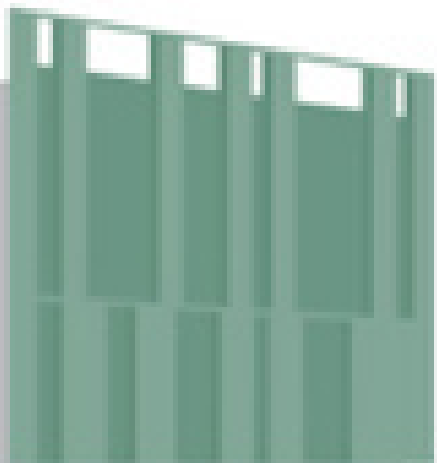


FRBR Group 1 as a Preservation Administration Framework



Jacob Nadal

Executive Director, ReCAP

jnadal@princeton.edu



The Problems of Preservation

- How to preserve a thing
- Which things to preserve ←
- For whom (or for what use) ←
- For how long





Why FRBR: Version 1

- FRBR marries analytical and descriptive bibliography
- Similar to preservation model of intellectual content and artifactual value
 - Intellectual content requires an artifactual carrier
 - No necessary relationship between artifactual value and intellectual value
 - ↳ Useful information in poorly made books (*Dover, PoD*)
 - ↳ Materially fascinating books with no particularly valuable information (*Gutenberg Bible*)





Why FRBR: Version 2

- Major professional trauma: Nicholson Baker's *Double Fold*
 - Libraries understood "newspaper" to mean a particular kind text
 - Baker understood "newspaper" to mean a particular kind of artifact
 - Neither party was wrong
 - ↳ Though one of the notable American authors involved was pretty rude. *Ahem.*



Mismatch of Levels

- Preservation controversy occurs when different FRBR levels are used for:
 1. Detection of problems and
 2. Implementation of solutions*



* Implementing Solutions: Materials & Rendering

- **Substrate:** material substance(s) of the object
(e.g. paper, film, aluminum, silicon)
 - **Media:** the material substance(s) that record information
(e.g. ink, silver, ferrous alloys, electrons)
-
- **Transport:** the means of moving information from the Media to the reader
(e.g. light, light, SATA bus, USB bus)
 - **Language:** the semiotic system(s) that renders the information in a meaningful way
(e.g. Latin, Cinema studies, TIFF, PDF)



* M&R in FRBR: Highly Speculative

FRBR Group 1	M&R	Notes
Work	No equivalent	Preservation has to have an object.*
Expression	Language	Each way of expressing a work has semiotic implications. Consider translations.
Manifestation	Transport	The way an expression is recorded implies the way it has to be rendered back.
Item	Substrate + Media	The item is the <i>concrete</i> endpoint for FRBR. *Note that preservation “doubles up” here.





FRBR: For Description

- **Work:** a distinct intellectual or artistic creation
- **Expression:** specific intellectual or artistic form that a Work takes each time it is realized
- **Manifestation:** embodiment(s) of an Expression [with the same] intellectual content and physical form
- **Item:** a single exemplar of a Manifestation; the entity defined as Item is a concrete entity





FRBR: For Description

- **Work:** a distinct intellectual or artistic creation
- **Expression:** specific intellectual or artistic form that a Work takes each time it is realized
- **Manifestation:** embodiment(s) of an Expression [with the same] intellectual content and physical form
- **Item:** a single exemplar of a Manifestation; the entity defined as Item is a concrete entity






FRBR: For Preservation

- **Item:** Preservation **must address a concrete entity**, which can be:
 - *repaired* in conservation
 - *created* during reformatting
 - *stabilized* through preservation
- **Manifestation**
- **Expression**
- **Work** -----

Preservation actions support outcomes at one or more of these levels





Preservation in a FRBR context

Preservation only act on *Items*

- These items may be important **entities** (*special collections?*) or may be **instances** of a *W, E, or M* (*research collections?*)
- Each Item preserves one *WEM* → *I* chain
- Preservation **success** at one level (*W, E, M, or I*) can **coexist with** preservation **failure** at another level



