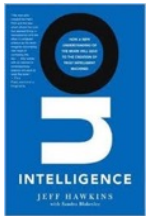


Alice Bob Cedric Daphne



5

4

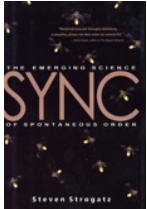


1

4

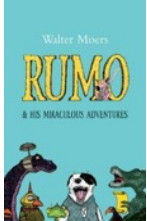


4



2

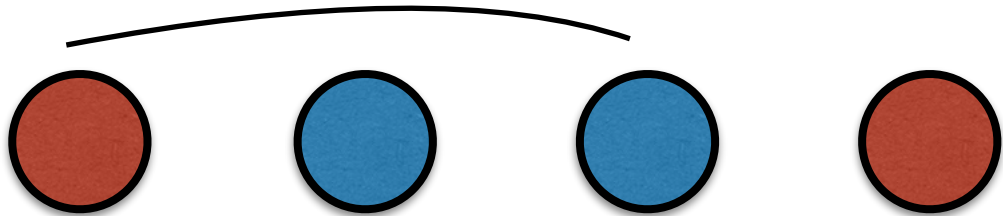
1



4

3

Social graph



Alice

Bob

Cedric

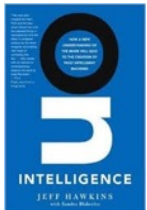
Daphne

Genre

1 1 0 1



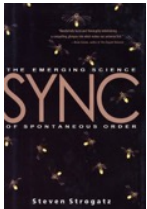
0 0 1 0



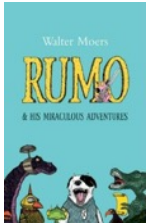
1 1 0 0



0 0 1 0



0 1 0 1



5

4

1

4

4

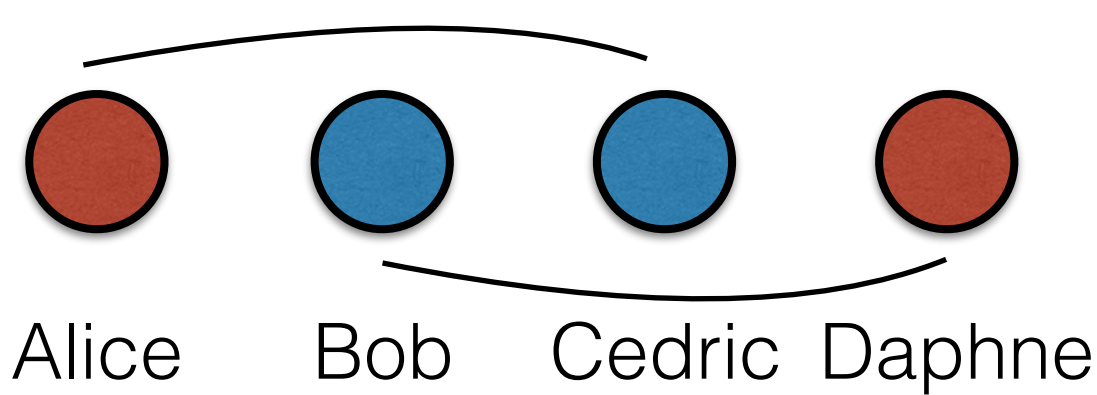
2

1

4

3

Social graph



Genre

1 1 0 1



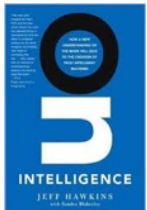
5

2.3

4

3.1

0 0 1 0



1

4.5

1.3

4

1 1 0 0



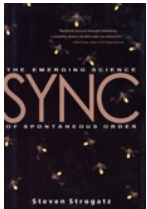
3.9

4

3.8

0.8

0 0 1 0



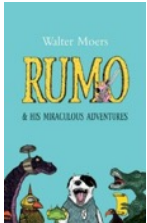
2

5.2

1

4.5

0 1 0 1



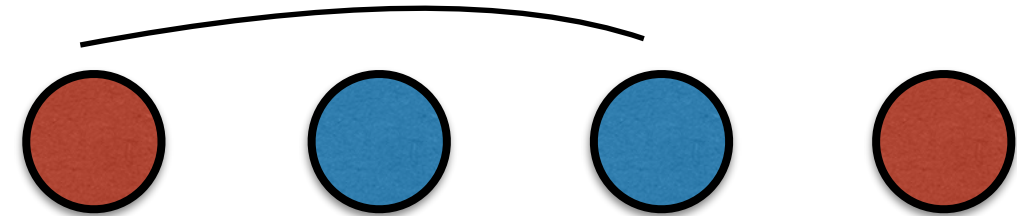
4

2.5

3

3.6

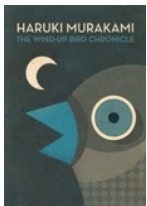
Social graph



Alice Bob Cedric Daphne

