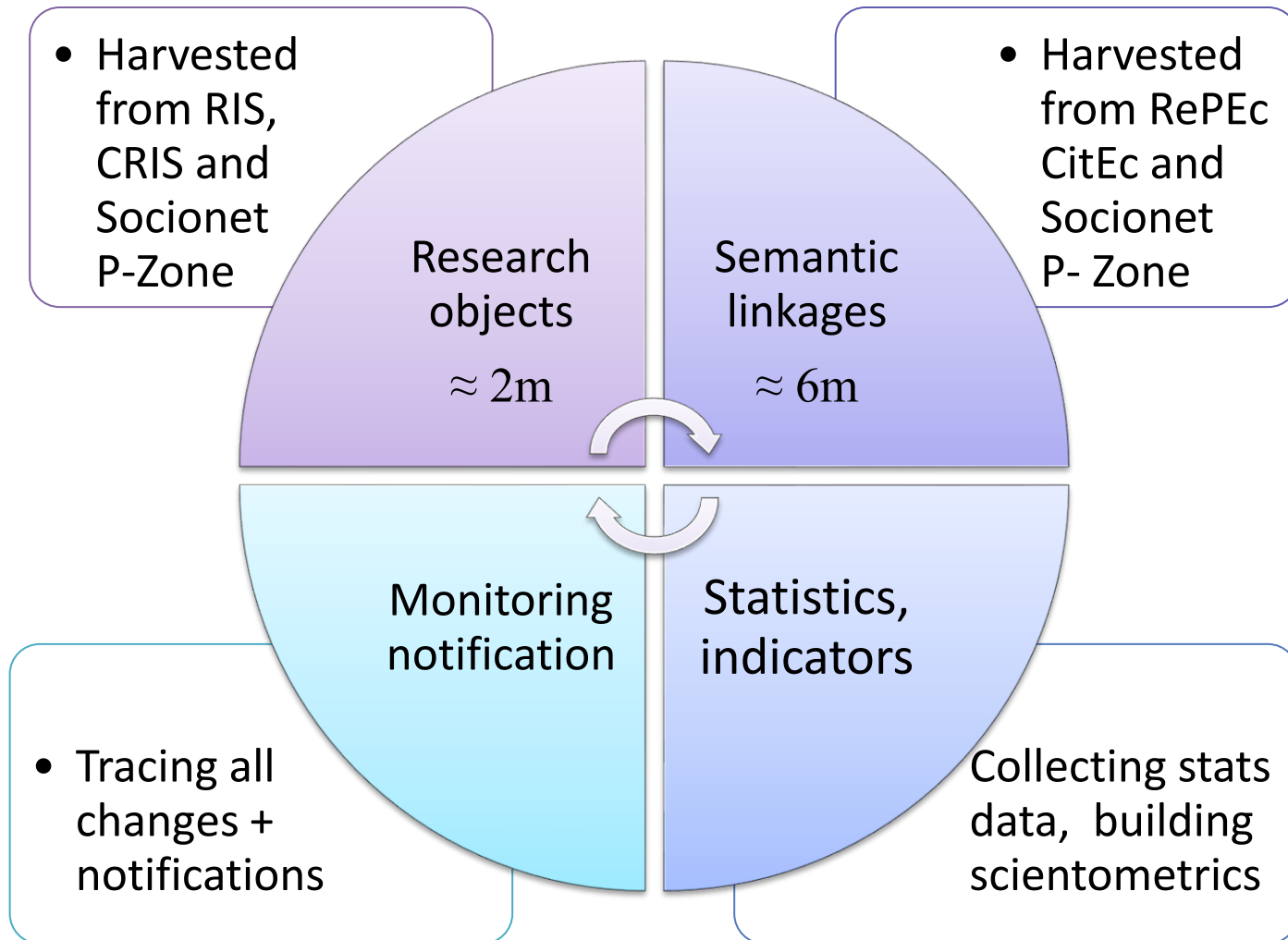


An application of semantic linkage technique within a CRIS

Sergey Parinov, Central Economics and Mathematics Institute of RAS, Moscow

Socionet.ru CRIS driven by scientific community



Information Objects at Socionet

Organization

Total number of linkages (ingoing, outgoing), statistics, other properties of related objects