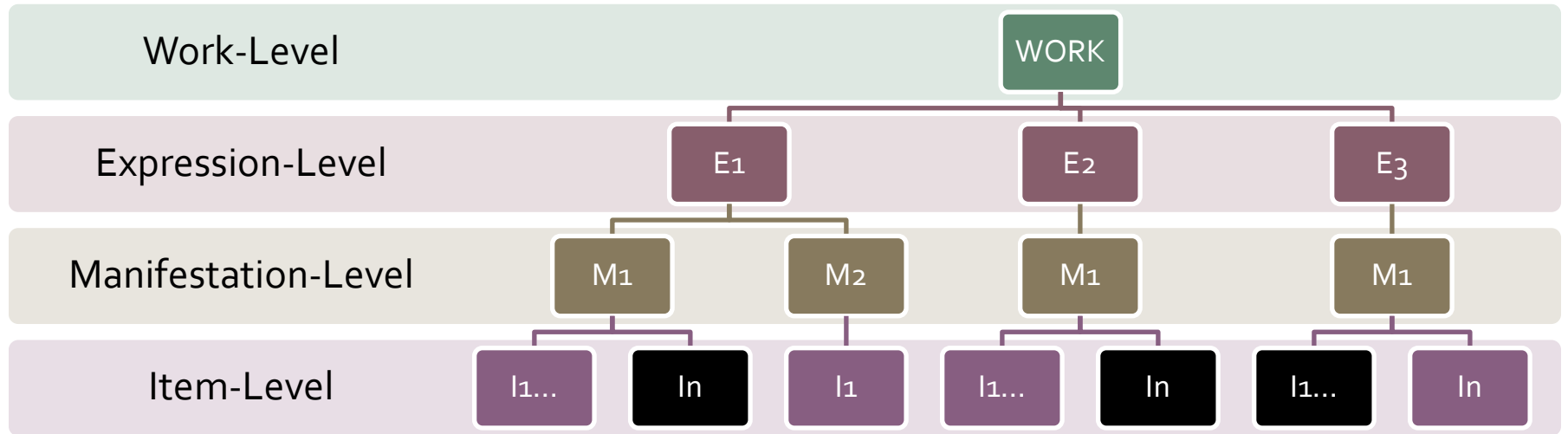


Preserving Items

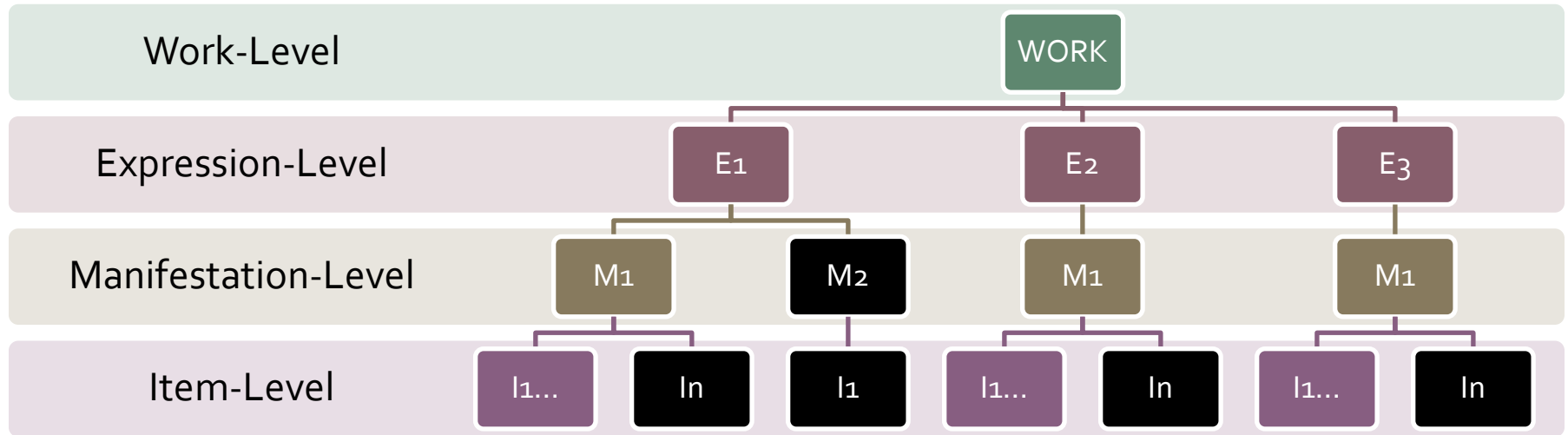
- Easy to confuse M and I in preservation
 - M -level & up is **preservation** (*risk management*)
 - I -level is **conservation** (*corrective/preventative treatment*)
 - $I_1M_1 \rightarrow I_1M_2$ is **reformatting** (digitization, etc.)
 - ↳ Working (*not PARS approved*) definitions in FRBR terms:
 - “Preservation consists in activities that improve the likelihood of ongoing access to existence of $M, E, \text{ or } W$ ”
 - “Conservation consists in activities that perpetuate the existence of I ”
 - “Reformatting consists in activities that perpetuate the existence of E or W through the creation of new I and M ”
- If I_x has unique value and cannot be exchanged with I_y
 - Implies that $I \equiv M$: “Item-Manifestation Equivalence”
 - ↳ Working (*not RBMS approved*) definition for special collections could be made in FRBR terms:
 - “Collections where all I have Item-Manifestation Equivalence”



