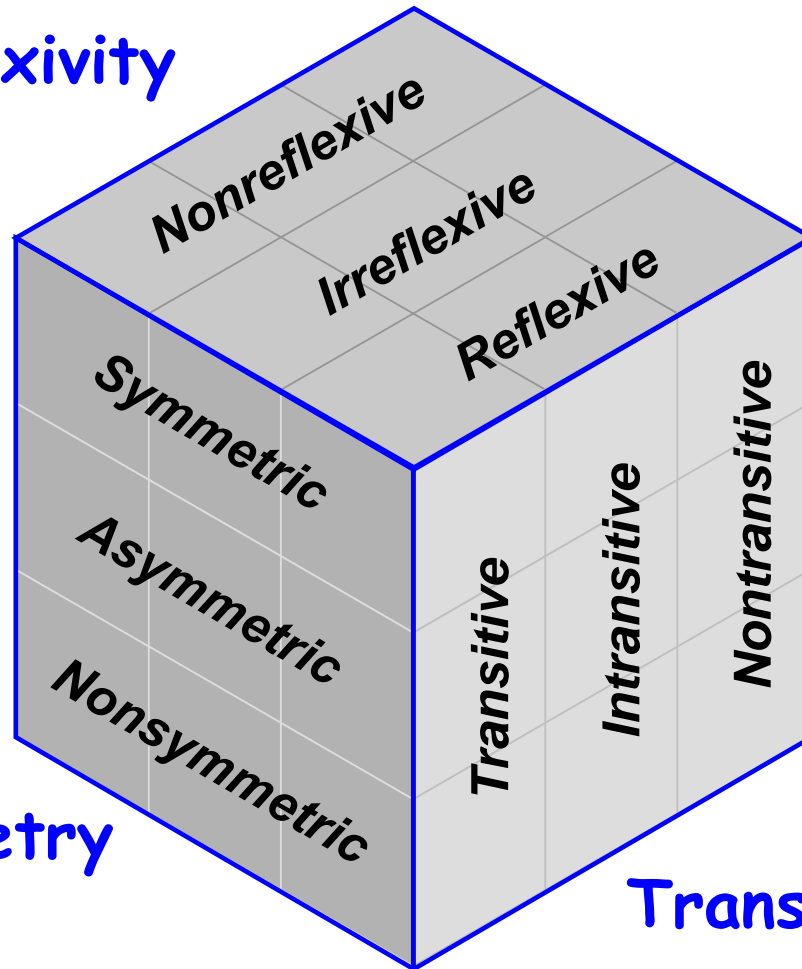


**Augmented  
Model-Exchange  
Isomorphism  
V1.1**

**Reflexivity**



**Symmetry**

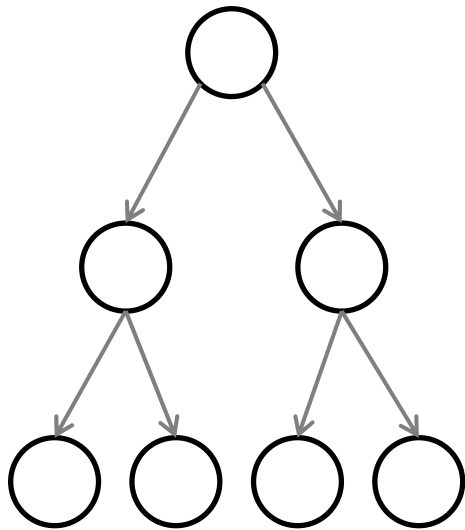
**Transitivity**

v1.1

# Organizing Properties of Symmetry - v1.1

Asymmetric

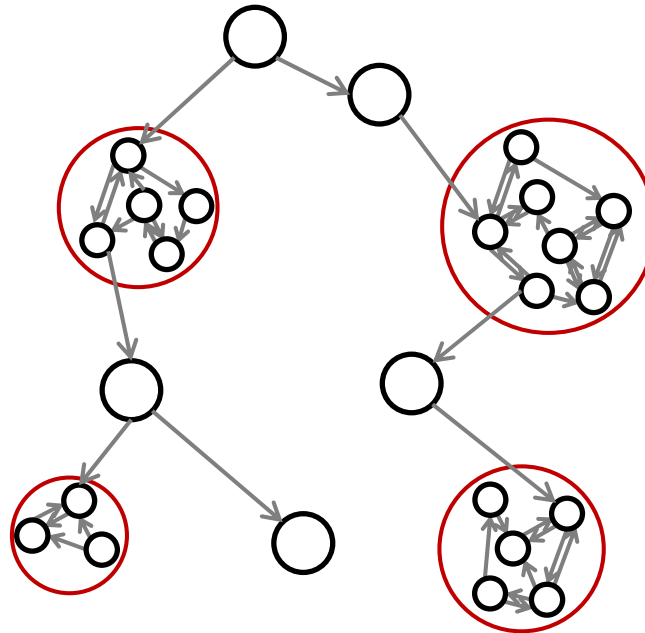
**Hierarchy**



- Use logic rules to discover structure in an efficient manner
- Analyze structure

Nonsymmetric

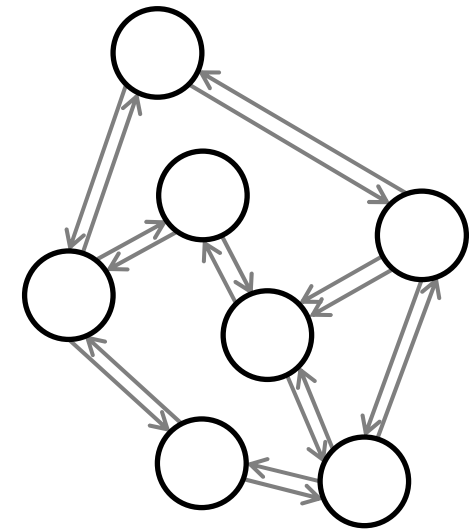
**Combined Hierarchy & Network**



- Apply lattice and set partitioning rules to identify components
- Apply other techniques as needed

Symmetric

**Network**



- Analyze for highest value configuration
- Filter out controlling structure
- Analyze structure

# Hi-Level Logical Characteristics of Three Dyadic Relations - v1.1

*Reflexivity*  
Involves one individual

*Symmetry*  
Involves two individuals

*Transitivity*  
Involves three (or more) individuals

## Reflexive

A relation, R, is reflexive iff any individual that enters into the relation bears R to itself.

**\*Identical with; Divisible by**

## Symmetric

If any individual bears the relation to a second individual, then the second bears it to the first.

**\*Touching**

## Transitive

If any individual bears this relation to a second and the second bears it to a third, then the first bears it to the third.

**\*Greater than; North of; Included in**

## Irreflexive

A relation, R, is irreflexive iff no individual bears R to itself.

**\*Stand next to; Father of**

## Asymmetric

A relation, R, is asymmetrical iff, if any individual bears R to a second, then the second does not bear R to the first.

**\*North of; Heavier than; Child of**

## Intransitive

A relation, R, is intransitive iff, if any individual bears R to a second and the second bears R to a third, then the first does not bear R to the third.

**\*Father of; 2" taller than**

## Nonreflexive

A relation which is neither reflexive nor irreflexive is nonreflexive.

**\*Respecting; Killing**

## Nonsymmetric

A relation which is neither symmetrical nor asymmetrical is nonsymmetric.

**\*Likes; Seeing**

## Nontransitive

A relation which is neither transitive nor intransitive is nontransitive.

**\*Admiring; Fearing**

## \*Examples

**Permutations of Relation Properties, with Unique Identifiers v1.1**

RST-[1,1,1]	<b>Reflexive, Symmetric, Transitive</b>	RSI-[1,1,2]	<b>Reflexive, Symmetric, Intransitive</b>	RSN-[1,1,3]	<b>Reflexive, Symmetric, Nontransitive</b>
IST-[2,1,1]	<b>Irreflexive, Symmetric, Transitive</b>	ISI-[2,1,2]	<b>Irreflexive, Symmetric, Intransitive</b>	ISN-[2,1,3]	<b>Irreflexive, Symmetric, Nontransitive</b>
NST-[3,1,1]	<b>Nonreflexive, Symmetric, Transitive</b>	NSI-[3,1,2]	<b>Nonreflexive, Symmetric, Intransitive</b>	NSN-[3,1,3]	<b>Nonreflexive, Symmetric, Nontransitive</b>
RAT-[1,2,1]	<b>Reflexive, Asymmetric, Transitive</b>	RAI-[1,2,2]	<b>Reflexive, Asymmetric, Intransitive</b>	RAN-[1,2,3]	<b>Reflexive, Asymmetric, Nontransitive</b>
IAT-[2,2,1]	<b>Irreflexive, Asymmetric, Transitive</b>	IAI-[2,2,2]	<b>Irreflexive, Asymmetric, Intransitive</b>	IAN-[2,2,3]	<b>Irreflexive, Asymmetric, Nontransitive</b>
NAT-[3,2,1]	<b>Nonreflexive, Asymmetric, Transitive</b>	NAI-[3,2,2]	<b>Nonreflexive, Asymmetric, Intransitive</b>	NAN-[3,2,3]	<b>Nonreflexive, Asymmetric, Nontransitive</b>
RNT-[1,3,1]	<b>Reflexive, Nonsymmetric, Transitive</b>	RNI-[1,3,2]	<b>Reflexive, Nonsymmetric, Intransitive</b>	RNN-[1,3,3]	<b>Reflexive, Nonsymmetric, Nontransitive</b>
INT-[2,3,1]	<b>Irreflexive, Nonsymmetric, Transitive</b>	INI-[2,3,2]	<b>Irreflexive, Nonsymmetric, Intransitive</b>	INN-[2,3,3]	<b>Irreflexive, Nonsymmetric, Nontransitive</b>
NNT-[3,3,1]	<b>Nonreflexive, Nonsymmetric, Transitive</b>	NNI-[3,3,2]	<b>Nonreflexive, Nonsymmetric, Intransitive</b>	NNN-[3,3,3]	<b>Nonreflexive, Nonsymmetric, Nontransitive</b>

# **Group**

## **v1.1**

**RST-[1,1,1]**

**IST-[2,1,1]**

**NST-[3,1,1]**

Prose

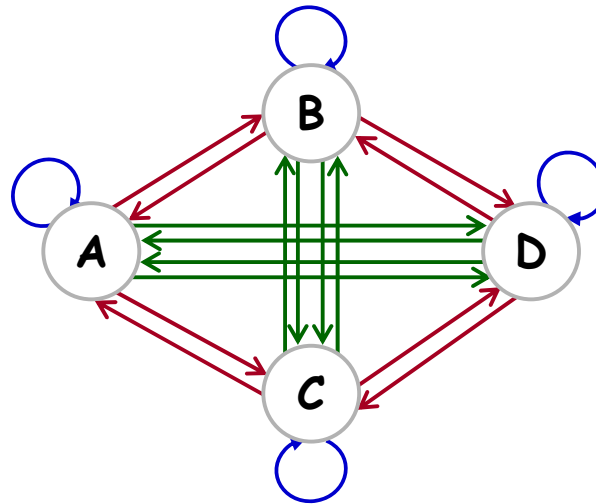
Structured Graph

Matrix

Relation  
'Connected-to'