Authors

Aggregated number of linkages (ingoing, outgoing)

Aggregated statistics (downloads, views)

Research outputs (RO)

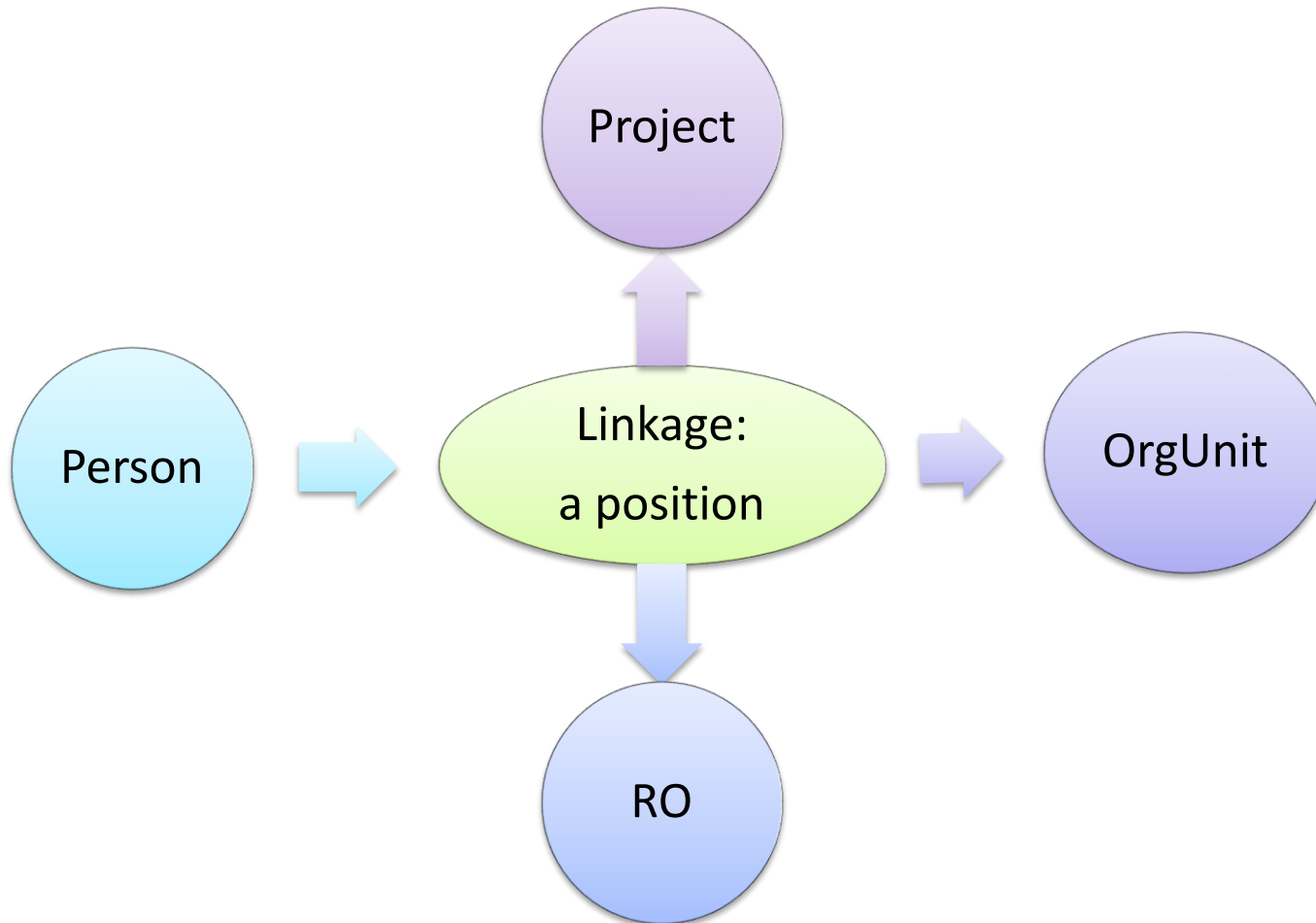
citations / references

downloads / views

Sources of semantic linkages

- CitEc.repec.org - about **5M** linkages have a semantic meaning the “citation”, but authors of these citation linkages can semantically enrich them by using Socionet tools and semantic vocabularies
- RePEc collections - about **700K** of semantic linkages embedded into personal and organization profiles metadata
- Socionet Personal Zone – about **300K** of semantic linkages created by users within Socionet virtual research environment