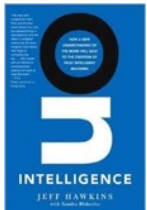
Genre

1 1 0 1



5	2.3	4	3.1
---	-----	---	-----

0 0 1 0



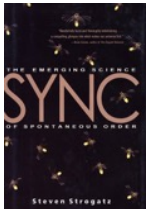
1	4.5	1.3	4
---	-----	-----	---

1 1 0 0



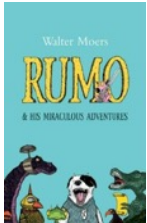
3.9	4	3.8	0.8
-----	---	-----	-----

0 0 1 0



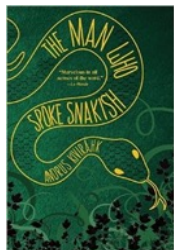
2	5.2	1	4.5
---	-----	---	-----

0 1 0 1



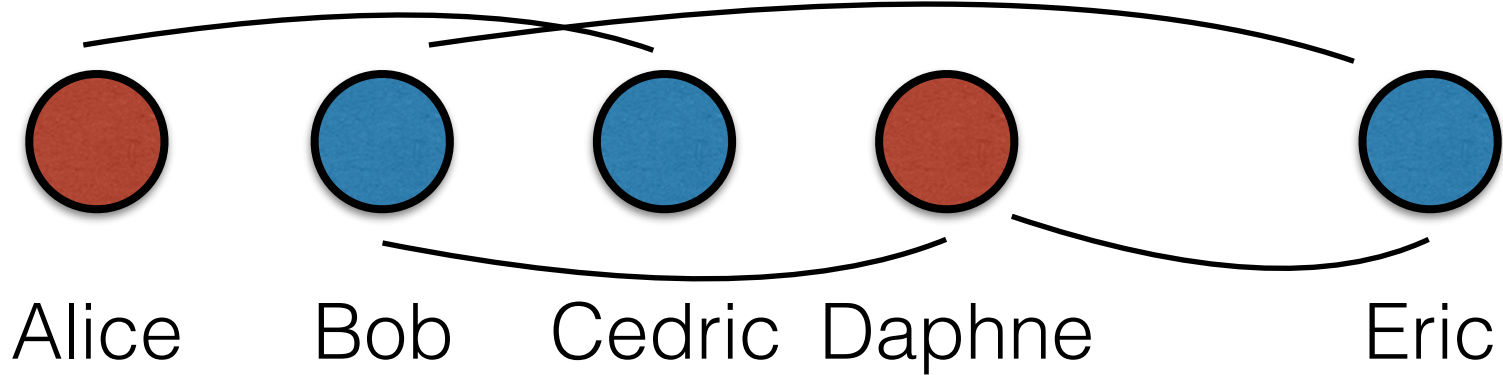
4	2.5	3	3.6
---	-----	---	-----

1 1 0 1



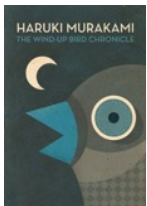
4.8	1.1	3.7	2.3
-----	-----	-----	-----

Social graph

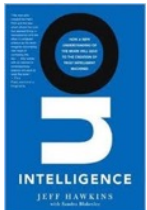


Genre

1 1 0 1



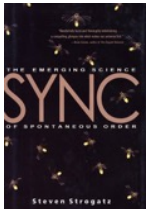
0 0 1 0



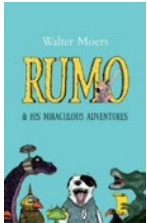
1 1 0 0



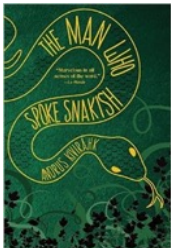
0 0 1 0



0 1 0 1

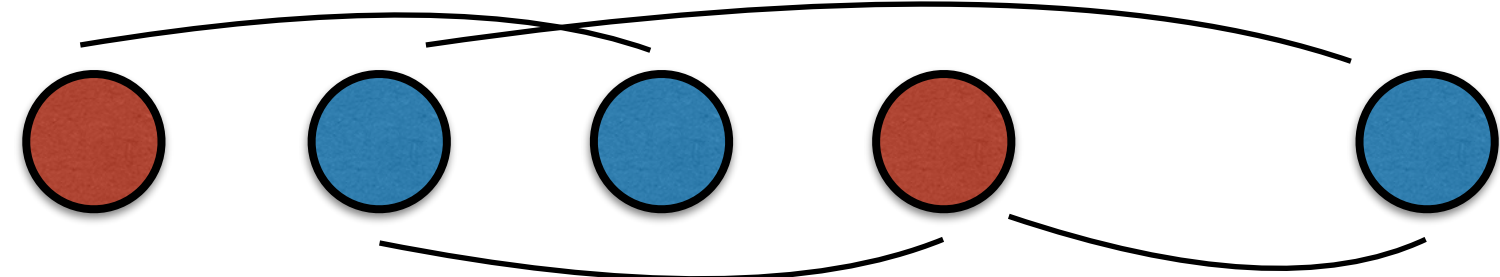


1 1 0 1



Alice	Bob	Cedric	Daphne	Eric
5	2.3	4	3.1	2.3
1	4.5	1.3	4	4.0
3.9	4	3.8	0.8	1.7
2	5.2	1	4.5	4.8
4	2.5	3	3.6	2.9
4.8	1.1	3.7	2.3	