- Reflexive
- Symmetric
- Transitive

RST-[1,1,1] v1.1



	A	B	C	D
A	1	1	1	1
B	1	1	1	1
C	1	1	1	1
D	1	1	1	1

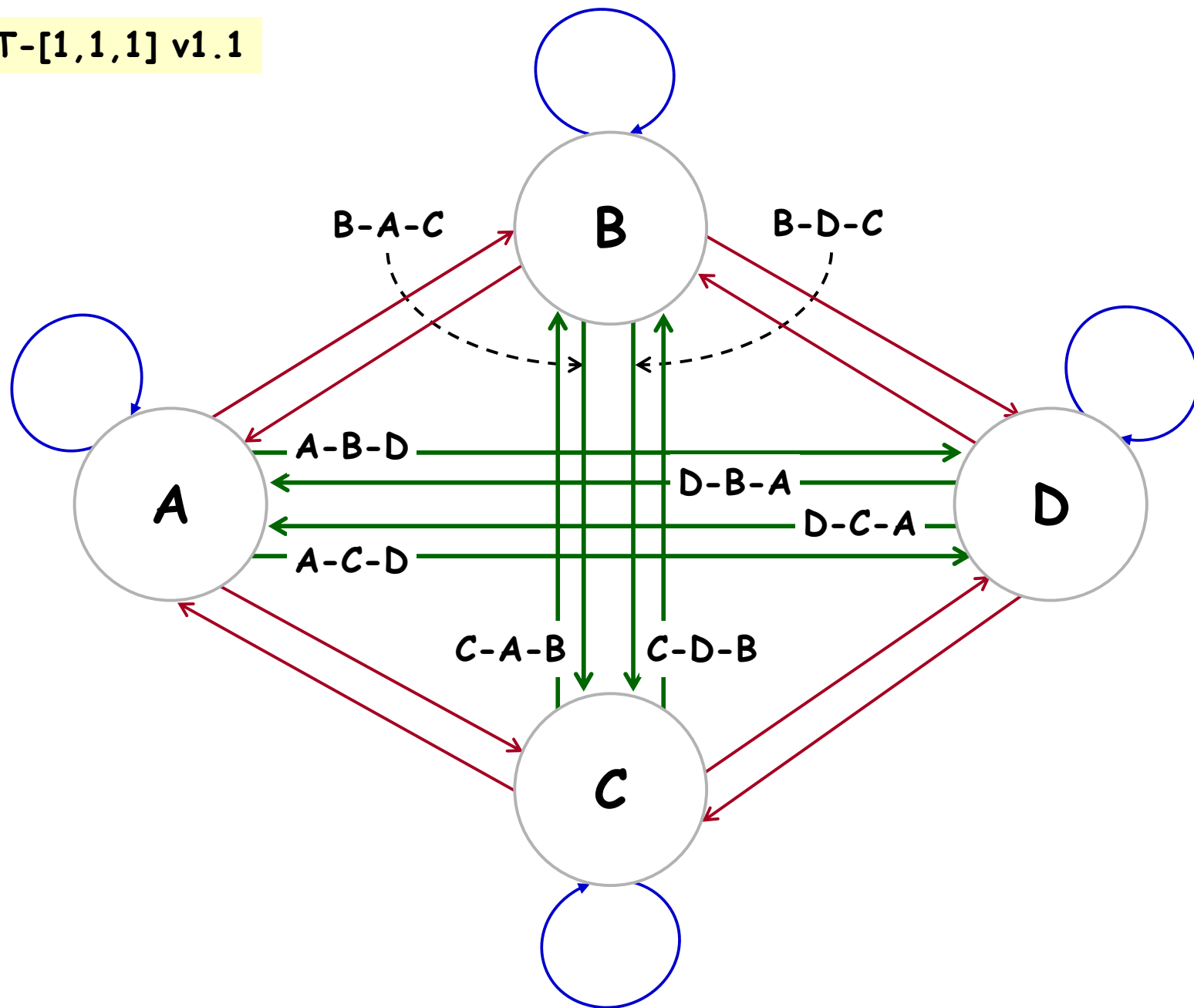
Context

1. Directional connections
2. Double directions
3. Self-connection required

Notes

1. Shows transitive links

RST-[1,1,1] v1.1





Prose

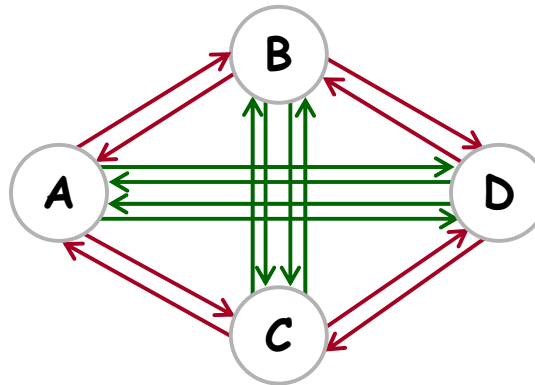
Structured Graph

Matrix

Relation  
'Connected-to'

- Irreflexive
- Symmetric
- Transitive

IST-[2,1,1] v1.1



[Absence of self-referential edges]

	A	B	C	D
A	0	1	1	1
B	1	0	1	1
C	1	1	0	1
D	1	1	1	0

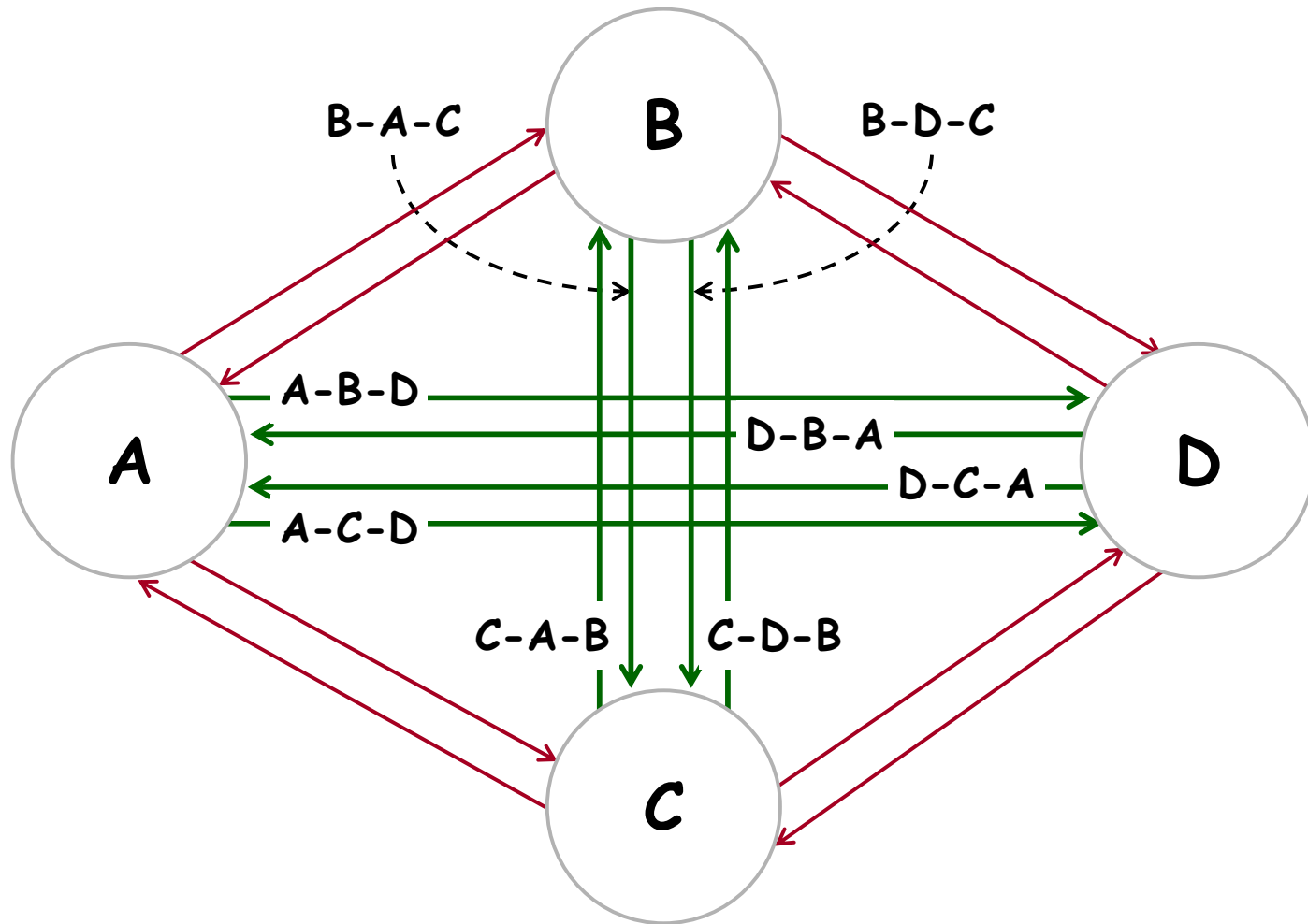
Context

1. Directional connections
2. Double directions

Notes

1. Shows transitive links

IST-[2,1,1] v1.1



Prose

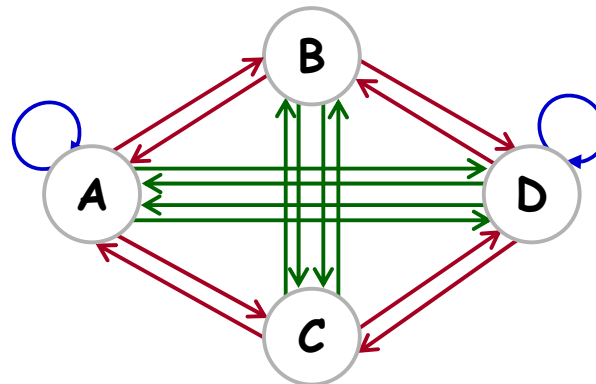
Structured Graph

Matrix

Relation  
'Connected-to'

- Nonreflexive
- Symmetric
- Transitive

NST-[3,1,1] v1.1



	A	B	C	D
A	1	1	1	1
B	1	0	1	1
C	1	1	0	1
D	1	1	1	1

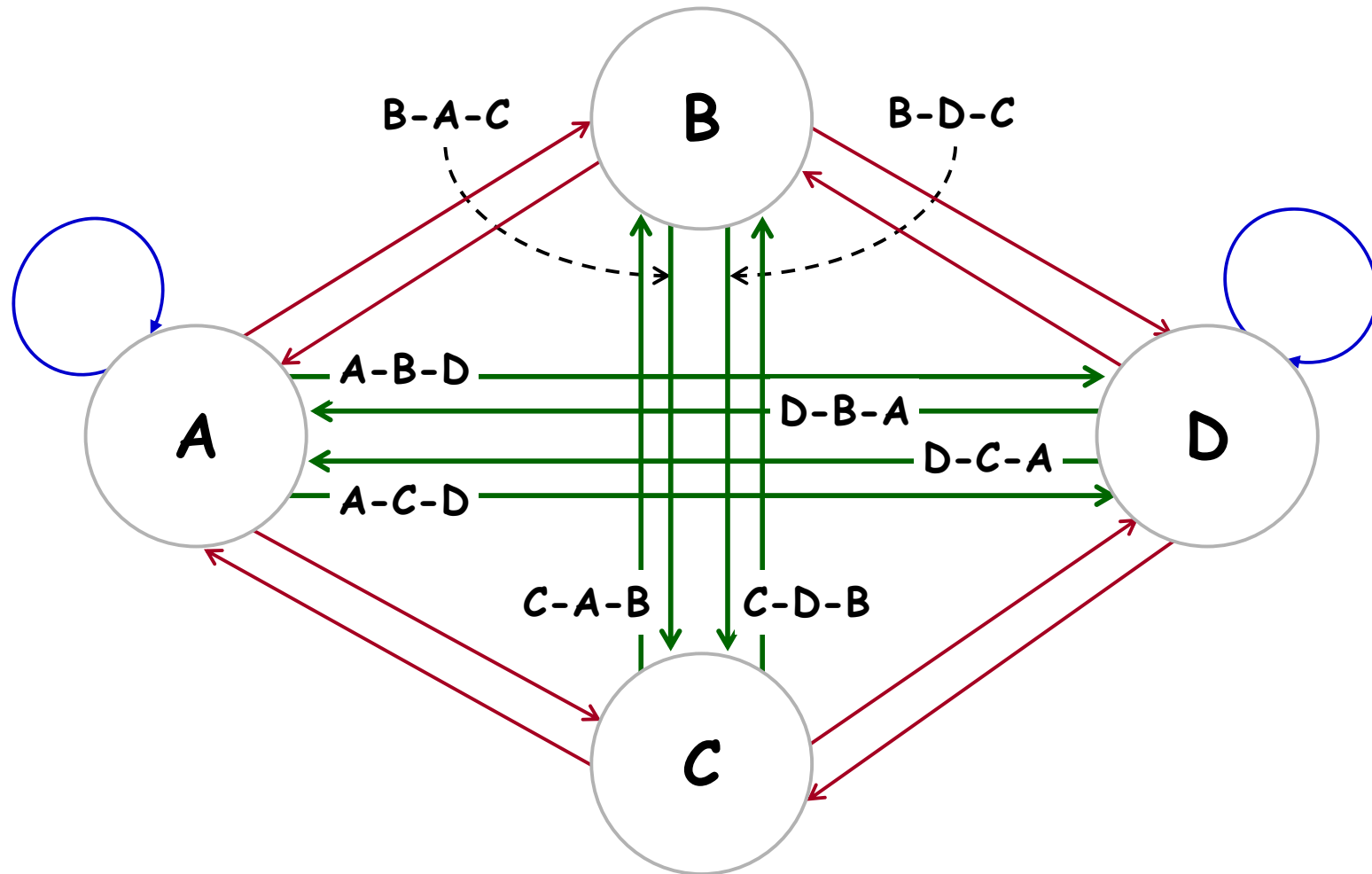
Context

1. Directional connections
2. Double directions
3. Self-connections required  
(1 up to  $n-1$ )

Notes

1. Shows transitive links
2. Changing the self-connections will change the entries on the diagonal

NST-[3,1,1] v1.1



**Group**

**v1.1**

**RAT-[1,2,1]**

**IAT-[2,2,1]**

**NAT-[3,2,1]**

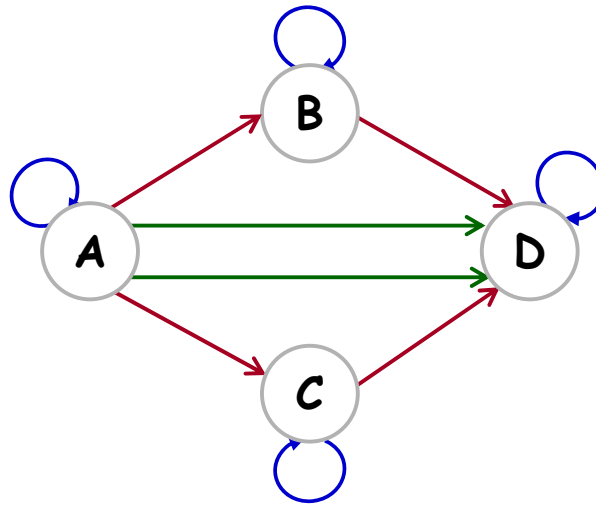
## Prose

Relation  
'Connected-to'