Obvious use cases: {person, organization, RO, etc.}



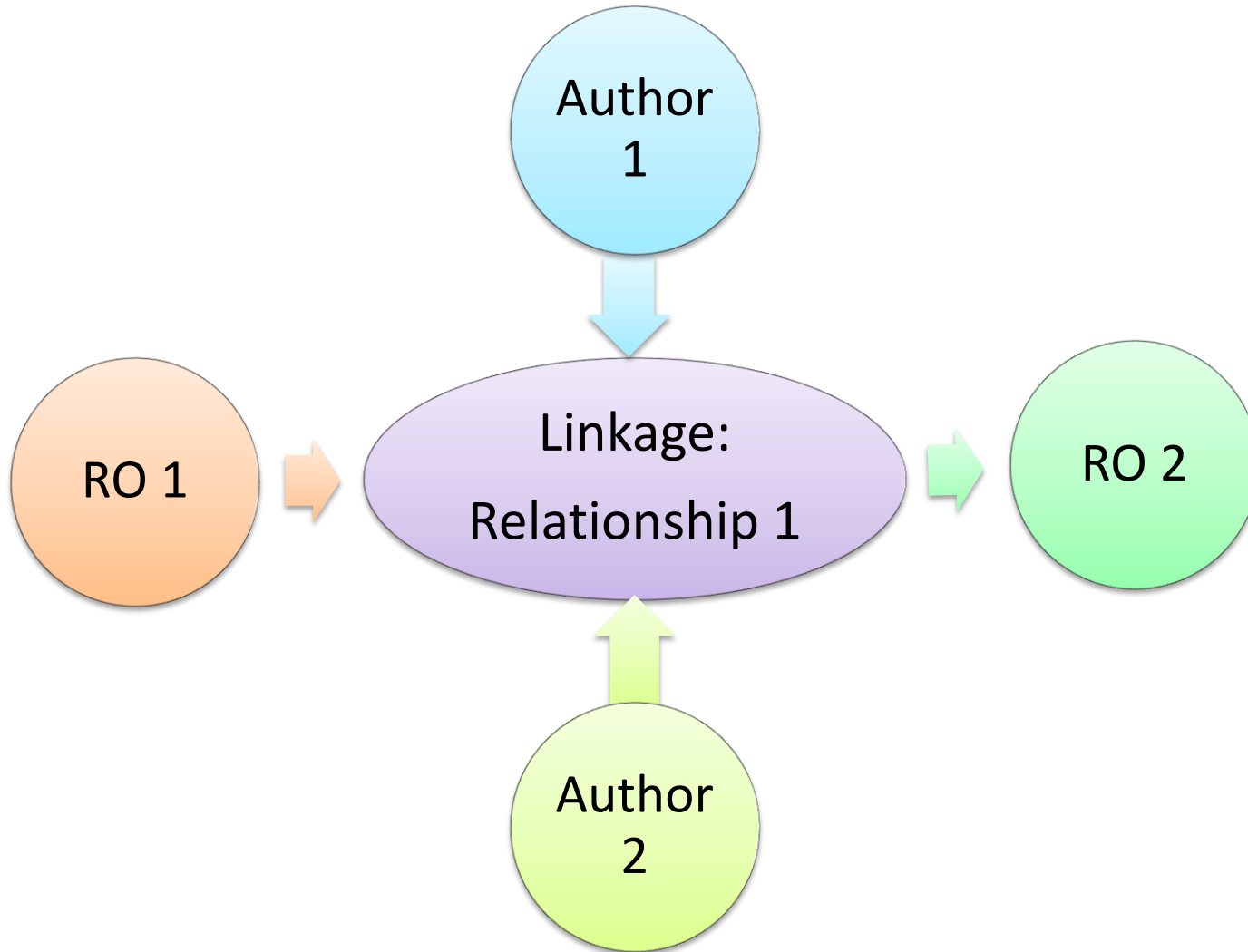
"person" →
"organization"
(*"employee"*,
"head",
"director", etc.)

"person" →
"person"
(*"manager"*,
"supervisor", etc.)

