroll in** classes . . . ”

“ . . . a project **is staffed by** employees . . . ”



*Why is it sinful?*

- transfers ownership from user to modeler
- makes modeling harder (elusive relationships)!

*Psychology / Explanation:*

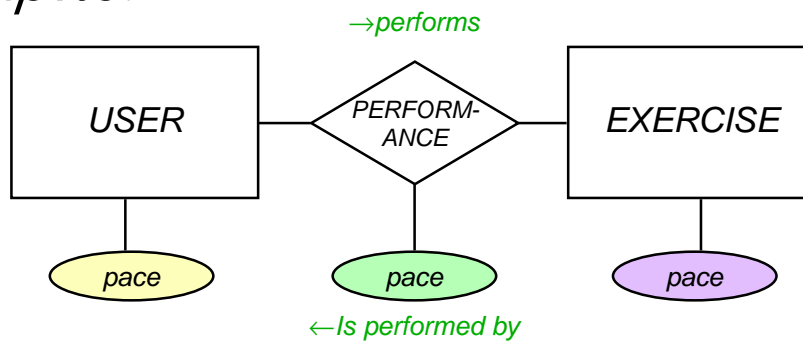
- ? ? (related to S-13, relationship phobia?)

## B. Linguistic Skills (cont'd)

### S-2: “one-way street”

☹ **Inability to translate the model back into the business scenario**

*Examples:*



*Why is it sinful?*

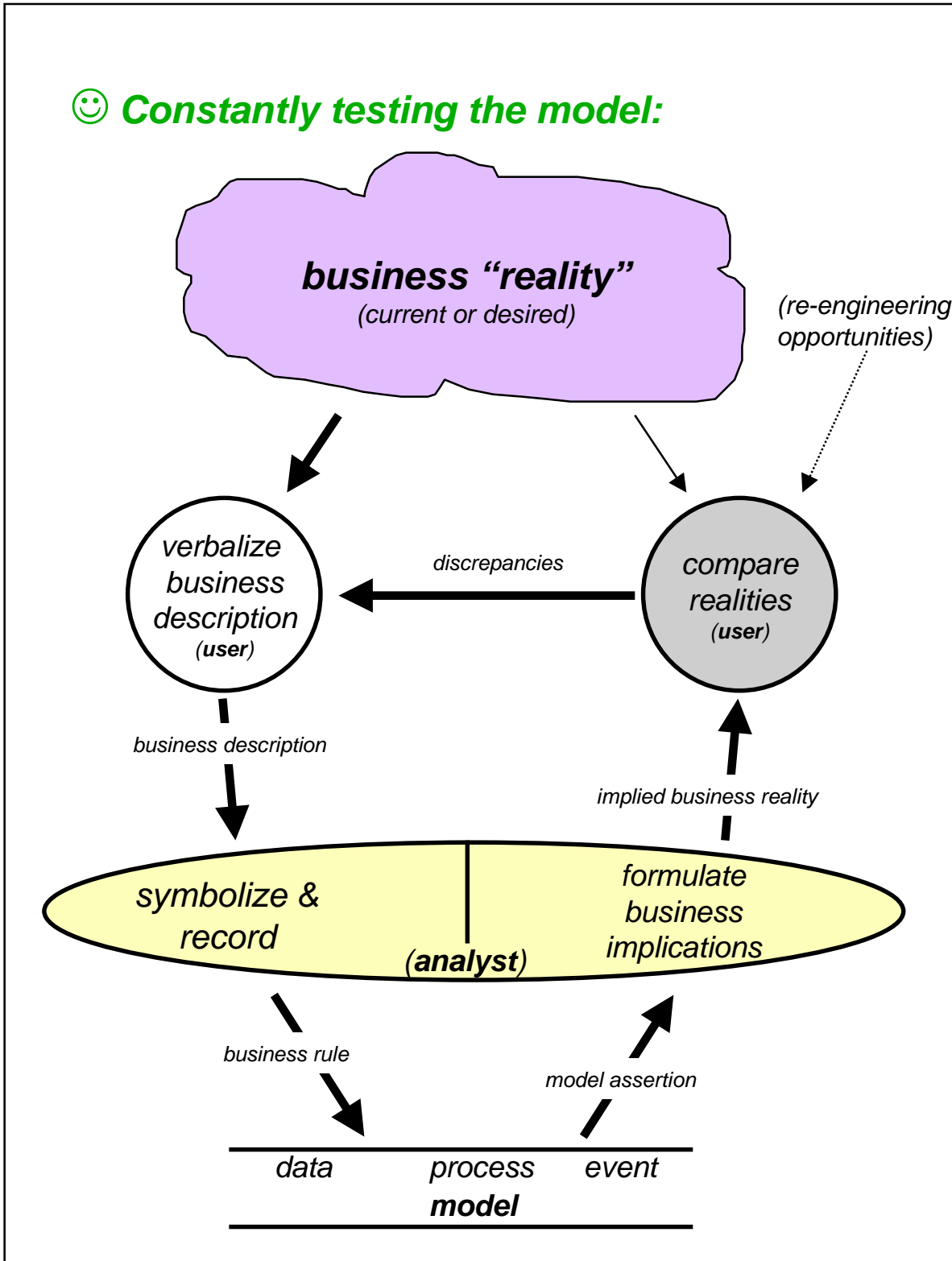
- *the model, if unvalidated, might be wrong!*
- *missed opportunities for business improvement*

*Psychology / Explanation:*

- *we don't regard "models" as reflections of business reality (nor as specialized languages)*

