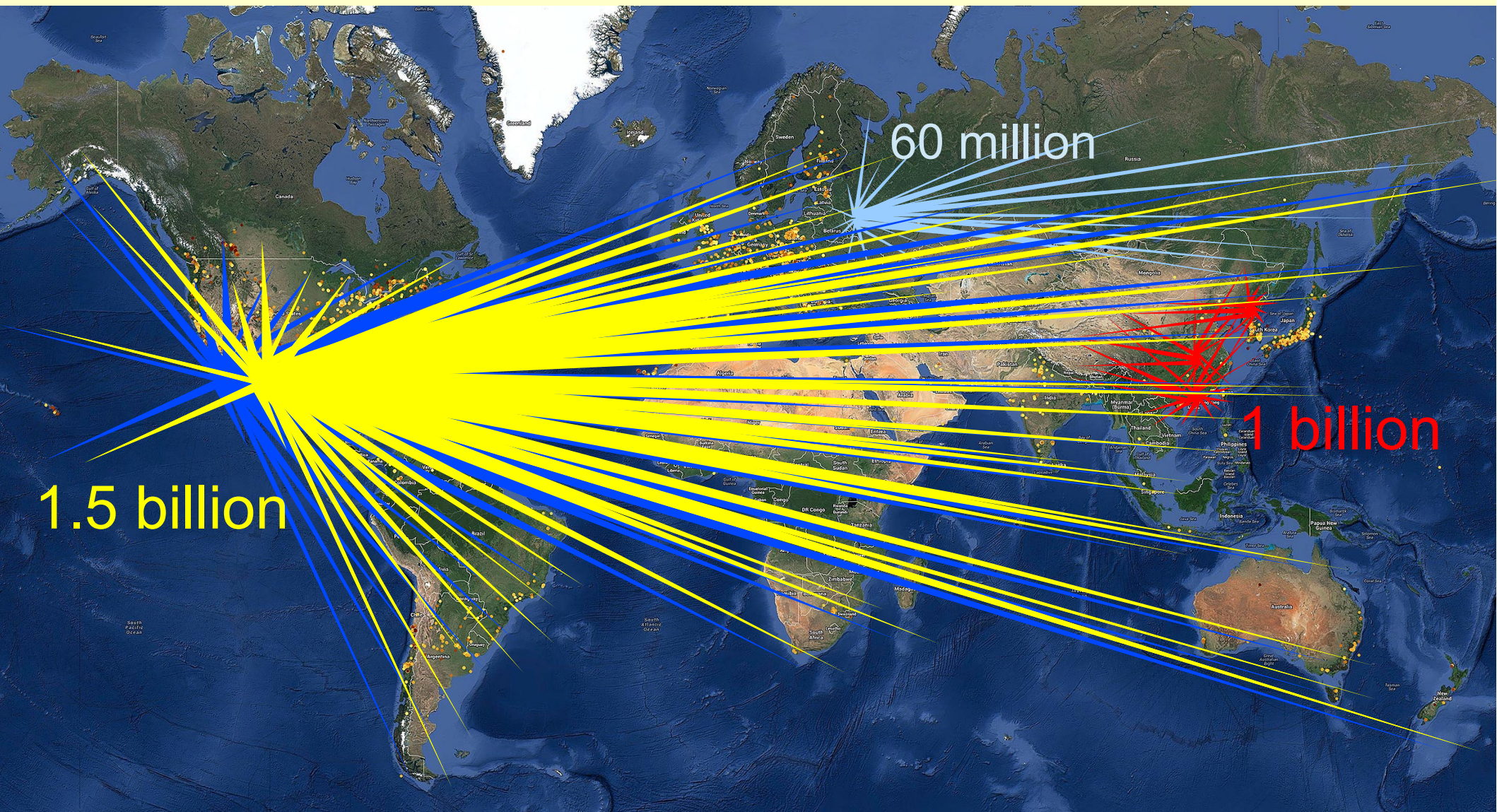


Studying human social environment and state with social network data

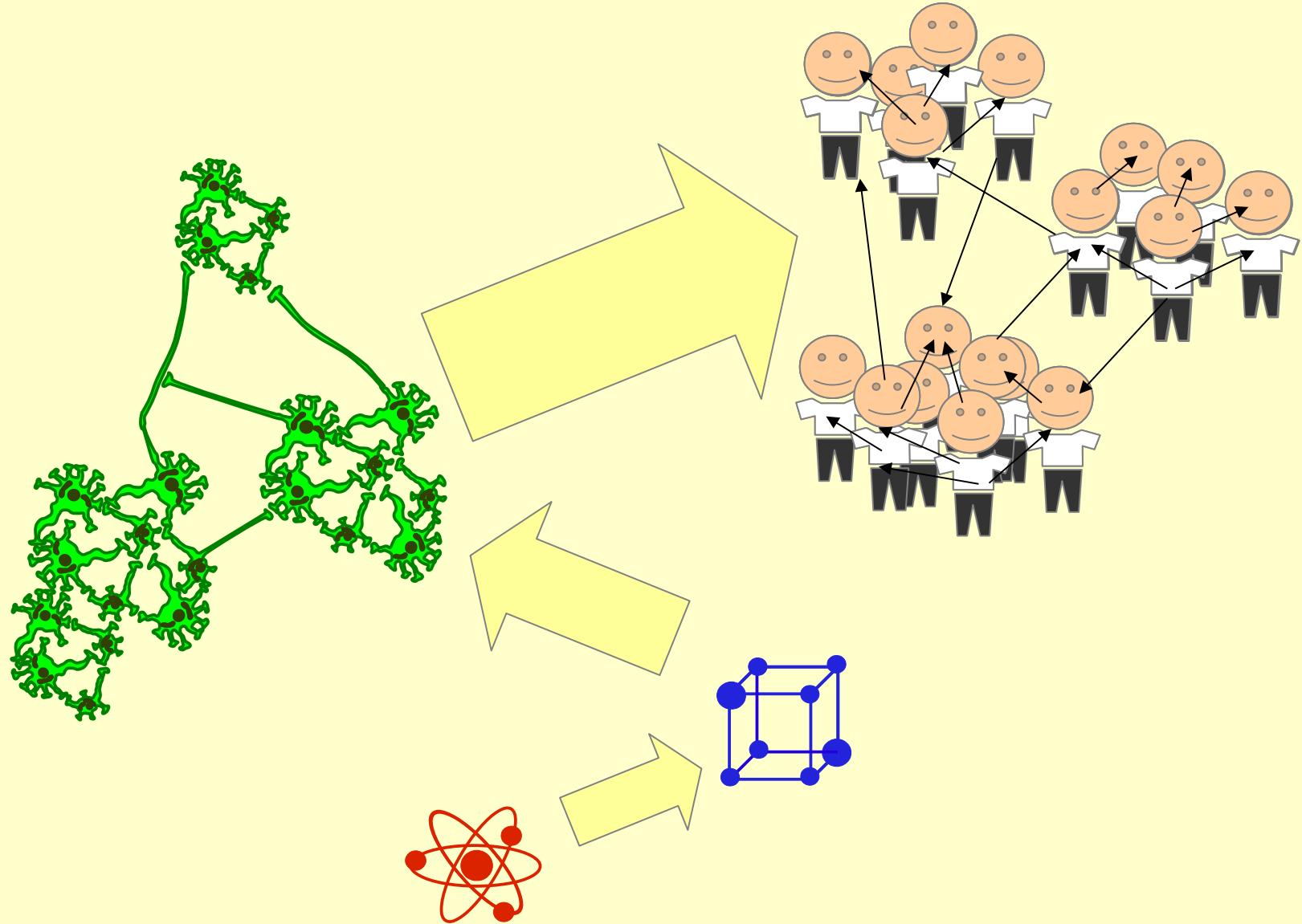
Anton Kolonin
Institute of Cytology and Genetics SB RAS,
Aigents Group
Novosibirsk, Russia
akolonin@aigents.com