- Reflexive
- Asymmetric
- Transitive

RAT-[1,2,1] v1.1

## Structured Graph



## Matrix

	A	B	C	D
A	1	1	1	1
B	0	1	0	1
C	0	0	1	1
D	0	0	0	1

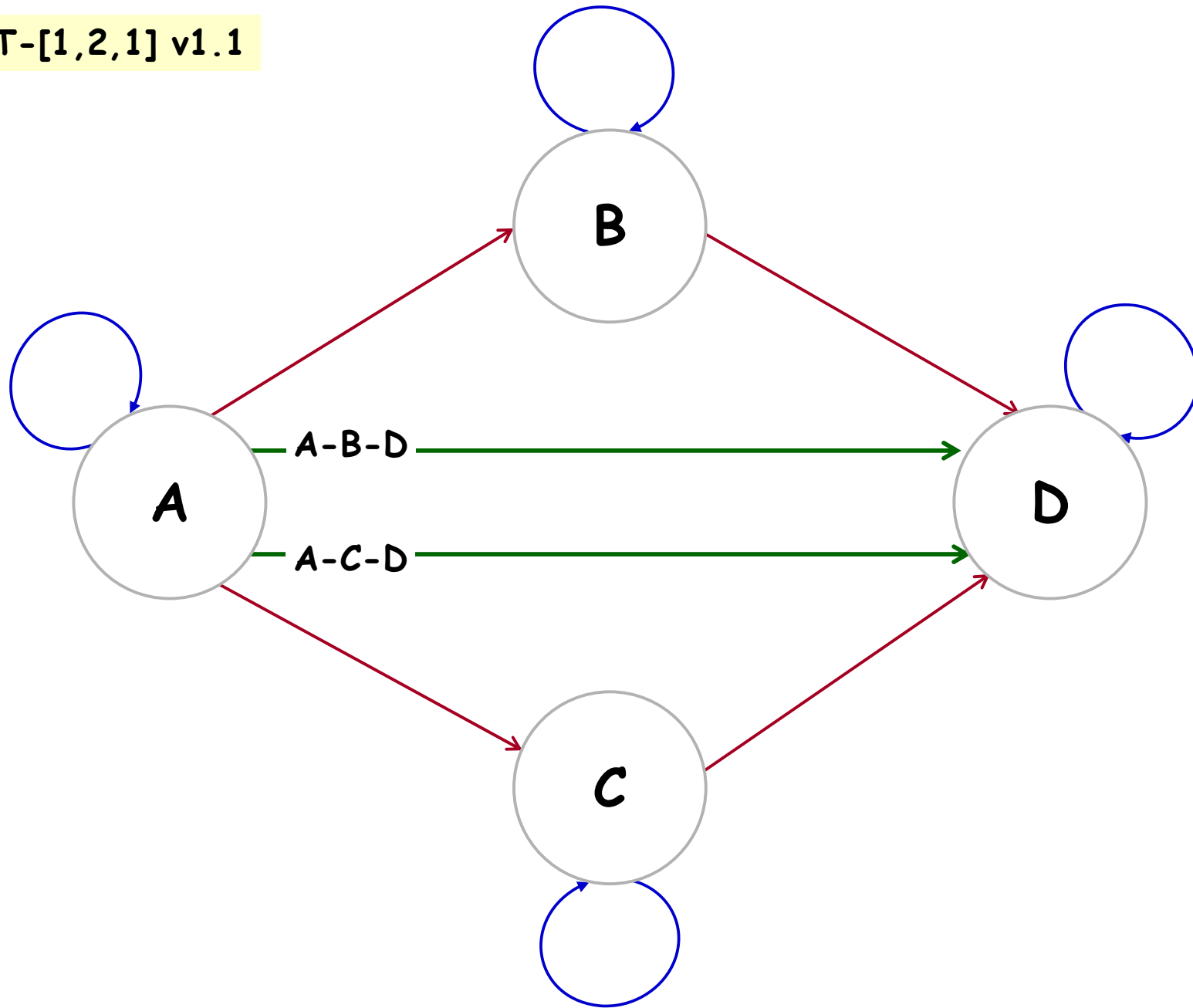
## Context

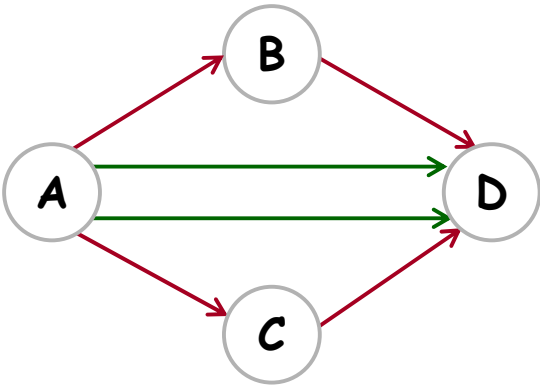
1. Directional connections
2. Single direction
3. Self-connection required

## Notes

1. Shows transitive links

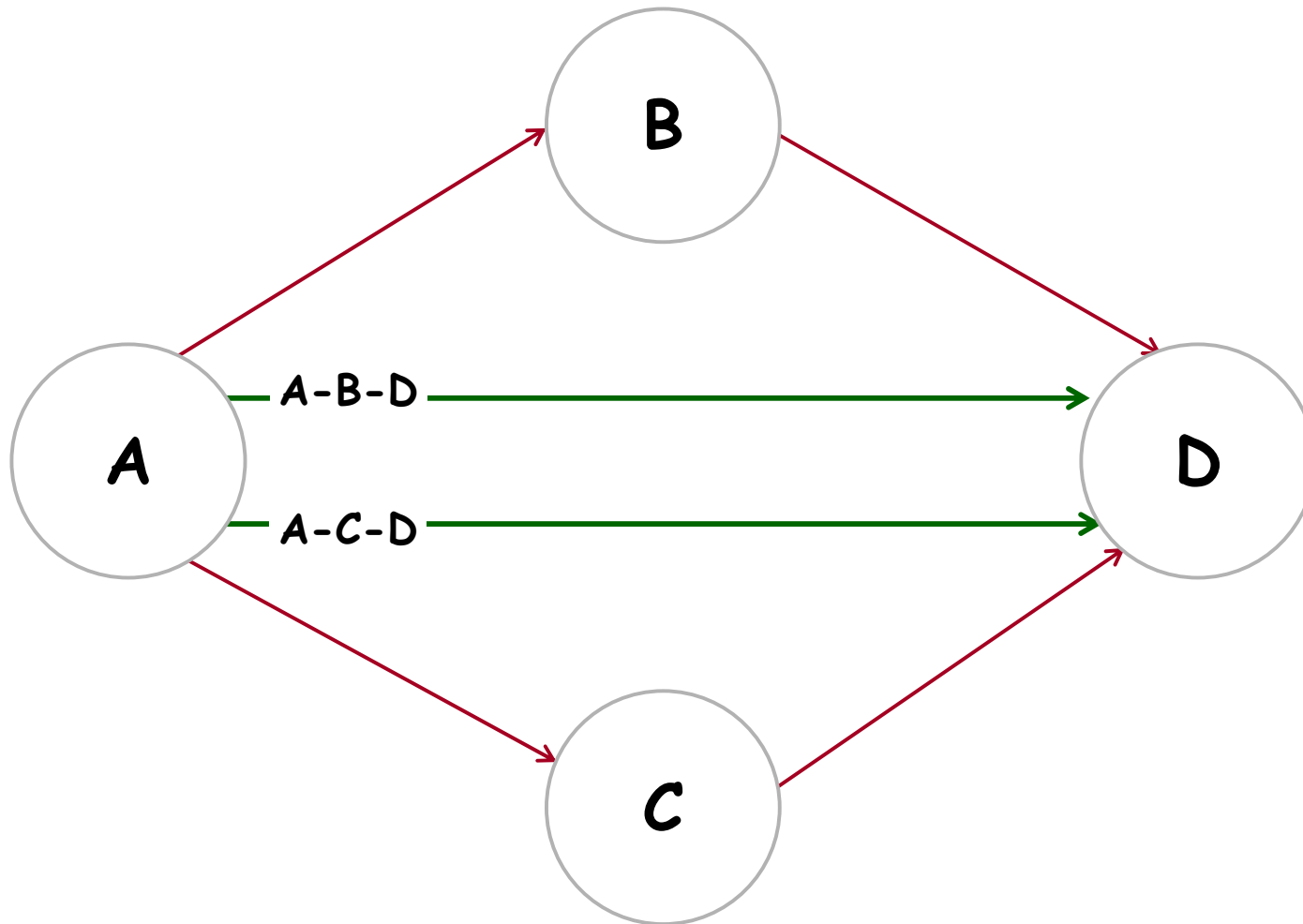
RAT-[1,2,1] v1.1

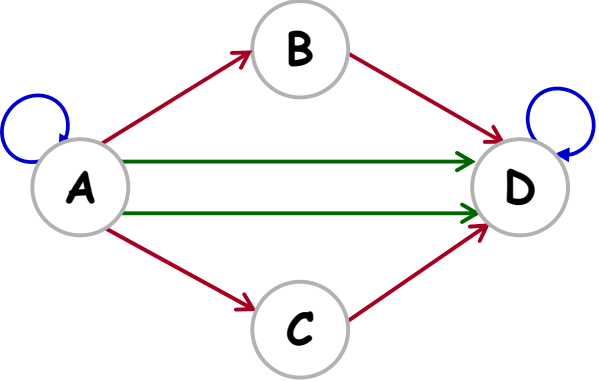


Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Irreflexive</li> <li>• Asymmetric</li> <li>• Transitive</li> </ul> <p>IAT-[2,2,1] v1.1</p>	 <p>[Absence of self-referential edges]</p>	<table border="1" data-bbox="1438 349 1848 787"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <th>B</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		A	B	C	D	A	0	1	1	1	B	0	0	0	1	C	0	0	0	1	D	0	0	0	0
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C	0	0	0	1																							
D	0	0	0	0																							
<p>Context</p> <ol style="list-style-type: none"> <li>1. Directional connections</li> <li>2. Single direction</li> </ol>	<p>Notes</p> <ol style="list-style-type: none"> <li>1. Shows transitive links</li> </ol>																										

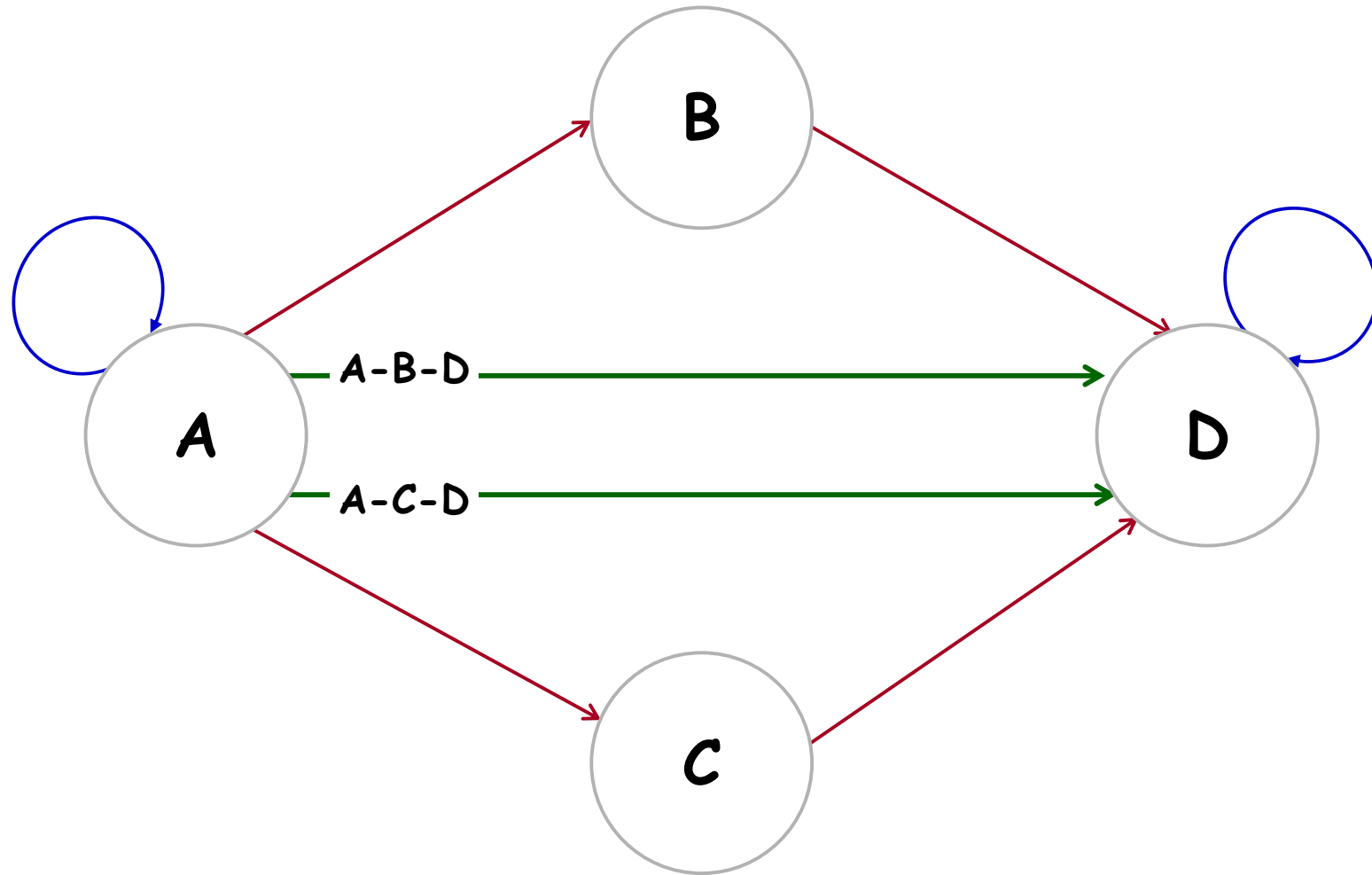


IAT-[2,2,1] v1.1



Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• <b>Nonreflexive</b></li> <li>• <b>Asymmetric</b></li> <li>• <b>Transitive</b></li> </ul> <p>NAT-[3,2,1] v1.1</p>		<table border="1" data-bbox="1440 354 1850 792"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <th>B</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	1	B	0	0	0	1	C	0	0	0	1	D	0	0	0	1
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A	1	1	1	1																							
B	0	0	0	1																							
C	0	0	0	1																							
D	0	0	0	1																							
<p>Context</p> <ol style="list-style-type: none"> <li>1. Directional connections</li> <li>2. Single direction</li> <li>3. Self-connection required (1 up to <math>n-1</math>)</li> </ol>	<p>Notes</p> <ol style="list-style-type: none"> <li>1. Shows transitive links</li> <li>2. Changing the self-connections will change the entries on the diagonal</li> </ol>																										