Manifestation-level Preservation



Expression-level Preservation



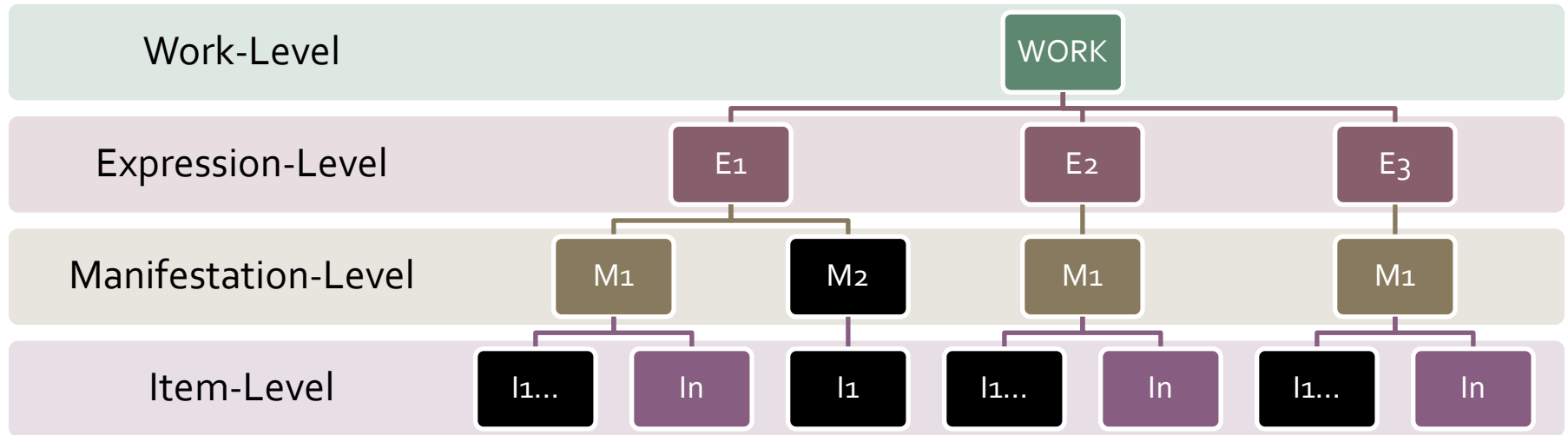
Multiple Copies in Many Manifestations:
Low risk and Easy Access



Expression-level Preservation

E preservation possible with many *I* loss scenarios, but...