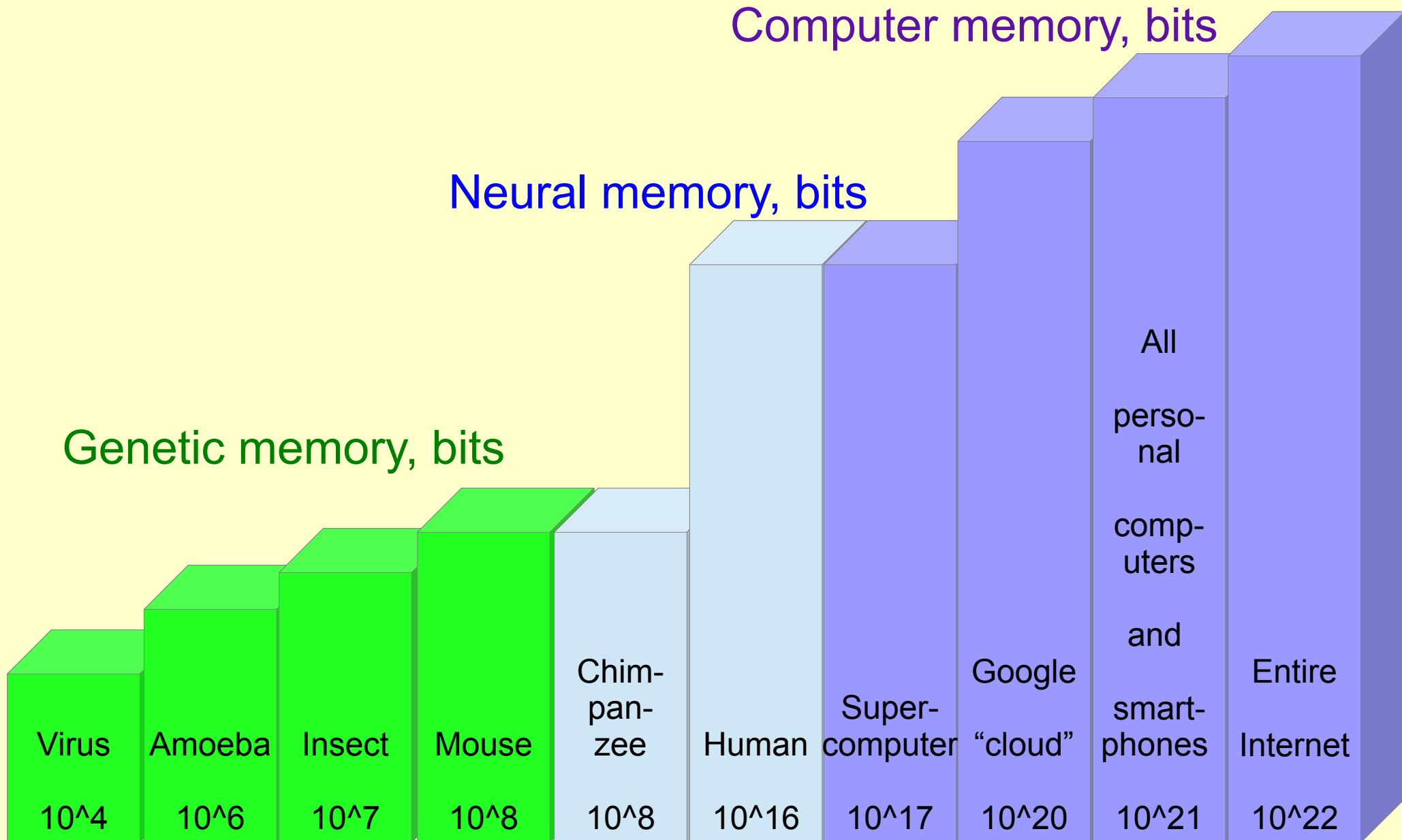
Amount of users plugged into social networks worldwide Google+Facebook (in entire world), Baidu/QQ etc. (in China)



Development of social networks - next phase of increasing complexity by means of creating higher-level structures with lower-level elements