NAT-[3,2,1] v1.1



# **Group**

## **v1.1**

**RNT-[1,3,1]**

**INT-[2,3,1]**

**NNT-[3,3,1]**

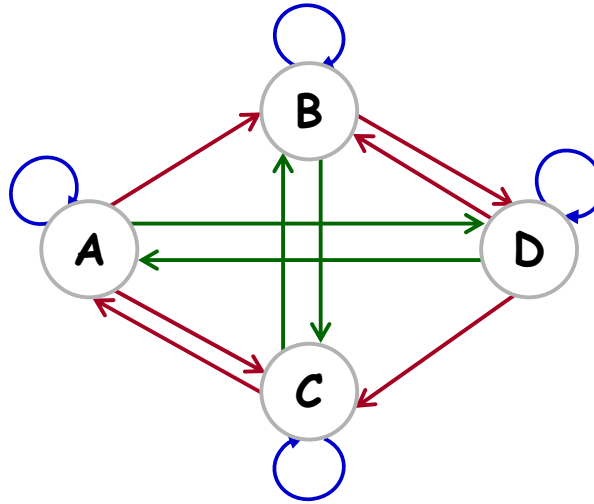
## Prose

Relation  
'Connected-to'

- Reflexive
- Nonsymmetric
- Transitive

RNT-[1,3,1] v1.1

## Structured Graph



## Matrix

	A	B	C	D
A	1	1	1	1
B	0	1	1	1
C	1	1	1	0
D	1	1	1	1

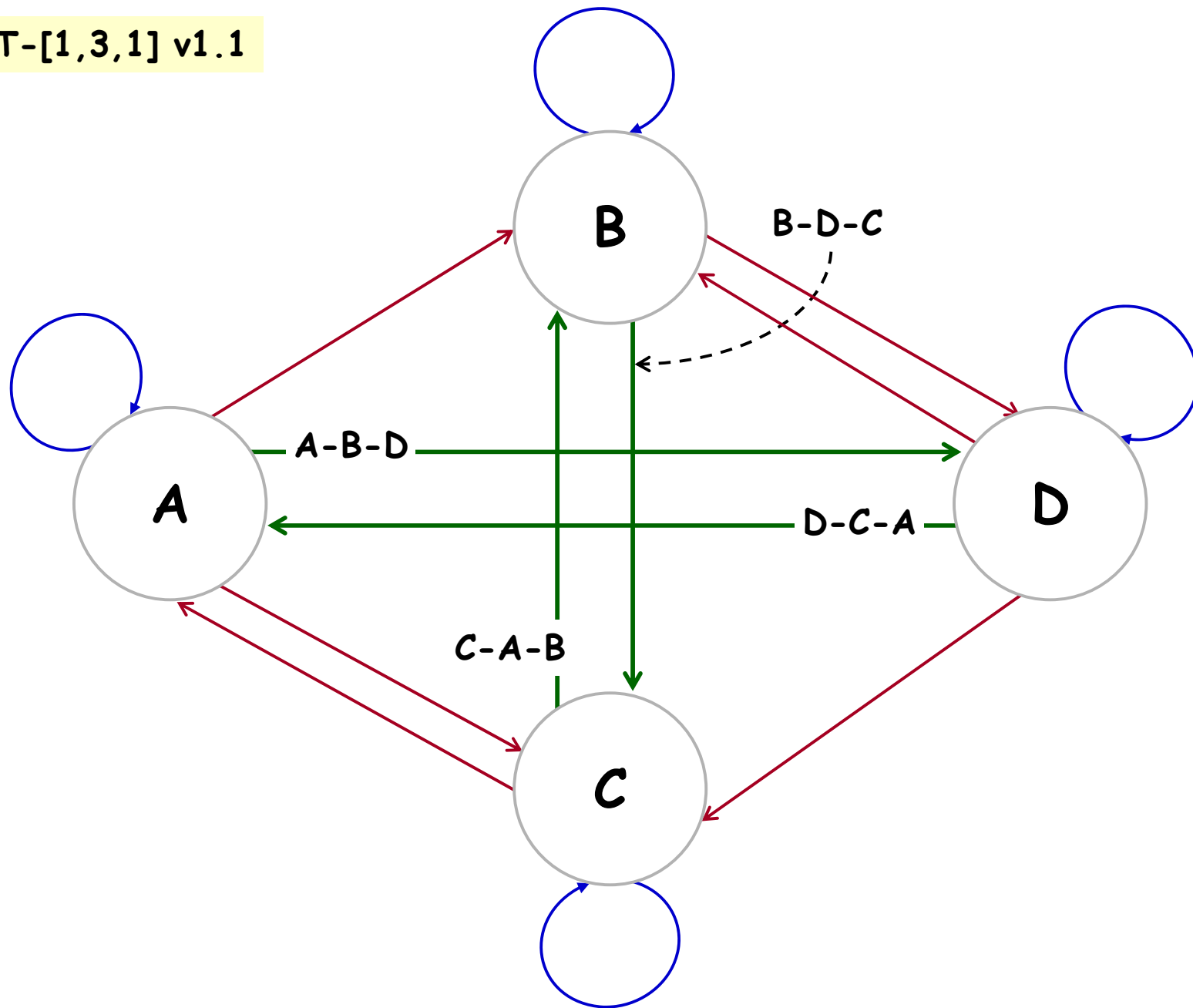
## Context

1. Directional connections
2. Single or double directions
3. Self-connection required

## Notes

1. Shows transitive links
2. Changing where the asymmetry occurs will change the matrix structure

RNT-[1,3,1] v1.1



Prose

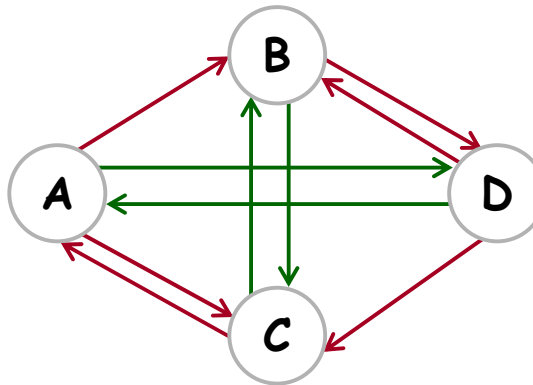
Structured Graph

Matrix

Relation  
'Connected-to'

- Irreflexive
- Nonsymmetric
- Transitive

INT-[2,3,1] v1.1



[Absence of self-referential edges]

	A	B	C	D
A	0	1	1	1
B	0	0	1	1
C	1	1	0	0
D	1	1	1	0

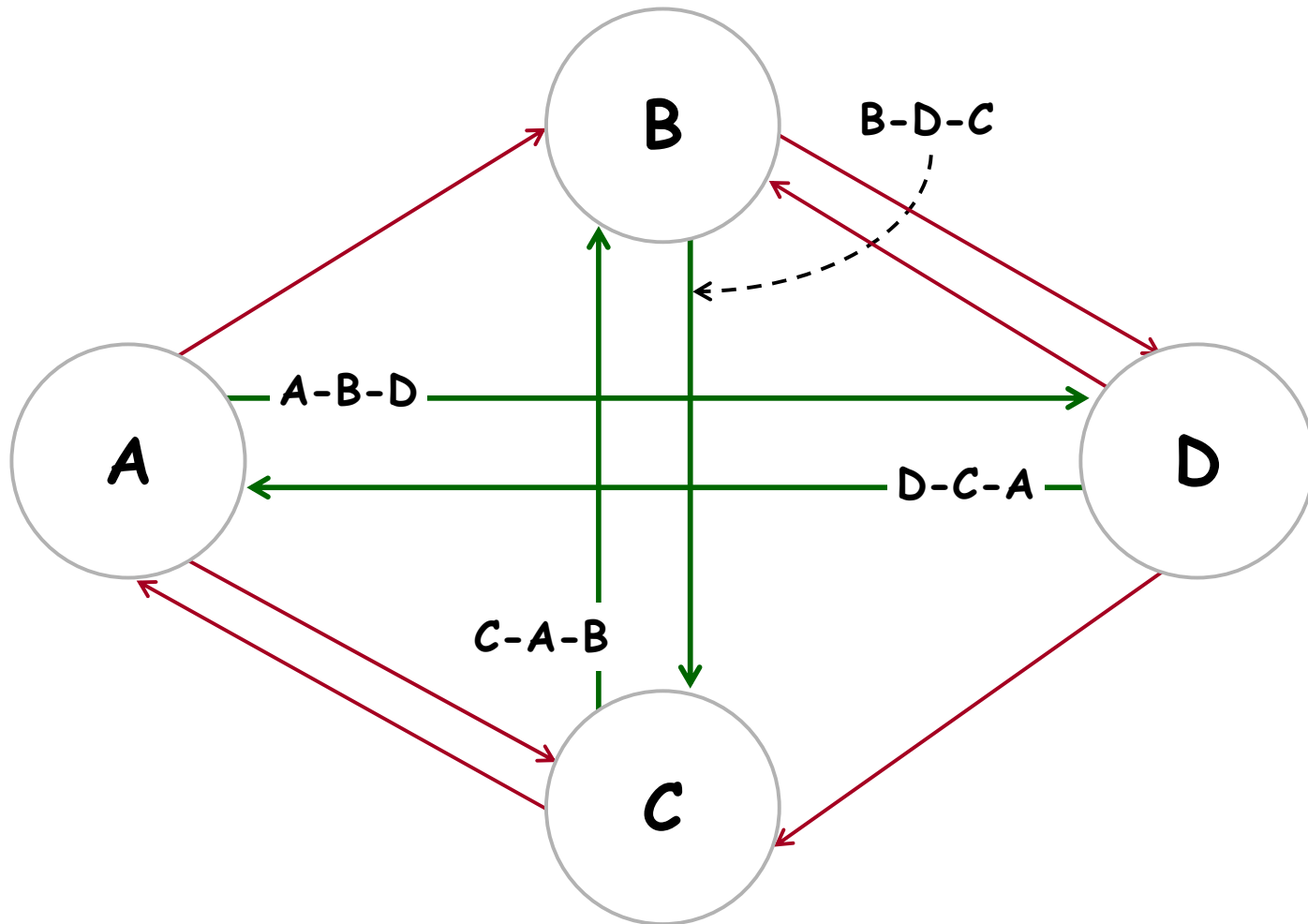
Context

1. Directional connections
2. Single or double directions

Notes

1. Shows transitive links
2. Changing where the asymmetry occurs will change the matrix structure

INT-[2,3,1] v1.1





Prose

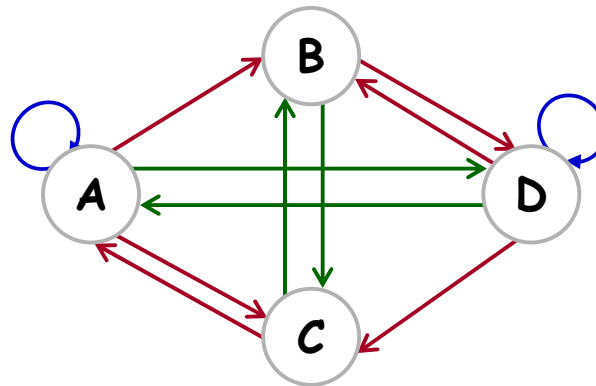
Structured Graph

Matrix

Relation  
'Connected-to'

- Nonreflexive
- Nonsymmetric
- Transitive

NNT-[3,3,1] v1.1



	A	B	C	D
A	1	1	1	1
B	0	0	1	1
C	1	1	0	0
D	1	1	1	1

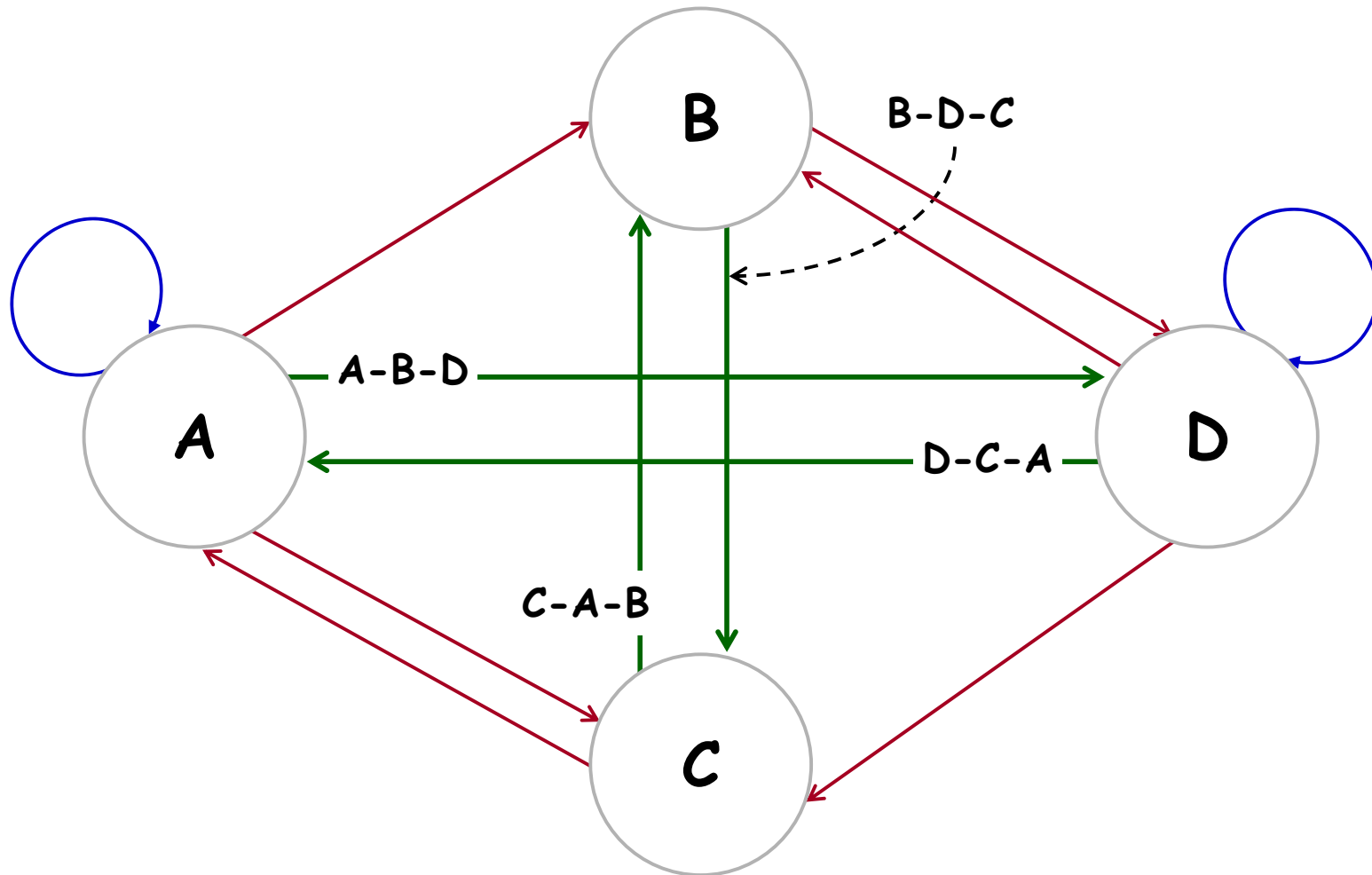
Context

1. Directional connections
2. Single or double directions
3. Self-connection required  
(1 up to  $n-1$ )

Notes

1. Shows transitive links
2. Changing where the asymmetry occurs will change the matrix structure
3. Changing the self-connections will change the entries on the diagonal