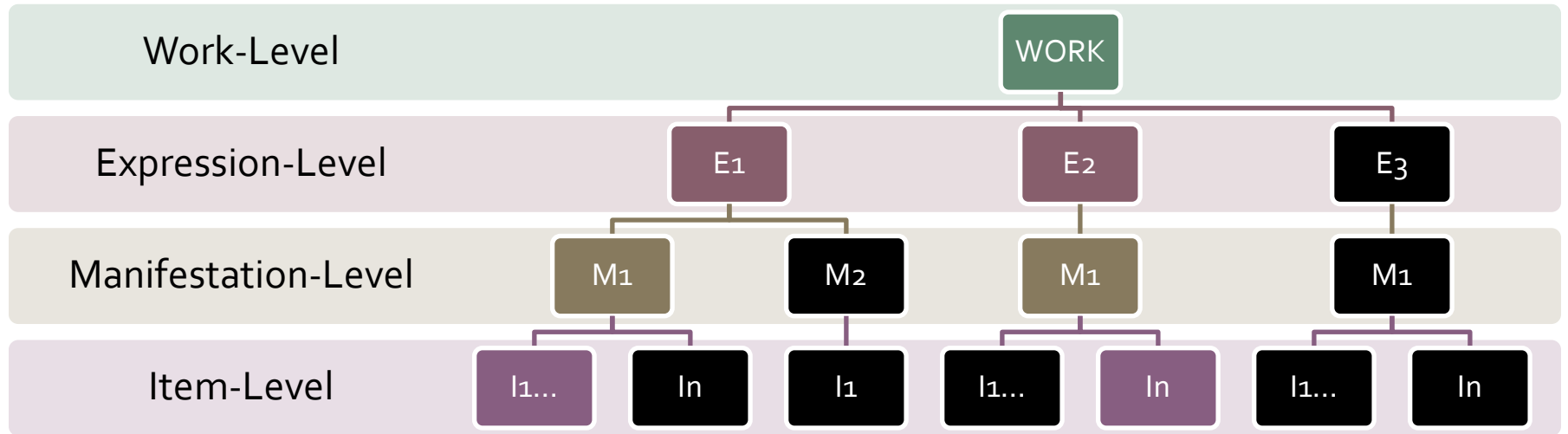
Does *E* preservation require all *M*s?