Social graph



Genre

Alice

Bob

Cedric

Daphne

Eric

1 1 0 1



5

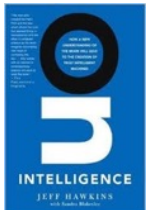
2.3

4

3.1

2.3

0 0 1 0



1

4.5

1.3

4

4.0

1 1 0 0



3.9

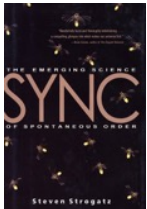
4

3.8

0.8

1.7

0 0 1 0



2

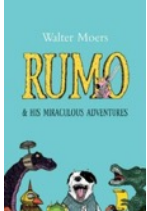
5.2

1

4.5

4.8

0 1 0 1



4

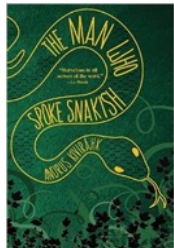
2.5

3

3.6

2.9

1 1 0 1



4.8

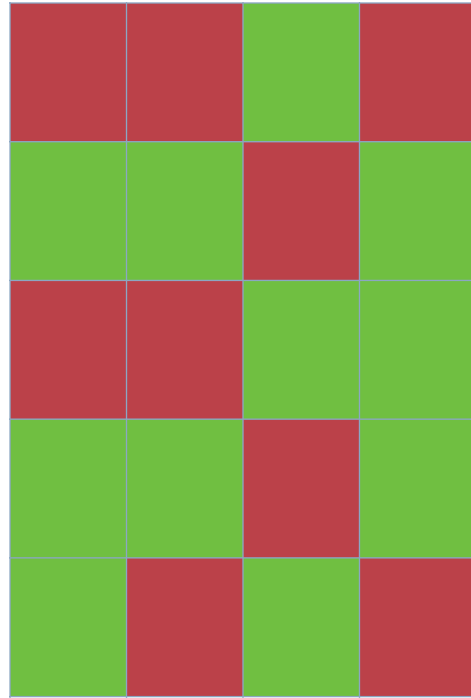
1.1

3.7

2.3

