

## ERRATUM

The article “Using Knowledge Graphs to Counter Weapons of Mass Destruction” by Ray H. Mariner, Timothy P. Lippa, Phillip T. Koshute, David W. Boyce, Josef C. Behling, and Michael J. Peters included some incorrect values in Tables 1 and 2 and the accompanying text on pages 8 and 9. The errors are generally small and do not affect any of the article’s main points. The online article has been corrected, and the corrected tables and text are shown below, with changed values and text highlighted.

\*\*\*\*\*

- Evidence set = {cup, ice cube tray, pitcher, sugar}.
- Steps 1 and 2: The resources within this evidence set overlap with the iced tea, lemonade, and orange juice processes. Therefore, weights must be calculated for all resources in these processes.
- Step 3: Table 1 provides the weights for each resource that appears in at least one process. If a resource appears in one of three processes, its weight is  $-\log(1/3) = 1.099$ . Similarly, if a resource appears in two of three processes, its weight is  $-\log(2/3) = 0.405$ . If a resource appears in all three processes, its weight is  $-\log(3/3) = -\log(1) = 0$ .
- Step 4: The resources that appear in the evidence are compared separately with each process.

- For the iced tea process, the resources that appear both in the evidence set and the process (overlap set) are {ice cube tray, pitcher}. The resources that appear in the evidence but not in the iced tea process (evidence-only set) are {cup, sugar}. The resources that appear in the iced tea process but not in the evidence (process-only set) are {freezer, ice, kettle, spoon, stove, tea bags, water}.
- For the lemonade process, the overlap set is {cup, ice cube tray, pitcher, sugar}; the evidence-only set is the empty set (i.e., there are no resources in this set); and the process-only set is {freezer, ice, juicer, lemonade powder, lemons, spoon, water}.
- For the orange juice process, the overlap set is {pitcher}; the evidence-only set is {cup, ice cube tray, sugar}; and the process-only set is {juicer, orange juice concentrate, oranges, spoon, water}.

- Step 5: Table 2 provides the total weight for each set. These totals are obtained from the sum of the weights of the resources in each set. For instance, the weight for the overlap set in the iced tea process is  $0.405$  (ice cube tray) +  $0$  (pitcher) =  $0.405$ . Since the pitcher resource appears in all three processes, its weight is  $0$  (i.e., it does not provide any information on which process is most similar to be active).
- Step 6: Given  $\alpha = \beta = 0.5$ , the similarity scores for each process are calculated as follows:

$$\begin{aligned}
 - W_{IT} &= 0.405 / (0.405 + 0.5*2.197 + 0.5*4.107) = 0.114 \\
 - W_{LM} &= 2.603 / (2.603 + 0.5*0 + 0.5*3.414) = 0.604 \\
 - W_{OJ} &= 0 / (0 + 0.5*2.603 + 0.5*2.603) = 0
 \end{aligned}$$

- Step 7:  $W_{LM} = 0.604$  is greater than  $W_{IT}$  or  $W_{OJ}$  (i.e., the lemonade process has the greatest similarity score). Therefore, the lemonade process is identified as the most similar.

\*\*\*\*\*

In addition, the authors inadvertently omitted an acknowledgment of a former APL staff member who provided ideas that are integral to the article. The acknowledgement has been added and is repeated here: We thank our former APL colleague Ryan Carr for the idea for the iced tea and lemonade examples.

**Table 1.** Weights by resource for example

Resource	Appears in				Resource Prevalence	Weight
	Iced Tea Process	Lemonade Process	Orange Juice Process			
Cup		✓			1/3	1.099
Freezer	✓	✓			2/3	0.405
Ice	✓	✓			2/3	0.405
Ice cube tray	✓	✓			2/3	0.405
Juicer		✓	✓		2/3	0.405
Kettle	✓				1/3	1.099
Lemonade powder		✓			1/3	1.099
Lemons		✓			1/3	1.099
Orange juice concentrate			✓		1/3	1.099
Oranges			✓		1/3	1.099
Pitcher	✓	✓	✓		3/3	0
Spoon	✓	✓	✓		3/3	0
Stove	✓				1/3	1.099
Sugar		✓			1/3	1.099
Tea bags	✓				1/3	1.099
Water	✓	✓	✓		3/3	0

**Table 2.** Weights for each set (from example 1)

Process	Set		
	Overlap	Evidence-Only	Process-Only
Iced tea	0.405	2.197	4.107
Lemonade	2.603	0	3.414
Orange juice	0	2.603	2.603