"person" →
"research output
/ project"
(*"author"*,
"editor",
"translator", etc.)

"organization" →
"research output"
(*"publisher"*,
*"organizational
author"*, etc.)

Use cases of a new research practice: {person, RO, etc.}



Inference ("*obtain background from*", "*updates*", etc.)

Impact/usage ("*contains assertion from*", "*corrects*", etc.)

Hierarchical and associative ("*broader*", "*narrower*", etc.)

Components of scientific composition ("*duplicate*", "*revised*", etc)

Usage proposal ("*can improve*", "*can illustrate*", "*can replace*", etc)

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keywords:

authors:

run search

Extended Search

Where search:

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- EconPapers
- Google

Rating



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Series Name: **"Национальная онлайн инфраструктура для науки и образования"; Socionet**

and Publisher:

Number of publications: **31** Creation date: **2007-01-03**

Filter by:

Sort by: **Date** [Title] [Author(s)] | linkages: [outgoing] [ingoing] | statistics: [downloads] [views]

1	<i>Semantic Linkages in Research Information Systems as a New Data Source for Scientometric Studies</i> (date: 2013-09-09) Sergey Parinov (Паринов Сергей) Mikhail Kogalovsky (Когаловский Михаил)	17/2	13/27
2	<i>The electronic library: using technology to measure and support Open Science</i> (date: 2013-09-09) Sergey Parinov (Паринов Сергей)	9/7	32/106
3	<i>Towards a Semantic Segment of a Research e-Infrastructure: necessary information objects, tools and services</i> (date: 2012-12-20) Sergey Parinov (Паринов Сергей)	9/2	10/24
4	<i>Open Repository of Semantic Linkages</i> (date: 2012-07-03) Sergey Parinov (Паринов Сергей)	4/4	12/40
5	<i>Science as a social system and virtual research environment</i> (date: 2011-11-07) Sergey Parinov (Паринов Сергей) Cameron Neylon	4/2	17/40
6	<i>Технология поддержки электронных научных публикаций как «живых» документов</i> (date: 2011-11-07) Паринов Сергей Иванович Когаловский Михаил Рувимович	11/4	67/185
7	<i>Технология семантического структурирования контента научных электронных библиотек</i> (date: 2011-11-07) Паринов Сергей Когаловский Михаил Рувимович	12/6	18/65
8	<i>RePEc and Socionet as partners in a changing digital library environment, 1997 to 2004</i>		

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Series Name **"Personal data of RePEc authors registered by RAS service";**
 and Publisher: **RePEc Author Service**

Number of publications: **48101** Creation date: **2000-07-27**

Filter by:

Sort by: [\[Date\]](#) [\[Person names\]](#) | linkages: [\[outgoing\]](#) **ingoing** | statistics: [\[downloads\]](#)
[\[views\]](#)

1	Shleifer, Andrei (date: 2013-10-03)	3677/ 36772	47/194
2	Barro, Robert J (date: 2013-10-28)	1505/ 25027	97/251
3	Heckman, James J (date: 2013-10-17)	4678/ 24014	172/490
4	Gertler, Mark L (date: 2013-09-18)	1816/ 22172	42/215
5	Campbell, John Y (date: 2013-11-13)	3934/ 20844	40/212
6	Rogoff, Kenneth S (date mod.: 2013-11-14)	2905/ 20813	231/279
7	Gali, Jordi (date: 2013-10-27)	2609/ 18251	172/121
8	Lopez-de-Silanes, Florencio (date: 2013-10-08)	2026/ 17866	13/80
9	Vishny, Robert W (date: 2012-06-21)	647/ 16835	28/62
10	Levine, Ross (date: 2013-11-06)	4550/ 16825	47/188
11	Mankiw, N. Gregory (date: 2013-09-10)	1660/ 16366	35/372
12	Stiglitz, Joseph E (date: 2013-10-01)	1857/ 15909	106/550
13	Tirole, Jean (date: 2013-10-19)	2090/ 15264	59/221
14	Reinhart, Carmen M (date: 2013-11-13)	3596/ 14852	52/227
15	Obstfeld, Maurice (date: 2013-09-19)	2778/ 14706	184/173
16	La Porta, Rafael (date: 2013-10-08)	1280/ 14279	7/57
17	Acemoglu, Daron (date: 2013-10-23)	4166/ 13826	134/440
18	Blanchard, Olivier (date: 2013-11-08)	1477/ 13686	28/119
19	Becker, Gary S (date: 2013-07-03)	384/ 13556	86/152