SEVEN DEADLY SINS OF DATA MODELERS

😊 **Constantly testing the model:**



## C. Worlds We Inhabit

### S-3: “designer’s world”

☹ **Allowing design issues to influence the content of the business data model**

*Examples:*

- “Too many tables!”
- “Too many joins!”
- “It’ll be a table--so it **must** be an entity!”
- “We don’t attribute derivables!”
- Over-generalization and metamodeling

*Why is it sinful?*

- *System performance criteria are simply inappropriate for business models*
- *Hides business rules*
- *Defeats the “separation of concerns” (chunking)*

*Psychology / Explanation:*

- *Analysts were once designers/programmers*
- *Lack of role clarity*
- *Resistance to multiple model types*

## C. Worlds We Inhabit (cont'd)

### S-10: “naïve expectations”

☹ **Underestimating the task of defining, rationalizing, and reaching consensus**

#### *Examples:*

- A large phone company ended up paying \$2.5M to define “phone number”!
- Models with vague or missing definitions

#### *Why is it sinful?*

- Models end up being superficial, irrelevant, or wrong . . . and become frustrating to use
- Businesses have a secret craving for (some) crisp definitions

#### *Psychology / Explanation:*

- We lack lexicographical training and experience (it’s easier to document data structures)
- Irrational optimism (borne of hubris?)

## C. Worlds We Inhabit (cont'd)

### S-11: "miscast"

☹ **Trying to play "data analyst" without the temperament**

*Examples:*

- "I found out I didn't WANT to be a data analyst!"
- A rocky facilitated session

*Why is it sinful?*

- A business model that looks like a db design
- The project suffers

*Psychology / Explanation:*

- Lack of awareness of analytic skills:
  - Communication
  - Facilitation
  - Creating and using business models

## D. Modeling Practices

### S-6: “hybrid”

#### ☹ **Creating hybrid model components**

#### *Examples:*

- *intelligent id's*
- *substituting attributes for subtypes (E's & R's)*
- *foreign keys within entities*
- *failing to differentiate*
- *null-valued attributes*

#### *Why is it sinful?*

- *produces systems resistant to evolution*
- *conceals complexity . . . but passes the complexity buck to the processes*
- *reduces plug-n-play-ability*

#### *Psychology / Explanation:*

- *“More components = more complexity”*
- *“denial” is an undeniable human trait!*
- *sloppy thought processes (bad classification)*

## **D. Modeling Practices** (cont'd)

### **S-13: “relationship phobia”**

☹ **Failure to respect entity relationships**

*Examples:*

- using “foreign keys” to represent relationships
- primitive relationship names (directional, “has”, “comprises”, “is-a” . . . )
- demoting interesting relationships to entityhood

*Why is it sinful?*

- proliferates “faux entities and relationships”
- distorts the model <-> business alignment
- misses opportunities for business improvement

*Psychology / Explanation:*

- our “relational” indoctrination
- impatience to complete the model (and relationships are WORK!)

## D. Modeling Practices (cont'd)

### S-14: “fuzzy rationale”

#### ☹ **Failure to clarify the purpose of the model:**

- + package selection and / or integration
- + business improvement
- + database specification

#### *Examples:*

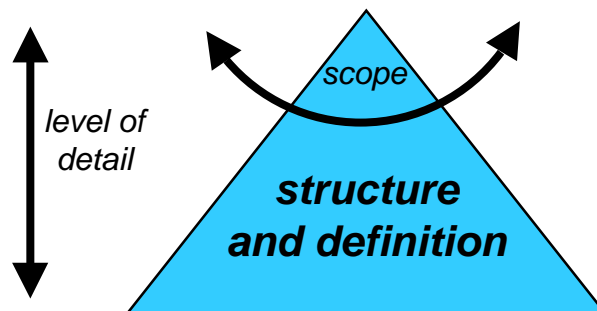
- models that lack what's needed
- models that contain superfluous information

#### *Why is it sinful?*

- project goals are not met

#### *Psychology / Explanation:*

- failure to appreciate that a subject matter model is a complex artifact:



## **E. Marketing!**

### **S-8: “low analyst pride”**

☹ **Failure to stand up for our own profession**

#### *Examples:*

- *assuming “the user is always right!”*
- *failure to apply scientific engineering principles to our own work*
- *failure to live the “business partner” role*

#### *Why is it sinful?*

- *we end up with badly designed systems*
- *we have problems controlling our projects (i.e., “estimating” is really “negotiating”)*
- *unmanageable business complexity*

#### *Psychology / Explanation:*

- *we are too busy learning the next paradigm*
- *we lack training in “true business analysis”*

## **E. Marketing!** (cont'd)

### **S-9: “cooking our own goose”**

☹ **Failure to market our product (model components)**

*Examples:*

- “Too many entities!”
- “Too many subtypes!”
- “Hide those relationships!”
- (Our most unpopular heuristic . . .)

*Why is it sinful?*

- We’re putting ourselves out of work!
- We’re shortchanging our employers.

*Psychology / Explanation:*

- We were trained as technicians, not marketers

## **E. Marketing!** (cont'd)

### **S-8 & S-9:**

#### *Comments:*

- *What should the “M” in “IRM” stand for today?*  
(CSF for IRM'ers: reuse count)
  
- *We should be in the business of **providing “information products”** to our employers to **enhance their marketplace viability***  
(the survival law of “requisite variety”)

#### *Analogies:*

- *supermarket*
- *bill of materials paradigm*
- *periodic table of elements*
- *the genetic code and genetic engineering*
- *creative writing (!) . . .*
- *.*

## ***F. Avoiding living in sin:***

### *Metaphors for the analyst:*

- *the base runner in a baseball game*
- *the psychoanalyst*
- *the archaeologist*
- *the scientist*
- *the attorney in the courtroom*
- *the mirror (reflector)*
- *the midwife*
- *the lead dancer*
- *the genetic engineer*
- *...*

*Thank you!*