Many *M*, but only in Last/Single Copies:
Higher Risk and/or Less Access

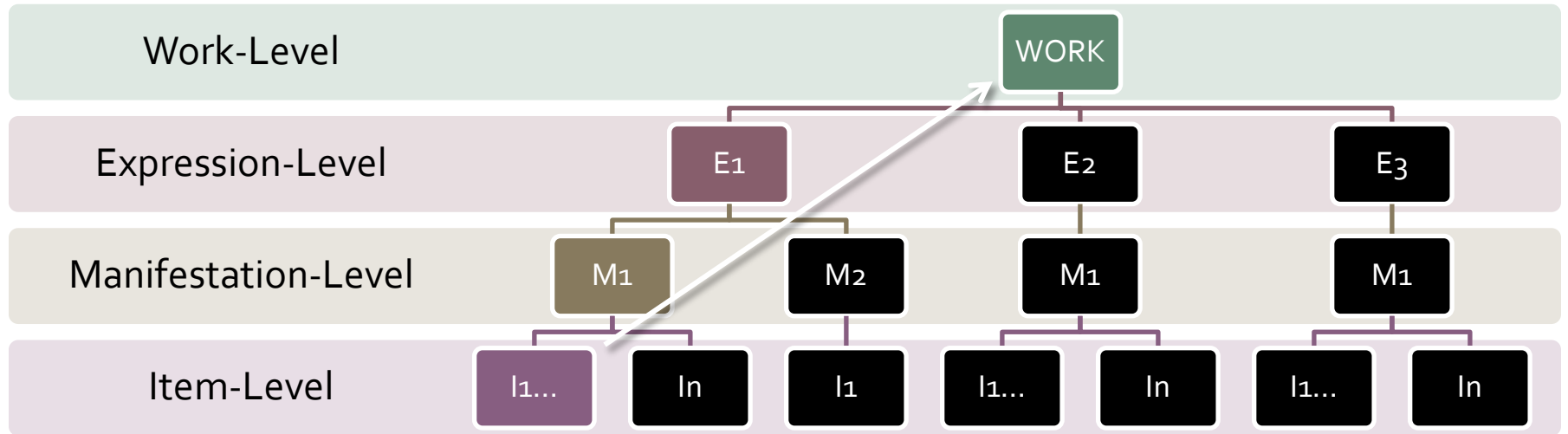


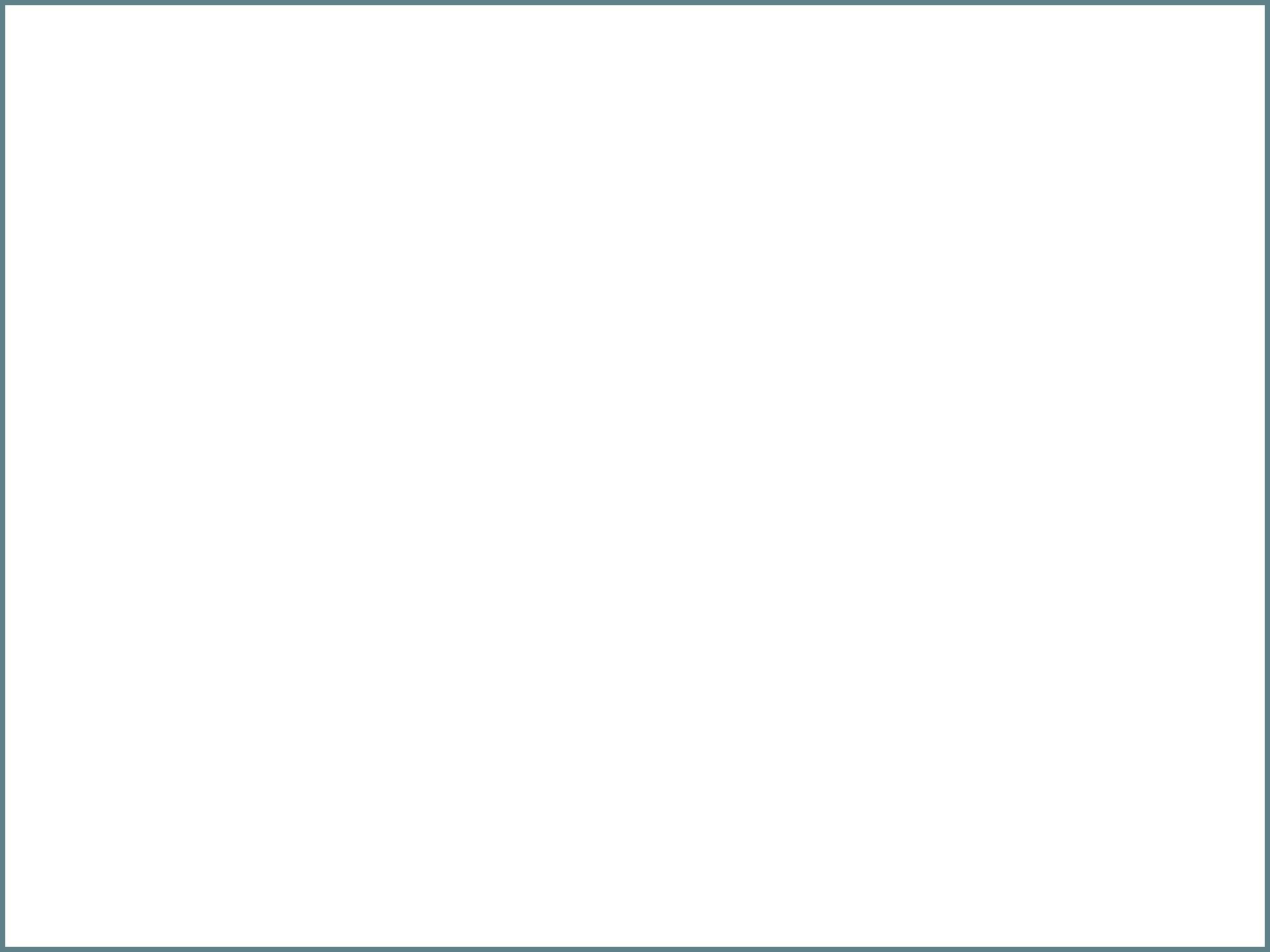
Work-level Preservation