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Archives | Discipline | Section |

Series Name **"EDIRC - Economics Departments, Institutes and Research Centers in the World";**
 and Publisher: **EDIRC service**

Number of publications: **12668** Creation date: **2000-07-31**

Filter by:

Sort by: [Date] [Title] | linkages: [outgoing] **ingoing** | statistics: [downloads] [views]

1	National Bureau of Economic Research (NBER) (date mod.: 2013-11-14)	330965/839934	7573/28023
2	Centre for Economic Policy Research (CEPR) (date: 2013-11-10)	257228/353969	6509/19644
3	Institute for the Study of Labor (IZA) (date: 2013-11-09)	339516/305140	7389/29064
4	Harvard University (date: 2013-11-09)	45761/243663	953/3860
5	CESifo (date: 2013-11-09)	195060/130551	3035/10710
6	Massachusetts Institute of Technology (MIT) (date: 2013-10-07)	25246/99328	648/2374
7	Princeton University (date mod.: 2013-11-14)	20719/98091	760/2202
8	University of California-Berkeley (date: 2013-11-02)	28315/92324	876/3462
9	University of Chicago (date: 2013-11-11)	20023/88105	675/2086
10	University of Chicago (date: 2013-11-12)	17746/86005	406/1407
11	Columbia University (date: 2013-06-27)	22903/76427	738/2380
12	New York University (NYU) (date: 2013-10-10)	21260/75430	1351/4496
13	Stanford University (date: 2013-09-29)	9363/74537	1286/3613
14	Harvard University (date: 2013-11-07)	22883/69285	327/1735
15	International Monetary Fund (IMF) (date: 2013-11-02)	64069/66682	1858/4563
16	World Bank Group (date: 2013-11-09)	55344/62196	2963/4829
17	Yale University (date: 2013-10-14)	23696/60433	1189/2786
18	Stanford University (date: 2013-10-27)	19643/60071	563/1706
19	Oxford University (date: 2013-11-09)	39172/59771	1614/2463
20	Federal Reserve Board (Board of Governors of the Federal Reserve System) (date: 2013-11-02)	36358/58976	747/2262

Semantic structure of linkages

Research object: **Паринов Сергей Иванович**

total linkages: 486
date: 2013-11-14 | object type: person-object

Outgoing linkages, total: **226 (47%)**

Ingoing linkages, total: **260 (53%)**

Outgoing scientific relationships

title	share	%
research usage (3)	1	1
research material components (3)	1	1
to organization from the person (1)	0	0
to created collections (12)	5	5
to relative materials (1)	0	0
personal opinion (11)	5	5
to materials from the author (68)	30	30
hierarchy and association (3)	1	1
to out-of-date versions (6)	3	3
to cited materials (118)	52	52

Ingoing scientific relationships

title	share	%
research usage (9)	3	3
research material components (2)	1	1
researcher - research output relationship (147)	57	57
personal opinion (1)	0	0
from organizations to the person (1)	0	0
hierarchy and association (3)	1	1
from new versions (4)	2	2
from citing materials (93)	36	36

Motivations of outgoing relationships

title	share	amount
uses method from	1	1
contains assertion from	2	2
revised or new version	1	1
duplicated copy	2	2
related or relevant to	1	1
extends or broader	2	2
obtain background from	1	1
		=10

Motivations of ingoing relationships

title	share	amount
uses method from	1	1
contains assertion from	1	1
duplicated copy	2	2
related or relevant to	1	1
extends or broader	2	2
obtain background from	1	1
		=8