NNT-[3,3,1] v1.1



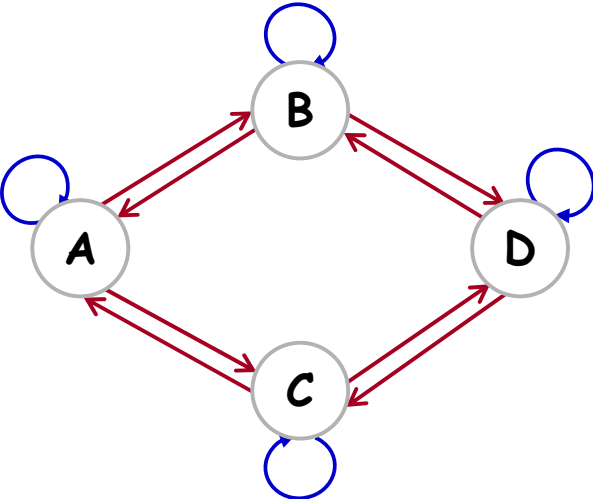
**Group**

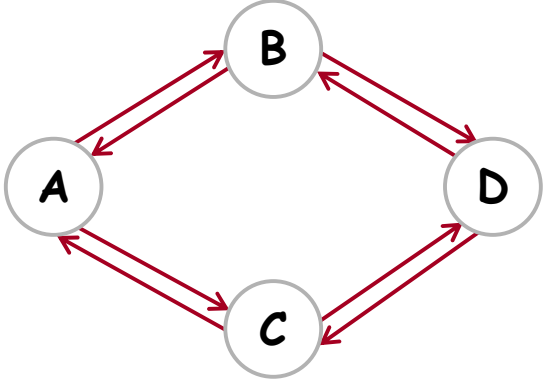
**v1.1**

**RSI-[1,1,2]**

**ISI-[2,1,2]**

**NSI-[3,1,2]**

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Reflexive</li> <li>• Symmetric</li> <li>• Intransitive</li> </ul> <p>RSI-[1,1,2] v1.1</p>		<table border="1" data-bbox="1440 350 1850 792"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>1</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	0	B	1	1	0	1	C	1	0	1	1	D	0	1	1	1
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C	1	0	1	1																							
D	0	1	1	1																							
<p>Context</p> <ol style="list-style-type: none"> <li>1. Directional connections</li> <li>2. Double directions</li> <li>3. Self-connection required</li> </ol>	<p>Notes</p> <ol style="list-style-type: none"> <li>1.</li> </ol>																										

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Irreflexive</li> <li>• Symmetric</li> <li>• Intransitive</li> </ul> <p>ISI-[2,1,2] v1.1</p>	 <p>[Absence of self-referential edges]</p>	<table border="1" data-bbox="1440 354 1850 797"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>1</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> </tbody> </table>		A	B	C	D	A	0	1	1	0	B	1	0	0	1	C	1	0	0	1	D	0	1	1	0
	A	B	C	D																							
A	0	1	1	0																							
B	1	0	0	1																							
C	1	0	0	1																							
D	0	1	1	0																							
<p>Context</p> <ol style="list-style-type: none"> <li>1. Directional connections</li> <li>2. Double directions</li> </ol>	<p>Notes</p> <ol style="list-style-type: none"> <li>1.</li> </ol>																										

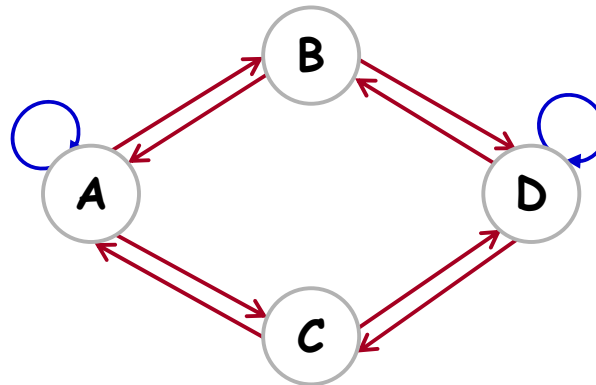
## Prose

Relation  
'Connected-to'

- Nonreflexive
- Symmetric
- Intransitive

NSI-[3,1,2] v1.1

## Structured Graph



## Matrix

	A	B	C	D
A	1	1	1	0
B	1	0	0	1
C	1	0	0	1
D	0	1	1	1

## Context

1. Directional connections
2. Double directions
3. Self-connection required  
(1 up to  $n-1$ )

## Notes

1. Changing the self-connections will change the entries on the diagonal

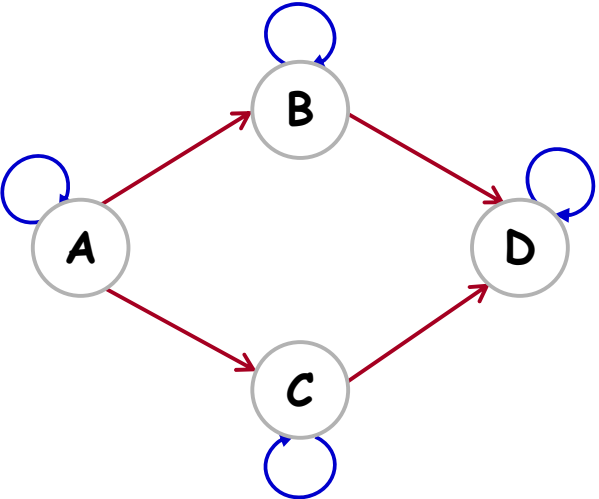
**Group**

**v1.1**

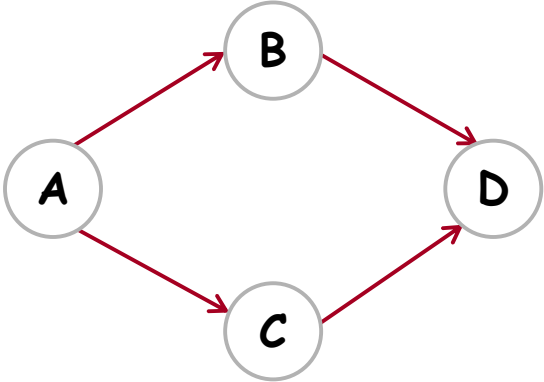
**RAI-[1,2,2]**

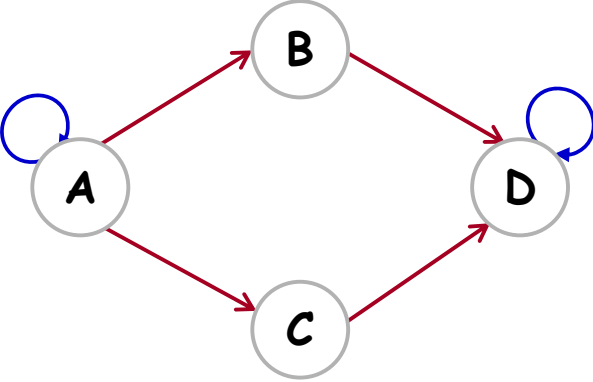
**IAI-[2,2,2]**

**NAI-[3,2,2]**

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Reflexive</li> <li>• Asymmetric</li> <li>• Intransitive</li> </ul> <p>RAI-[1,2,2] v1.1</p>	 <pre> graph TD     A((A)) --&gt; A     A --&gt; B((B))     A --&gt; C((C))     B --&gt; B     B --&gt; D((D))     C --&gt; C     C --&gt; D     D --&gt; D   </pre>	<table border="1" data-bbox="1440 350 1850 794"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>0</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	0	B	0	1	0	1	C	0	0	1	1	D	0	0	0	1
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Prose	Structured Graph	Matrix																									
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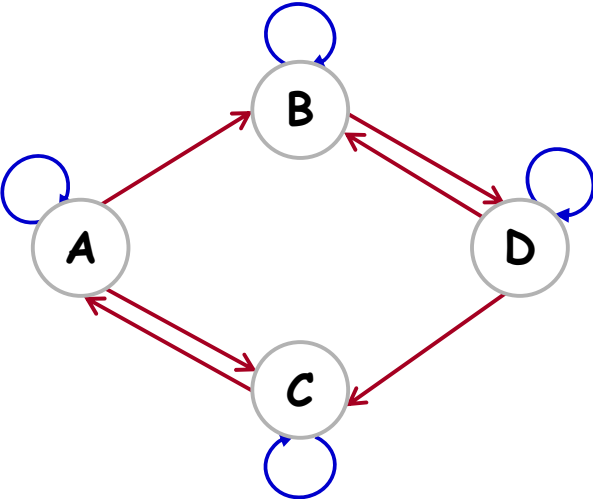
**Group**

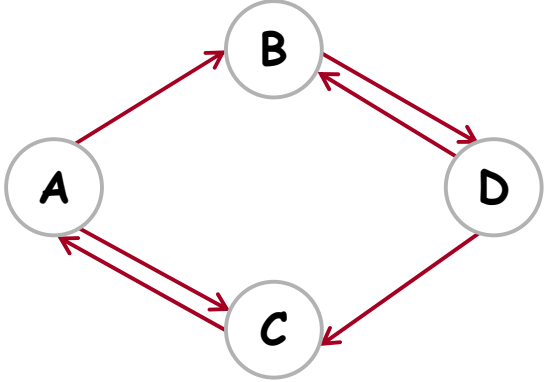
**v1.1**

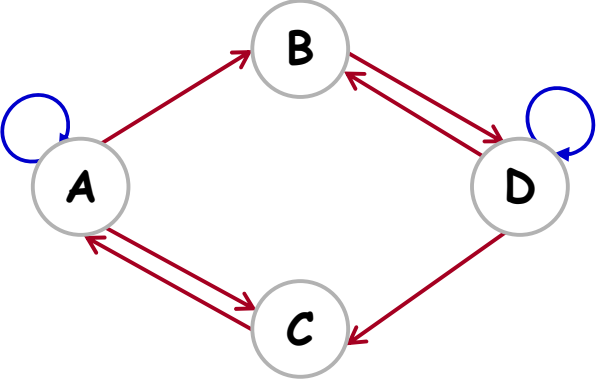
**RNI-[1,3,2]**

**INI-[2,3,2]**

**NNI-[3,3,2]**

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Reflexive</li> <li>• Nonsymmetric</li> <li>• Intransitive</li> </ul> <p>RNI-[1,3,2] v1.1</p>	 <pre> graph TD     A((A)) --&gt; A     B((B)) --&gt; B     D((D)) --&gt; D     A --&gt; B     B --&gt; A     A --&gt; C((C))     C --&gt; A     B --&gt; D     D --&gt; B     C --&gt; D     D --&gt; C   </pre>	<table border="1" data-bbox="1440 350 1850 792"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>0</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>0</td> <td>1</td> <td>0</td> </tr> <tr> <th>D</th> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	0	B	0	1	0	1	C	1	0	1	0	D	0	1	1	1
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**Group**

**v1.1**

**RSN-[1,1,3]**

**ISN-[2,1,3]**

**NSN-[3,1,3]**

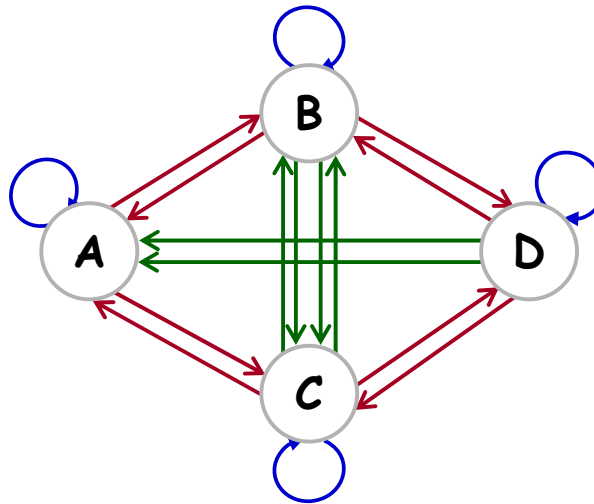
## Prose

Relation  
'Connected-to'