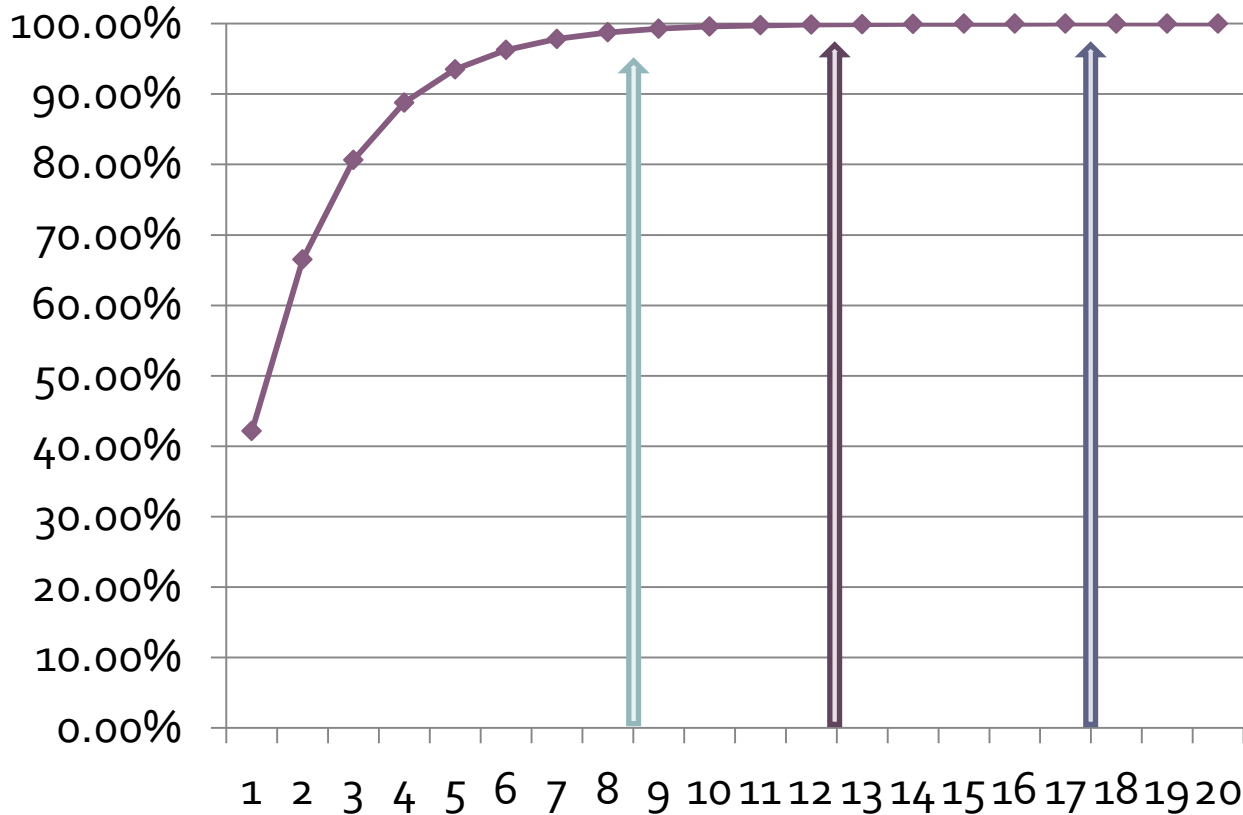
Work-level Preservation

Must require at least one *I* (realizes an *M* of an *E*)... but Does *W* preservation require all *E*s?