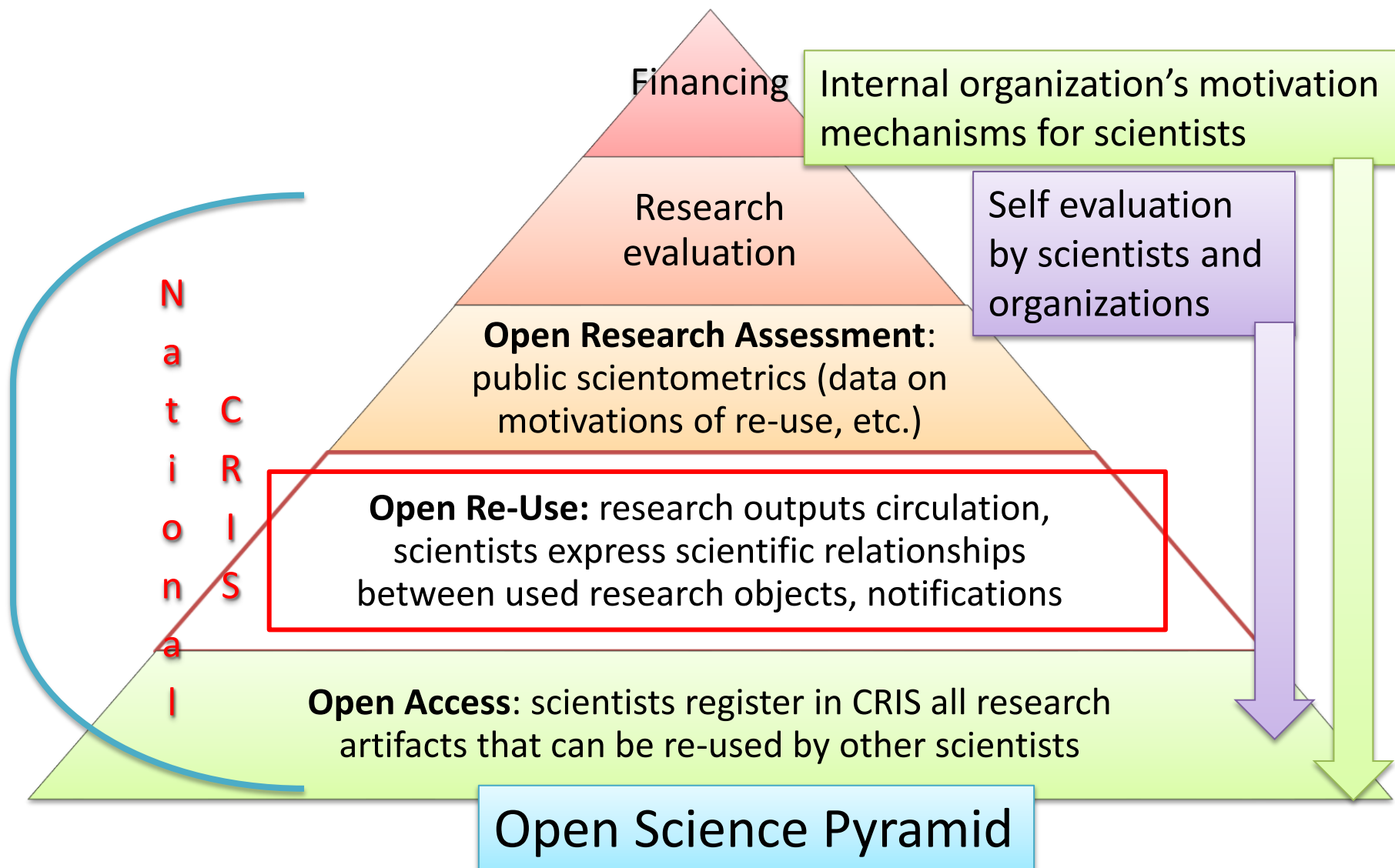
Outgoing sentiments

title	share	amount
very interesting result	4	4
turning point for the science development	1	1
responds positively to	6	6
		=11