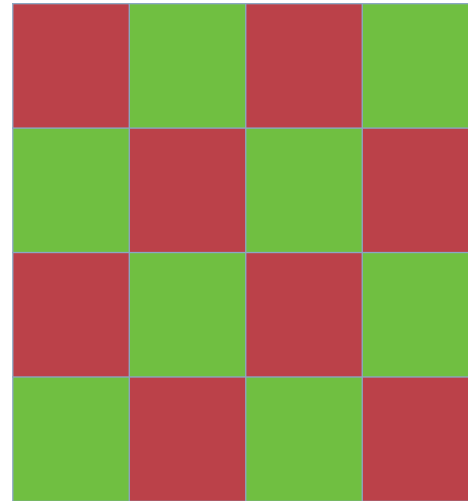
2.4

Features  
books



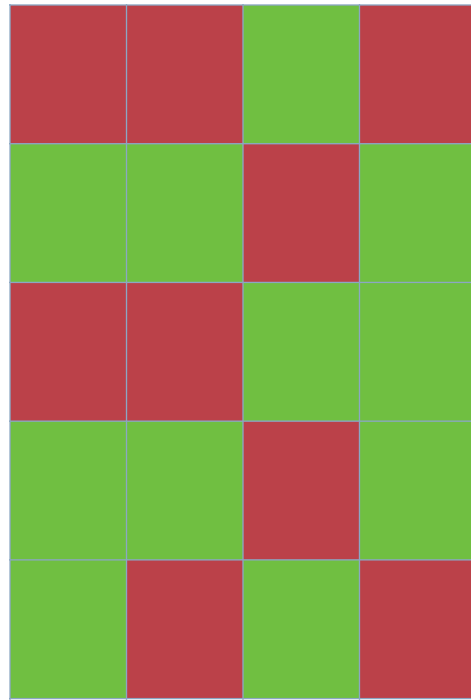
$\Phi$

Features  
readers



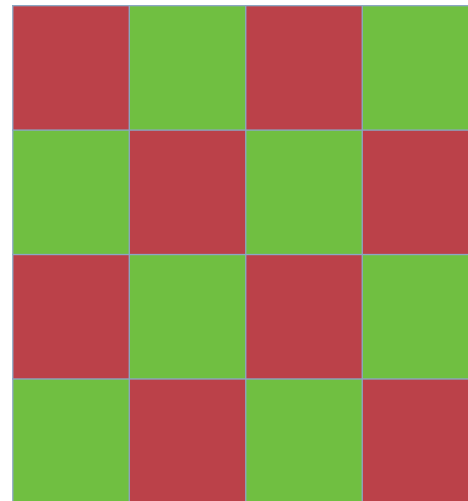
$\Psi$

Features  
books

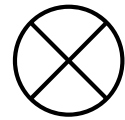


$\Phi$

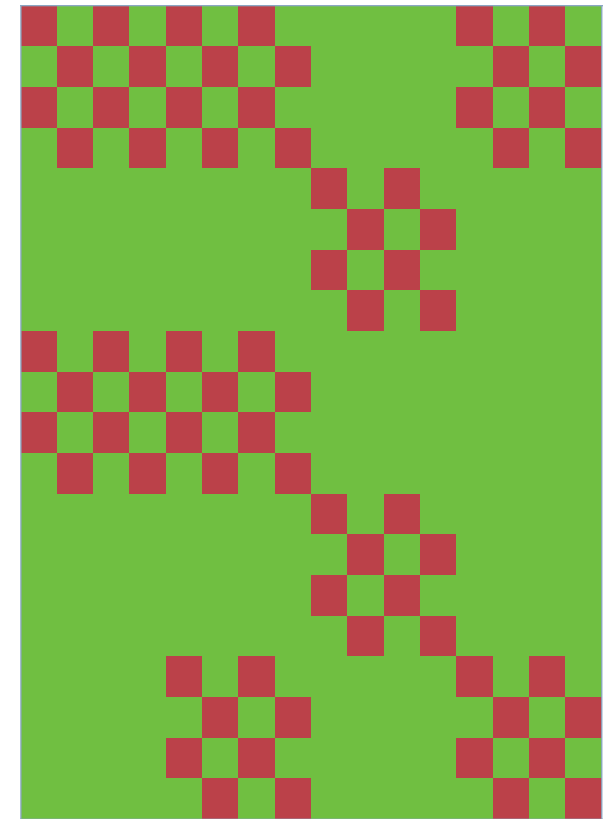
Features  
readers



$\Psi$



=



$\Phi \otimes \Psi$



# Tasks

Instances

Initial  
training data

New training tasks

New training  
instances

Even more training  
instances