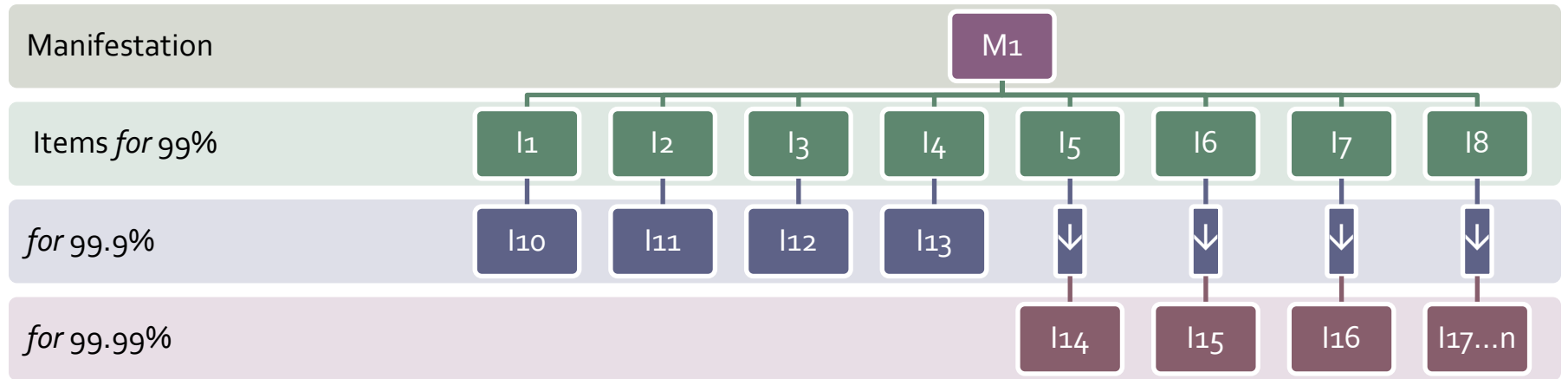
Risk Management: Initial I for likelihood of (1) I in 2100 C.E., given a 1% annual loss rate



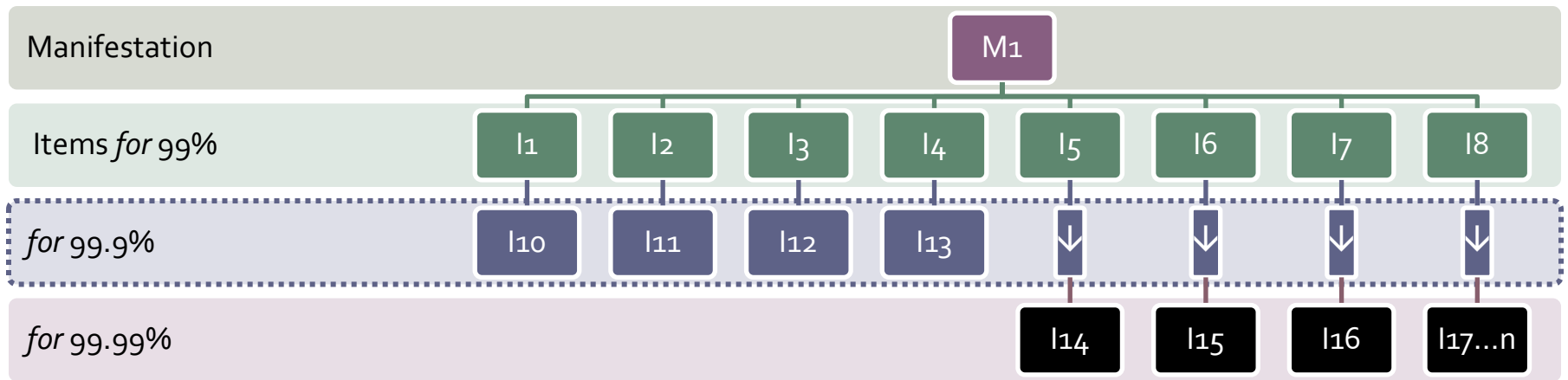
Initial number of copies	Survival probability in 2100 CE (1% loss)
1	42.13%
2	66.51%
3	80.62%
4	88.79%
5	93.51%
6	96.25%
7	97.83%
8	98.74%
9	99.27%
10	99.58%
11	99.76%
12	99.86%
13	99.92%
14	99.95%
15	99.97%
16	99.98%
17	99.99%
18	99.99%
19	100.00%
20	100.00%