- Reflexive
- Symmetric
- Nontransitive

RSN-[1,1,3] v1.1

## Structured Graph



## Matrix

	A	B	C	D
A	1	1	1	0
B	1	1	1	1
C	1	1	1	1
D	1	1	1	1

## Context

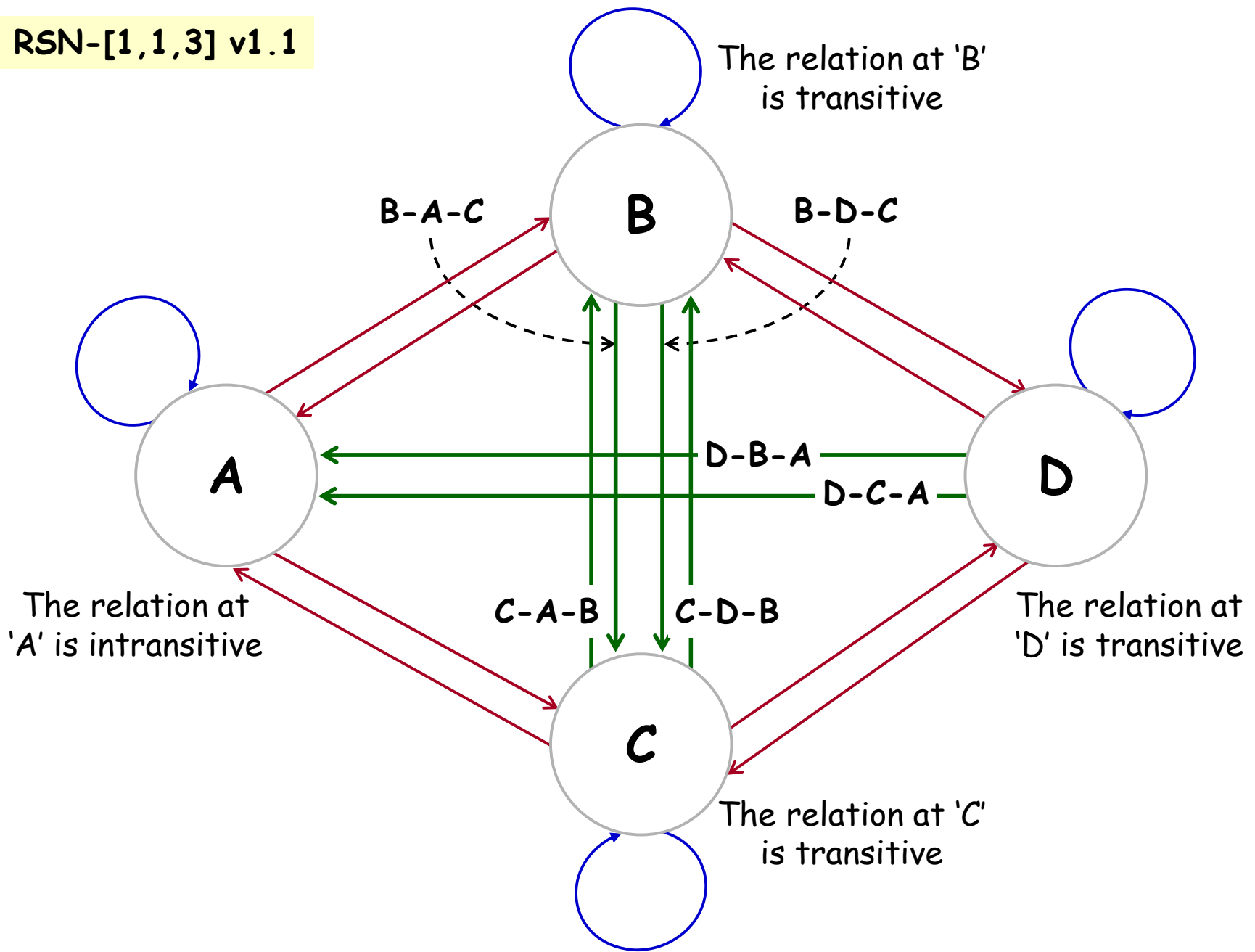
1. The relation: at 'A' is intransitive; at B is transitive; at C is transitive; at D is transitive
2. Directional connections
3. Double directions
4. Self-connection required

## Notes

1. Changing the transitive relation at a node will change the matrix structure



RSN-[1,1,3] v1.1



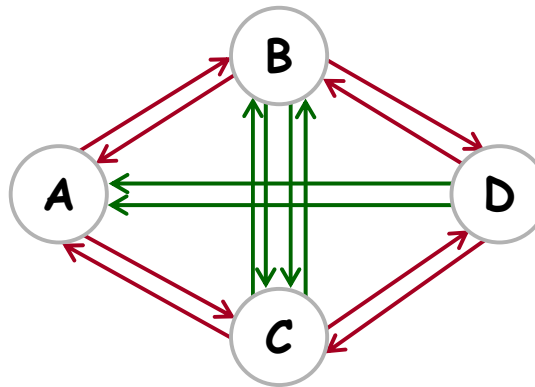
## Prose

Relation  
'Connected-to'

- Irreflexive
- Symmetric
- Nontransitive

ISN-[2,1,3] v1.1

## Structured Graph



[Absence of self-referential edges]

## Matrix

	A	B	C	D
A	0	1	1	0
B	1	0	1	1
C	1	1	0	1
D	1	1	1	0

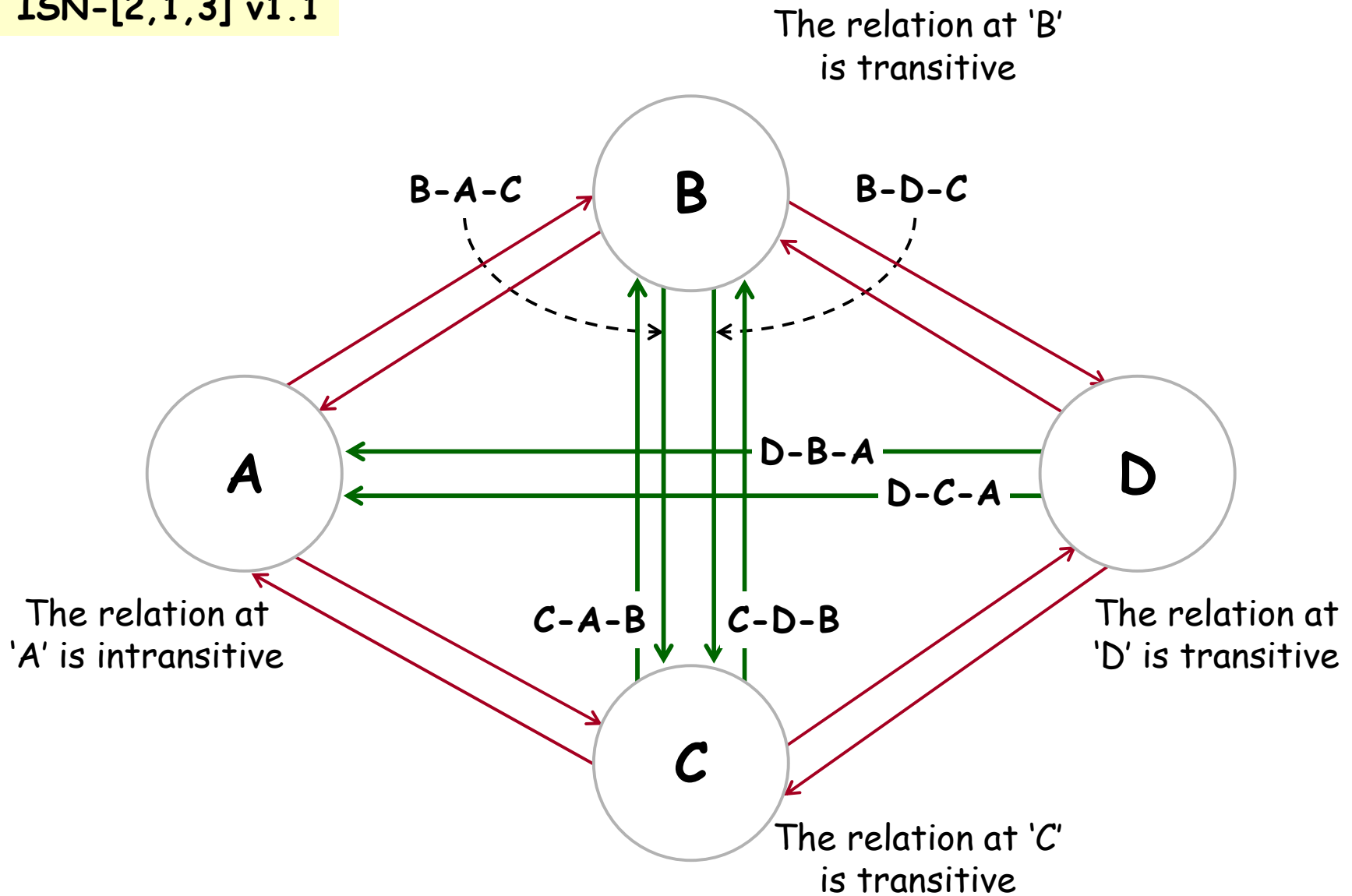
## Context

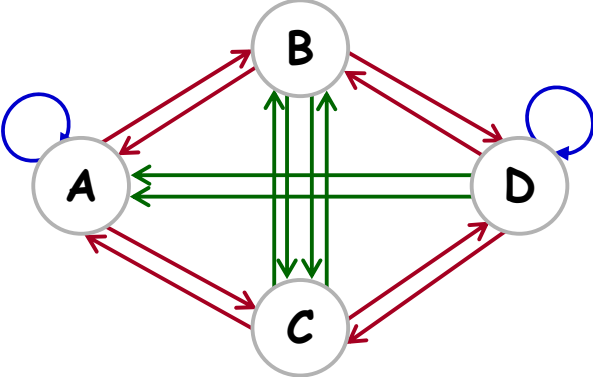
1. The relation: at 'A' is intransitive; at B is transitive; at C is transitive; at D is transitive
2. Directional connections
3. Double directions

## Notes

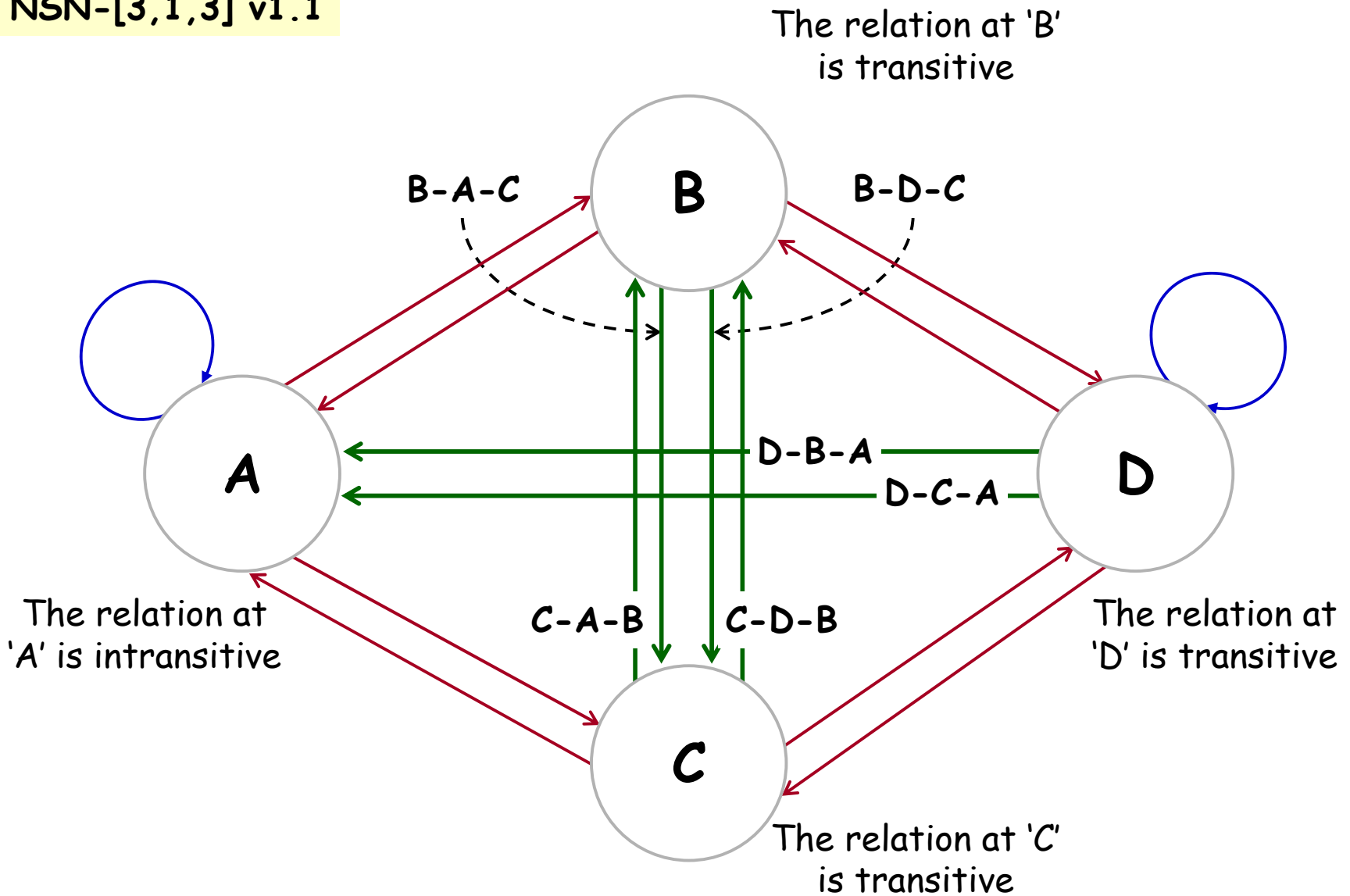
1. Changing the transitive relation at a node will change the matrix structure