Ingoing sentiments

title	share	amount
responds positively to	1	1
		=1

Expected changes for CRIS-CERIF agenda



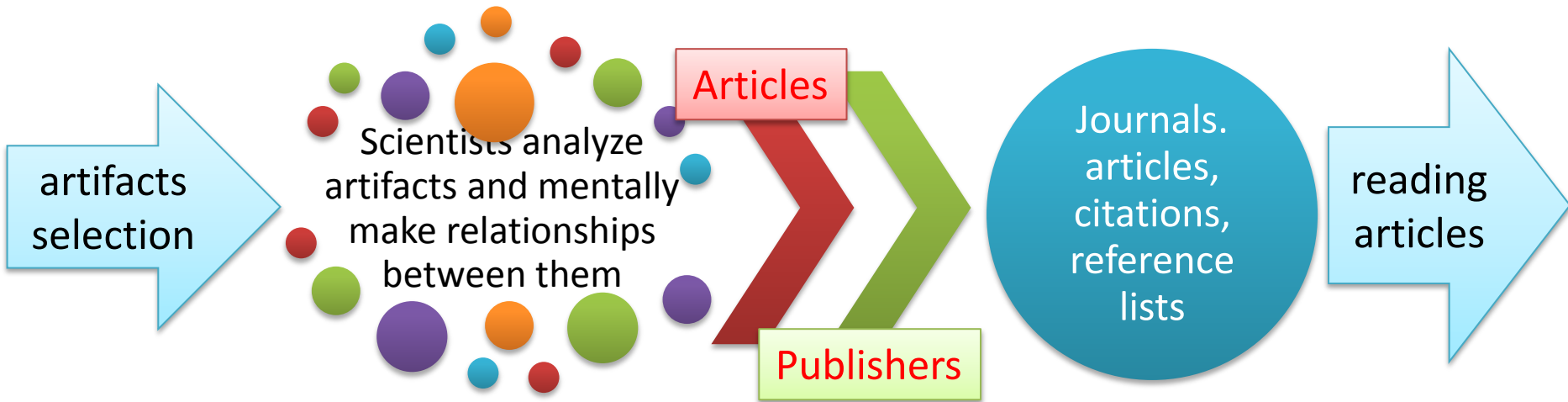
Re-Use meaning for the Research Area

- Scientists use RO when they mentally manipulate (“tries and fails”) with them to discover relationships and, if positive, thereby they re-use RO to produce a new scientific knowledge
- Some of these relationships become visible in scientists’ articles by citations. But because of limitations of the existed “citation” technique some relationships remain in a mental form only
- Latent relationships are not shared with the research community, it is not utilized in a global research process, and the community has no complete picture about scale and scope of RO using and impact

Open Re-Use requirements

- Open re-use requirements
 - 1) An openness of results of researchers' **manipulation** of the materials. It should be clear specified what pieces of the materials were **selected** by the researcher as **artifacts** for its further **using**
 - 2) An openness of researchers' **motivations to use** selected artifacts in producing new scientific knowledge
 - 3) A guaranteed **awareness** of researchers on all facts of using their research outputs (tries/fails data and motivations) and about impacts of the outputs
 - 4) An openness of **usage statistics** aggregated by a research output, a researcher and an organization

Paper-based re-use technology



CRIS-based open re-use technology

Tools to register RO in more reusable forms, e.g. like micro-pub, nano-pub, and research artifacts

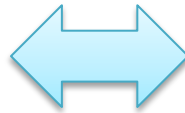
Tools to express research relationships between artifacts, including tries/fails data and motivations to use them

Services to make immediate notifications about using your artifacts with ability to react on it

Services to collect statistics, process it and update usage "portraits" of RO, scientists and organizations

Open re-use benefits: a new research communication

- To receive immediate signals about who and how used your RO
- To request on using or reviewing own RO by linking it with other RO or scientists' profiles
- To protest against or confirm usage characteristics of your RO, or provide other feedback
- To upgrade own RO by using/citing suggested artifacts, or to ban requests from some authors, etc.













A communication among researchers becomes stronger with better and faster coordination of individual activities

Extended research assessment data

- Automatic daily gathering and updating of scientometric “portraits” of a scientist, a department and an organization
- Quantitative indicators
 - Numbers of created/used artifacts and relationships
- Qualitative indicators
 - Statistical distributions (how scientists, laboratory, organization used research artifacts and how the community used their RO)

t-ink.xml?h=repec:rus:ecoper:parinov_sergey.56054-1&l=en

Motivations of outgoing relationships	
title	share amount
uses method from 	1
contains assertion from 	2
revised or new version 	1
duplicated copy 	2
related or relevant to 	1
extends or broader 	2
obtain background from 	1
	=10
Outgoing sentiments	
title	share amount
very interesting result 	4
turning point for the science development 	1
responds positively to 	6
	=11

Proposals for collaboration

- Development of a concept and a CRIS-CERIF technology for:
 - Open (re)-Use
 - Open Research Assessment
 - Open Science