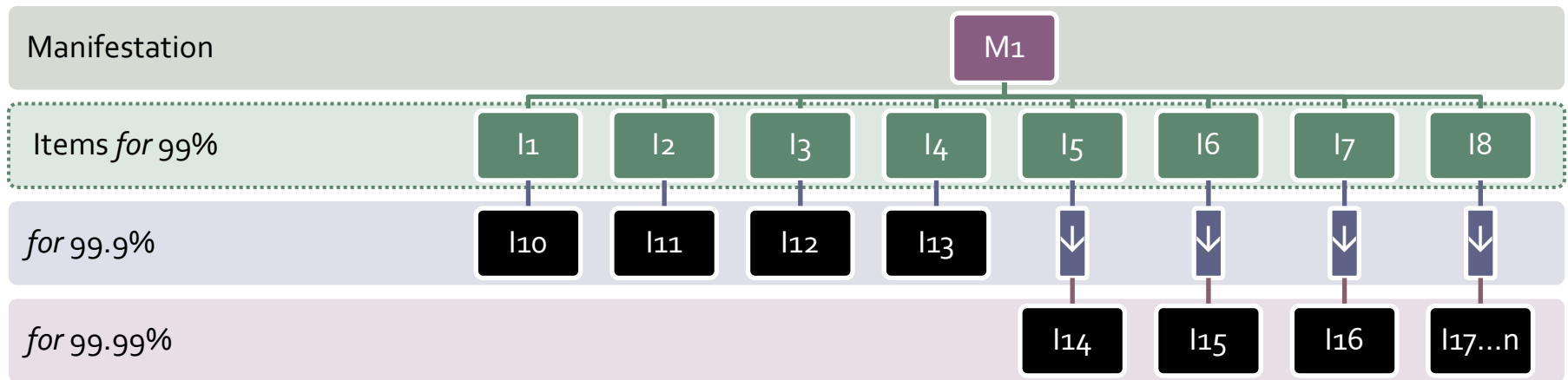
No *M*-level risk: Many *I*



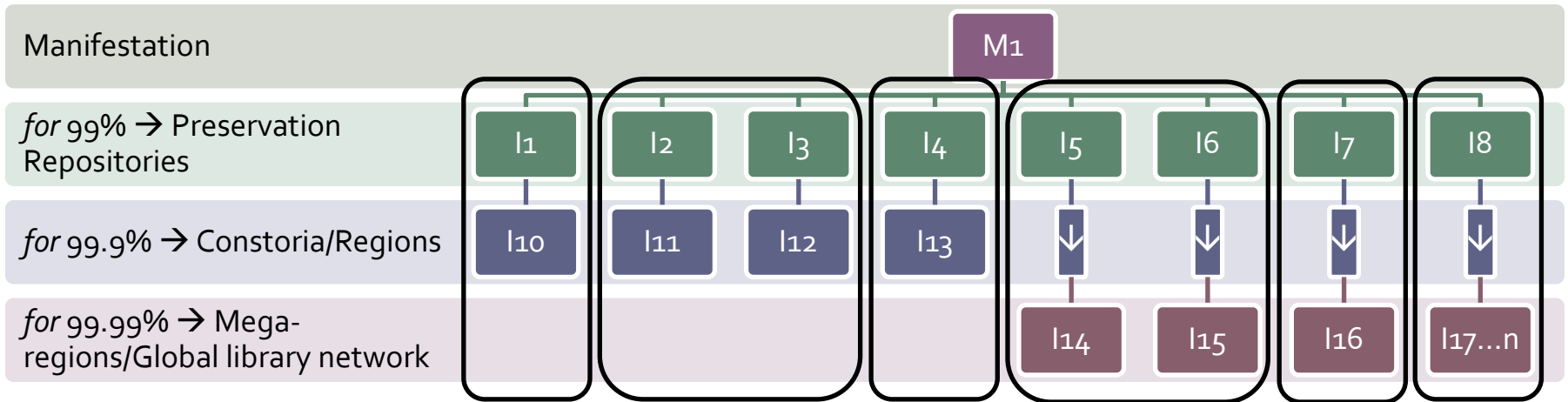
Low Risk to M : Ample Copies



Managed Preservation: Adequate copies *if* loss is carefully controlled ($\leq 1\%$ per year)



Towards a National/Global Plan: Identify Dedicated Repositories and Support Networks



THANK YOU!

Questions & Discussion

- Is this interpretation of FRBR appropriately aligned with cataloging practice and interpretation?
 - ↳ Does preservation of a *W* require all *E*?
 - ↳ Does preservation of an *E* require all *M*?
- Are these FRBR-based definitions of preservation useful?
 - ↳ Special Collection/Repository Copy $\rightarrow I = M$
 - ↳ Preservation sustains *MEW*
Conservation sustains *I*
Reformatting sustains *EW* by $I_1M_1 \rightarrow I_1M_2$
- *And more, I'm sure...*