ISN-[2,1,3] v1.1



Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Nonreflexive</li> <li>• Symmetric</li> <li>• Nontransitive</li> </ul> <p>NSN-[3,1,3] v1.1</p>		<table border="1" data-bbox="1440 350 1850 792"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>1</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <th>D</th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	0	B	1	0	1	1	C	1	1	0	1	D	1	1	1	1
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NSN-[3,1,3] v1.1



**Group**

**v1.1**

**RAN-[1,2,3]**

**IAN-[2,2,3]**

**NAN-[3,2,3]**

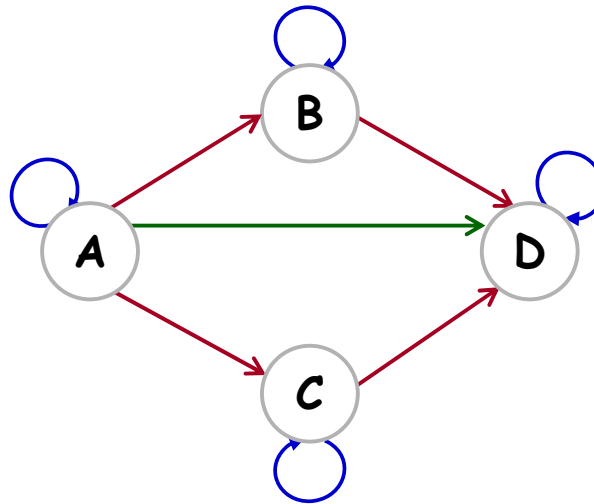
## Prose

### Relation 'Connected-to'

- Reflexive
- Asymmetric
- Nontransitive

RAN-[1,2,3] v1.1

## Structured Graph



## Matrix

	A	B	C	D
A	1	1	1	1
B	0	1	0	1
C	0	0	1	1
D	0	0	0	1

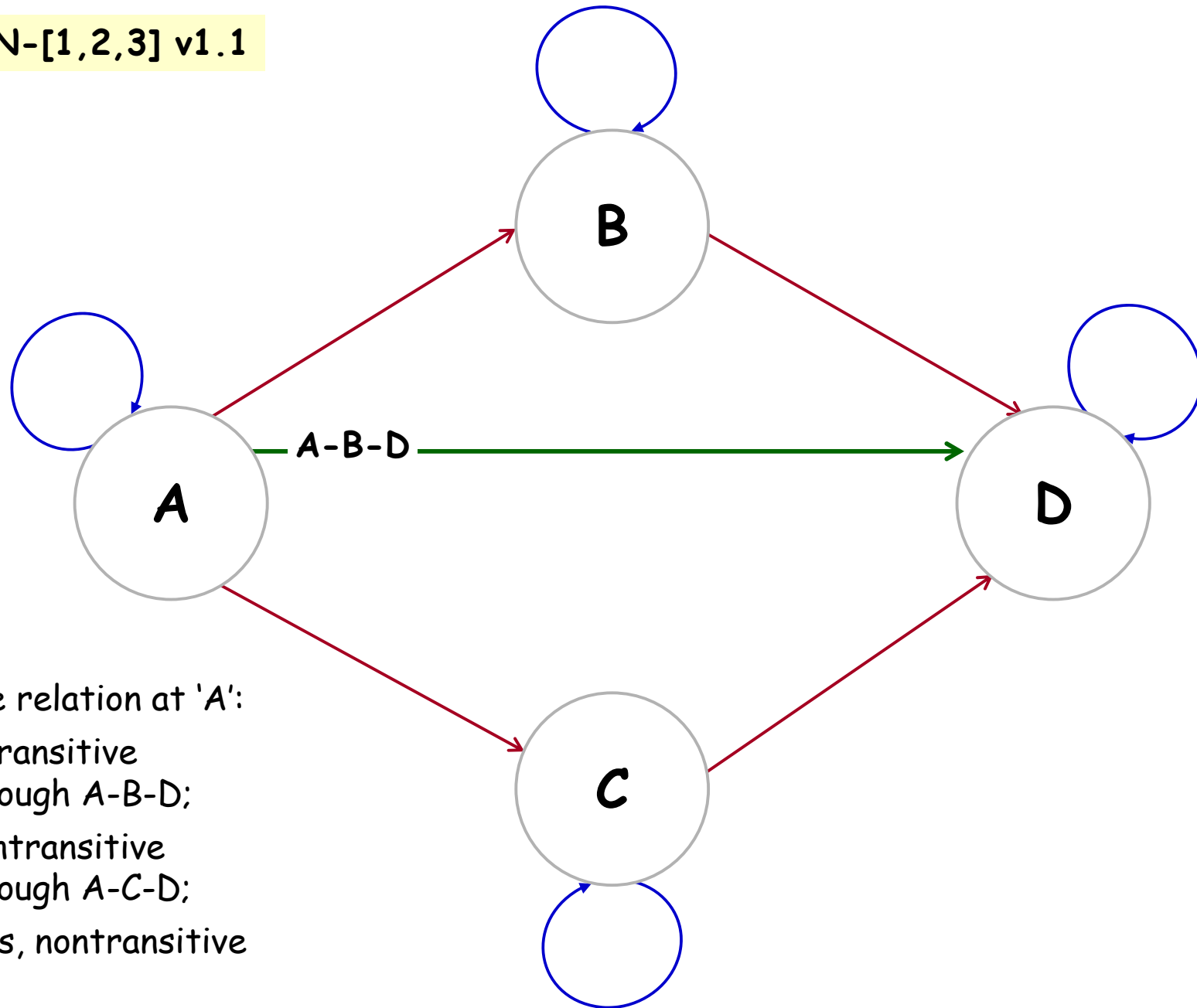
## Context

1. The relation at 'A': is transitive through A-B-D; is intransitive through A-C-D; thus, nontransitive
2. Directional connections
3. Single direction

## Notes

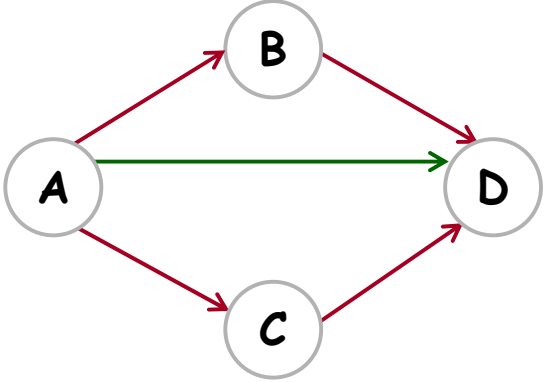
1. The matrix in this case does not distinguish between transitive and nontransitive

RAN-[1,2,3] v1.1

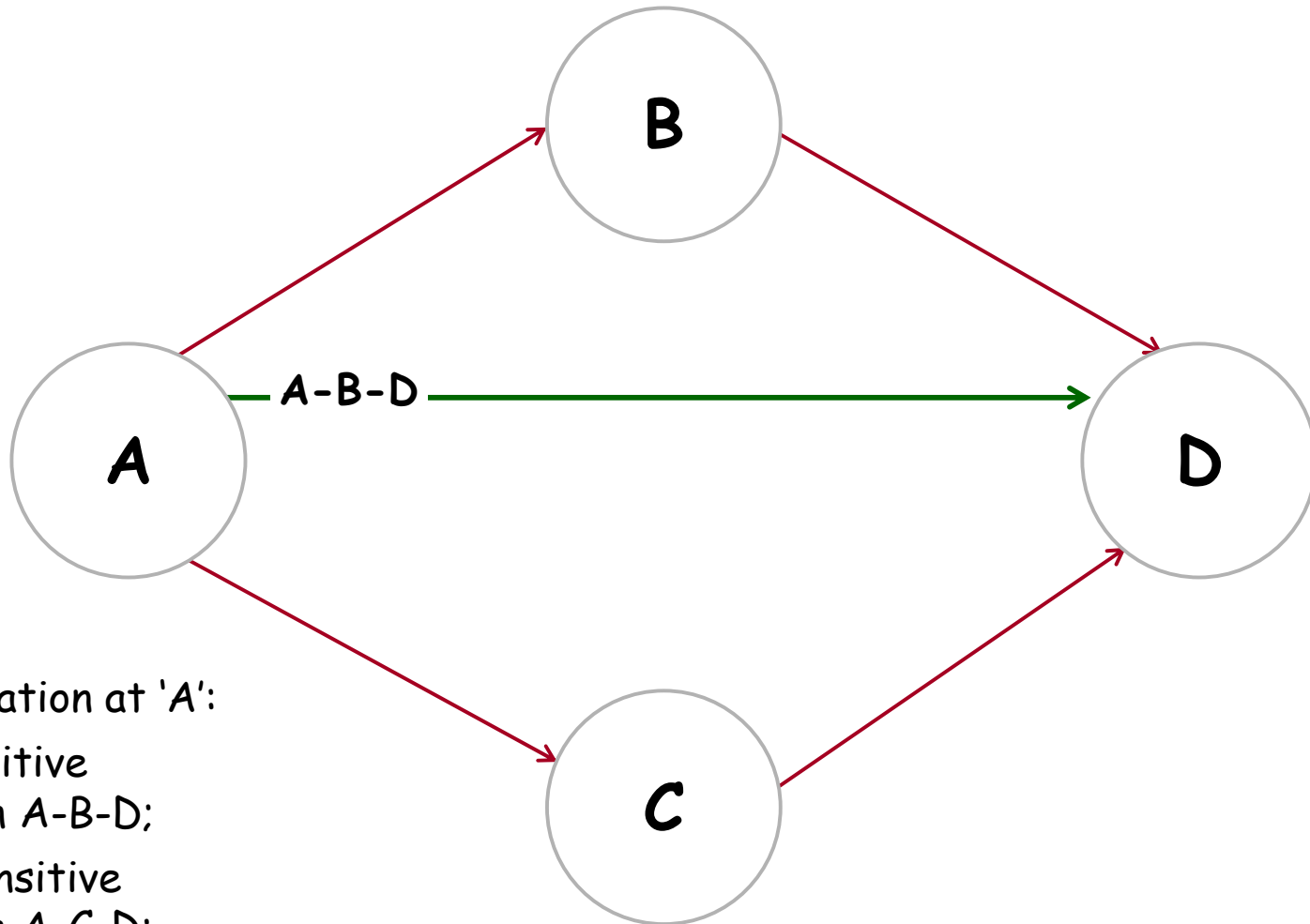


The relation at 'A':  
is transitive  
through A-B-D;  
is intransitive  
through A-C-D;  
thus, nontransitive

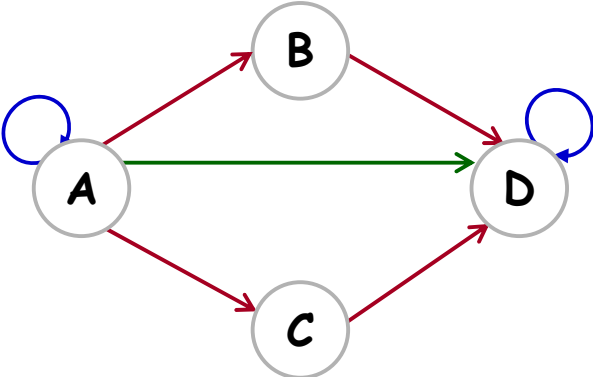


Prose	Structured Graph	Matrix																									
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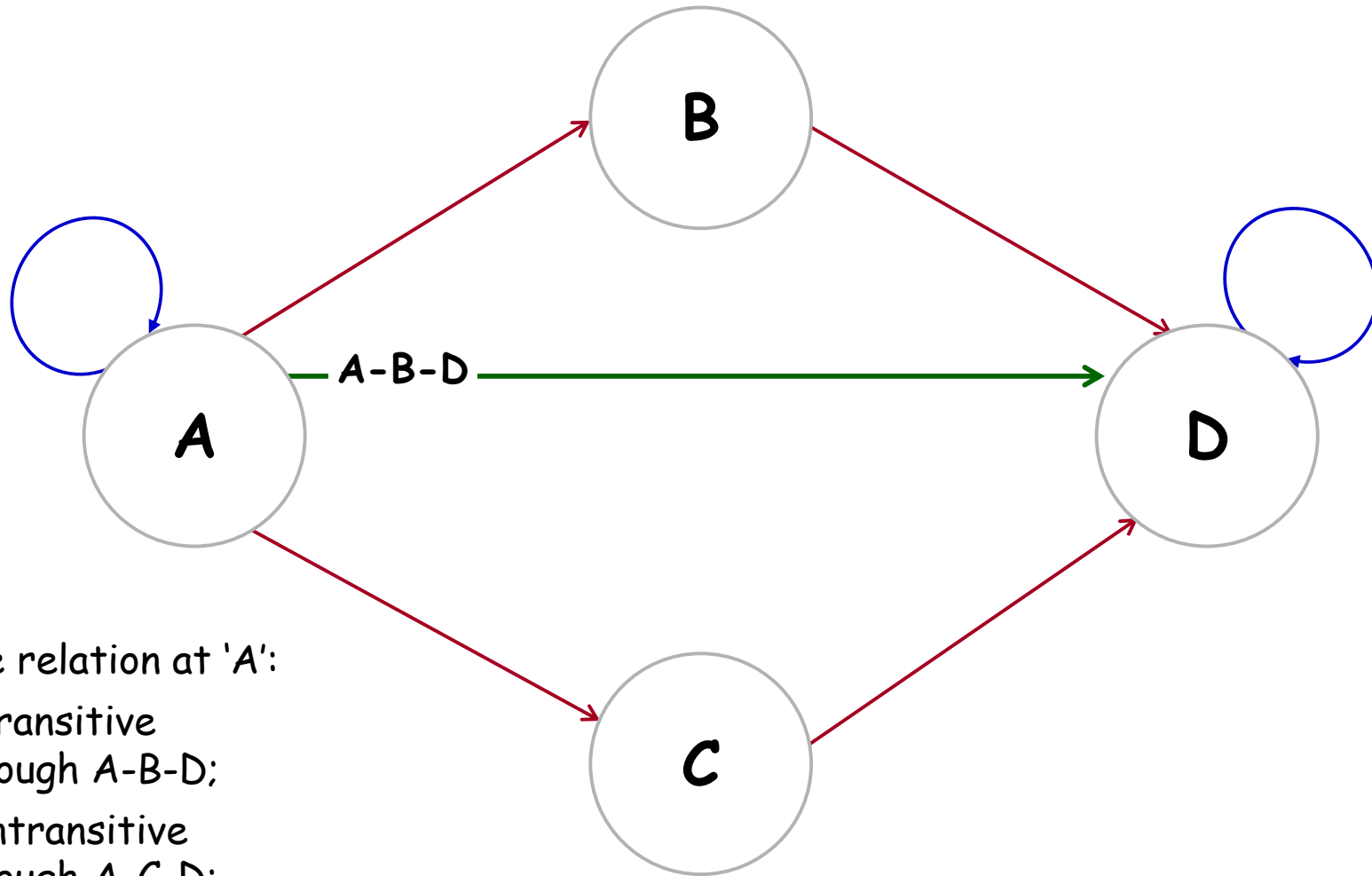
IAN-[2,2,3] v1.1



The relation at 'A':  
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through A-B-D;  
is intransitive  
through A-C-D;  
thus, nontransitive

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Nonreflexive</li> <li>• Asymmetric</li> <li>• Nontransitive</li> </ul> <p>NAN-[3,2,3] v1.1</p>		<table border="1" data-bbox="1440 350 1843 789"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <th>B</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>C</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> <tr> <th>D</th> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	1	B	0	0	0	1	C	0	0	0	1	D	0	0	0	1
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NAN-[3,2,3] v1.1



The relation at 'A':  
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through A-B-D;  
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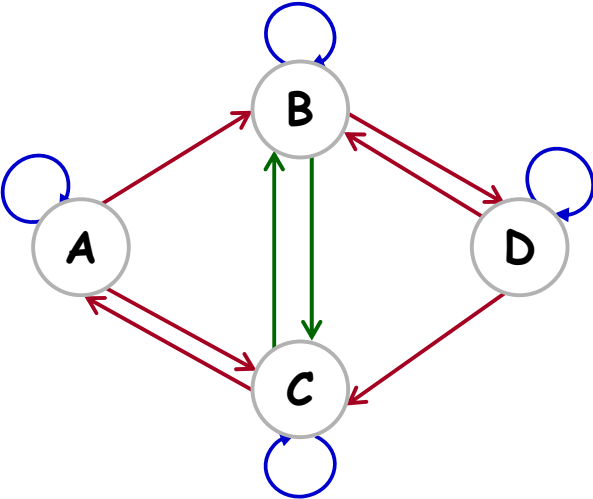
# **Group**

## **v1.1**

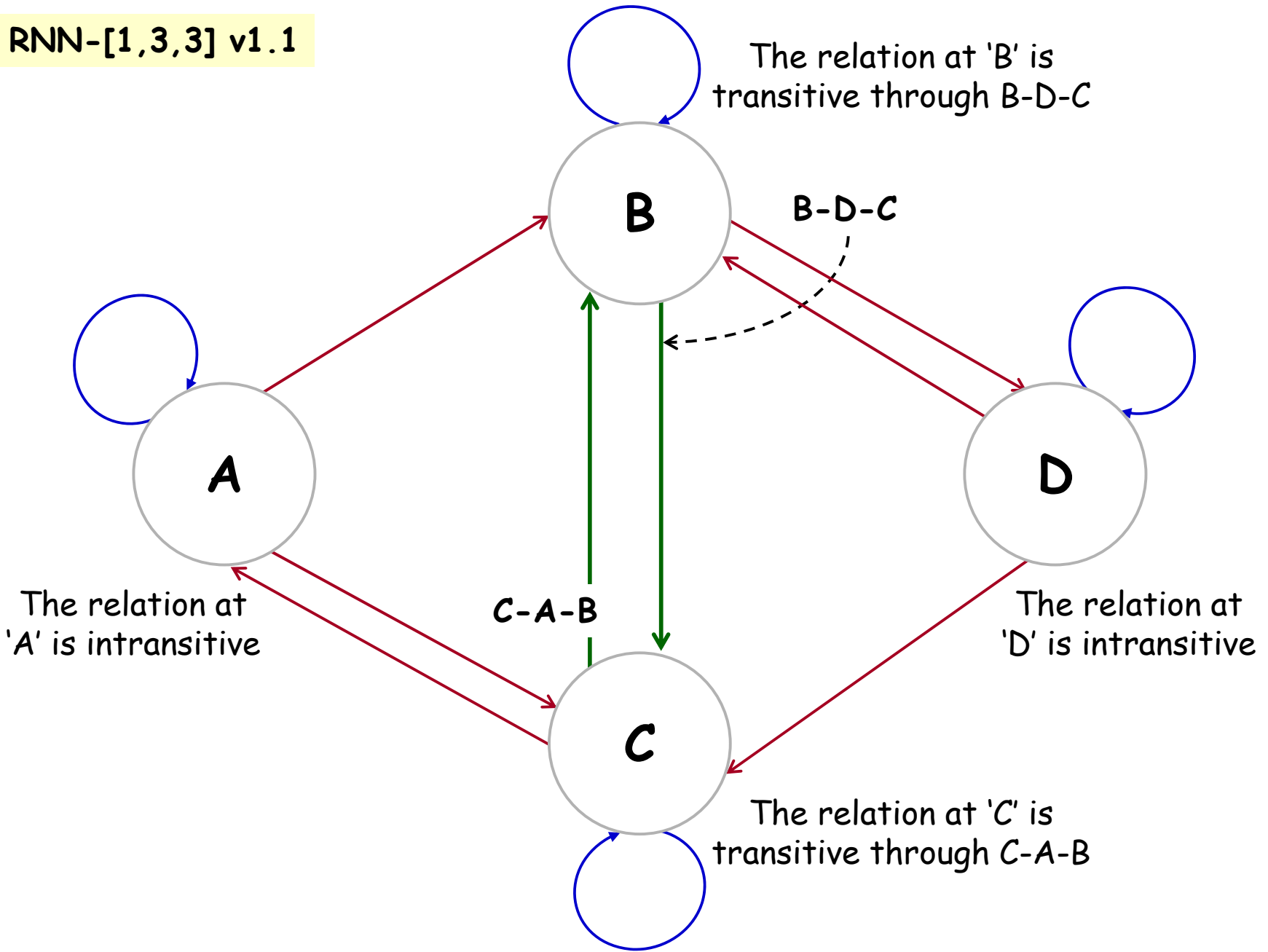
**RNN-[1,3,3]**

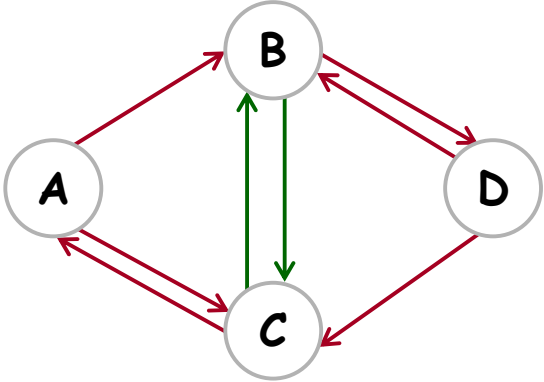
**INN-[2,3,3]**

**NNN-[3,3,3]**

Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Reflexive</li> <li>• Nonsymmetric</li> <li>• Nontransitive</li> </ul> <p>RNN-[1,3,3] v1.1</p>		<table border="1" data-bbox="1440 350 1850 792"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>D</th> <td>0</td> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>		A	B	C	D	A	1	1	1	0	B	0	1	1	1	C	1	1	1	0	D	0	1	1	1
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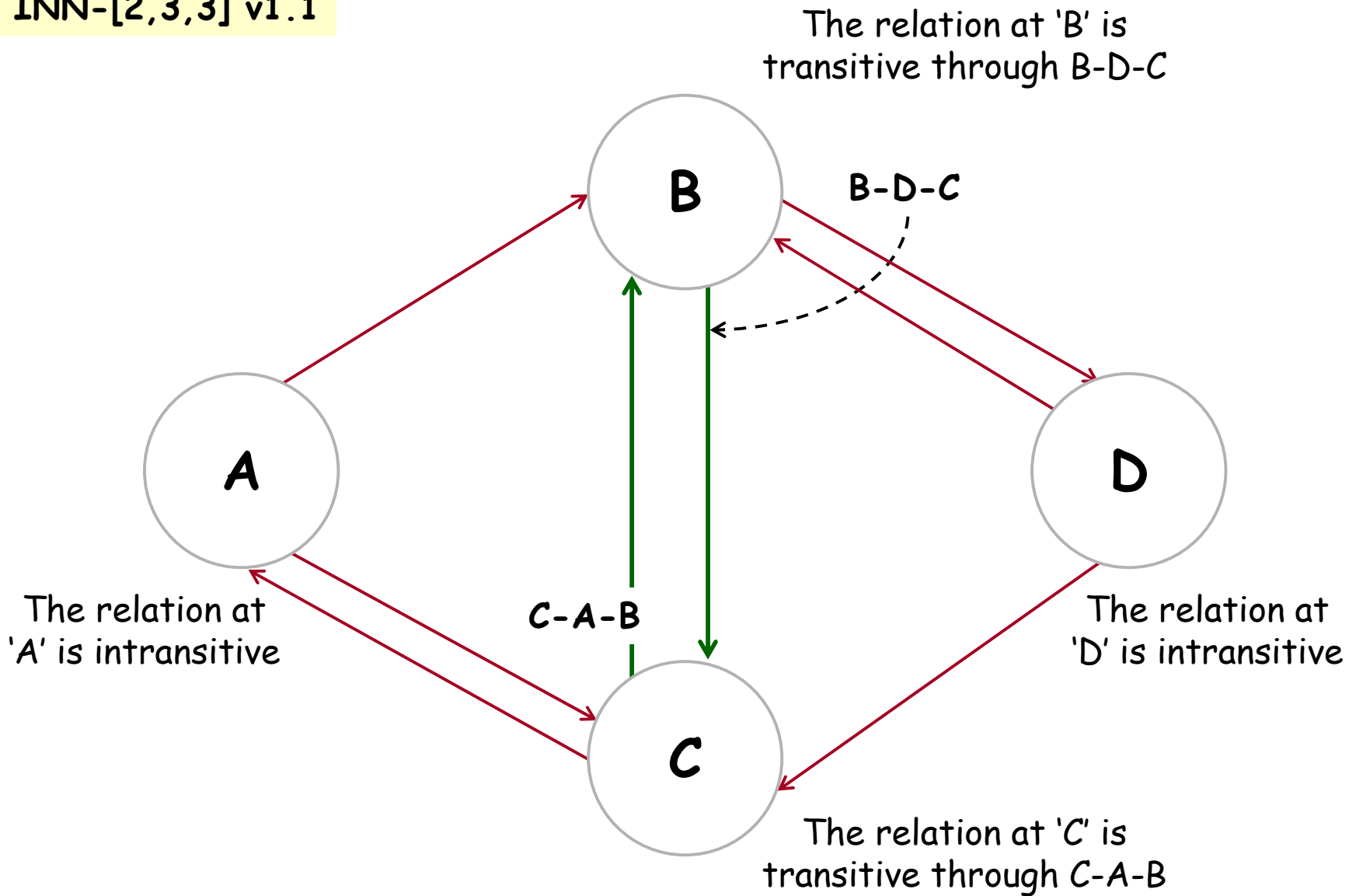
RNN-[1,3,3] v1.1

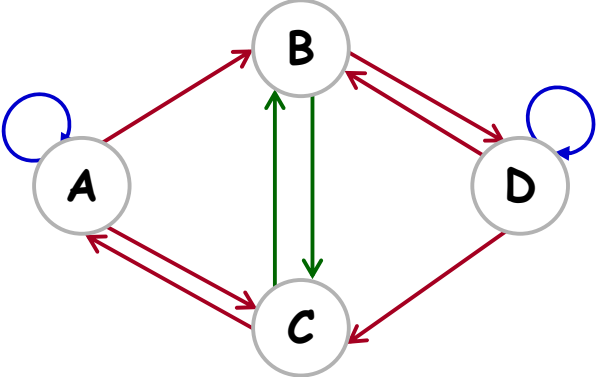


Prose	Structured Graph	Matrix																									
<p>Relation 'Connected-to'</p> <ul style="list-style-type: none"> <li>• Irreflexive</li> <li>• Nonsymmetric</li> <li>• Nontransitive</li> </ul> <p>INN-[2,3,3] v1.1</p>	 <p>[Absence of self-referential edges]</p>	<table border="1" data-bbox="1440 354 1852 797"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <th>A</th> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> <tr> <th>B</th> <td>0</td> <td>0</td> <td>1</td> <td>1</td> </tr> <tr> <th>C</th> <td>1</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <th>D</th> <td>0</td> <td>1</td> <td>1</td> <td>0</td> </tr> </tbody> </table>		A	B	C	D	A	0	1	1	0	B	0	0	1	1	C	1	1	0	0	D	0	1	1	0
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INN-[2,3,3] v1.1



Prose	Structured Graph	Matrix																									
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NNN-[3,3,3] v1.1