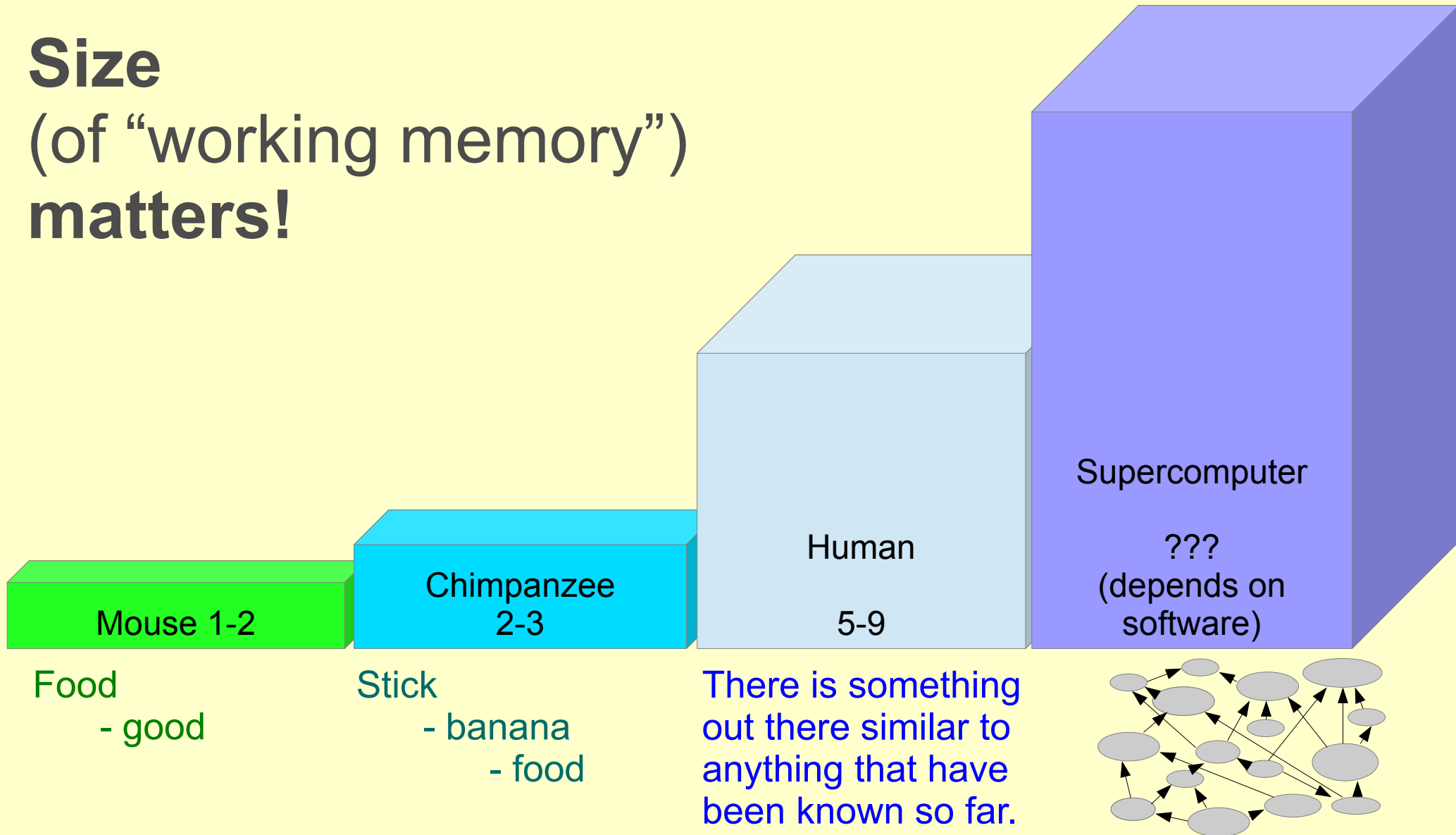


Evolution of information storage capacity growth

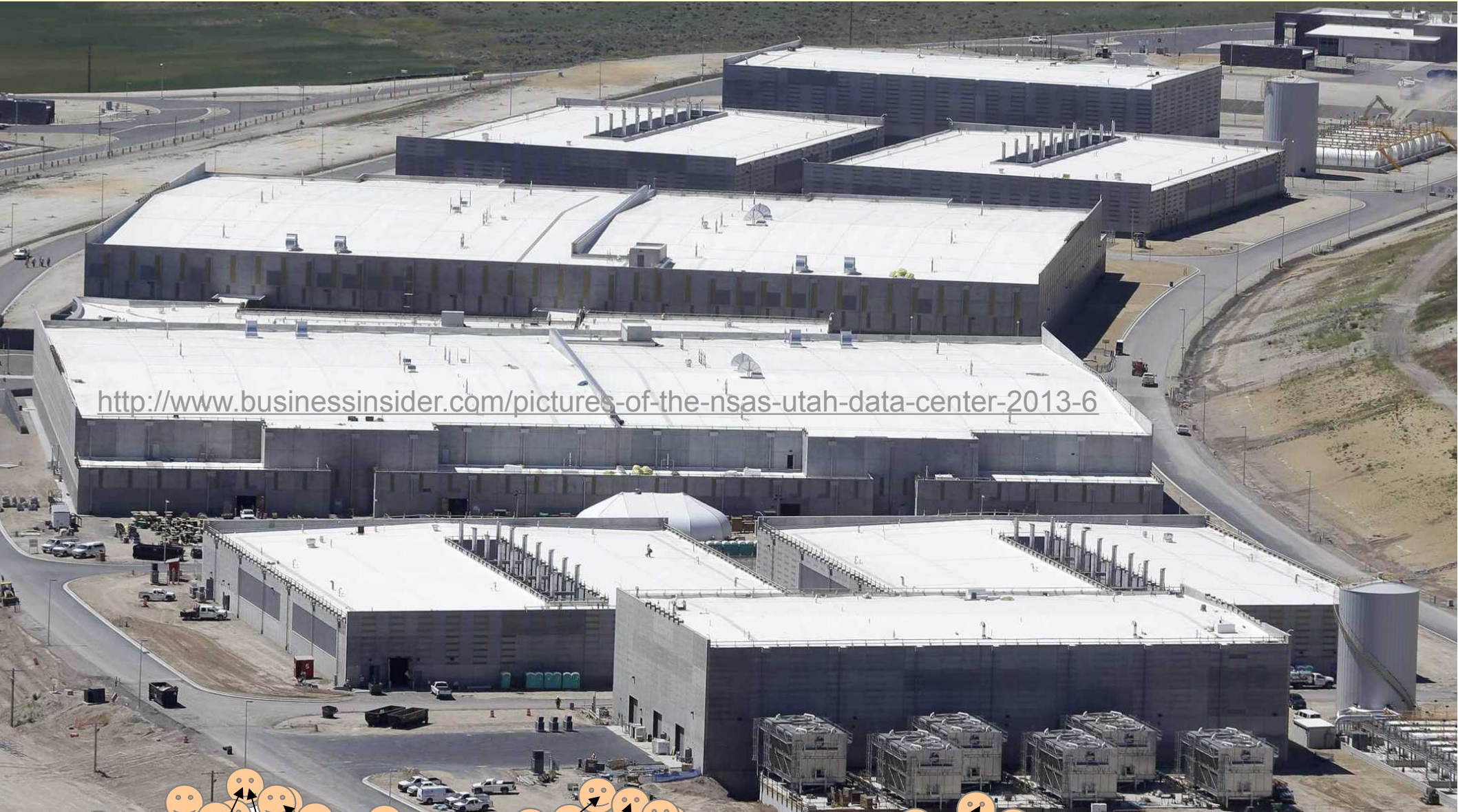


Evolution of working memory capacity growth

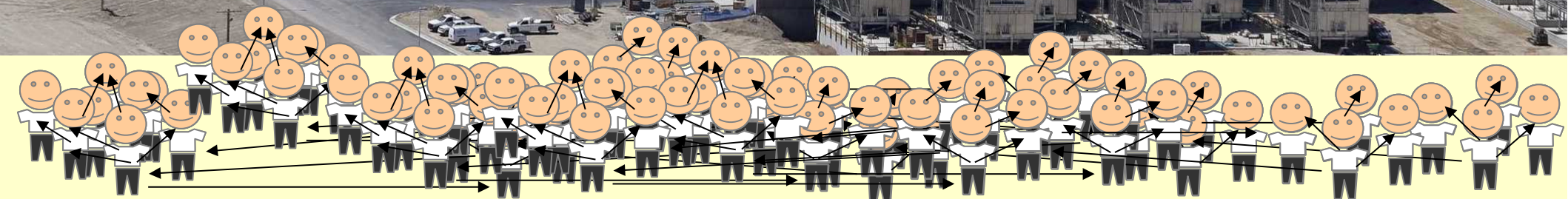
Size
(of “working memory”)
matters!



Data processing center for social/mobile network users data

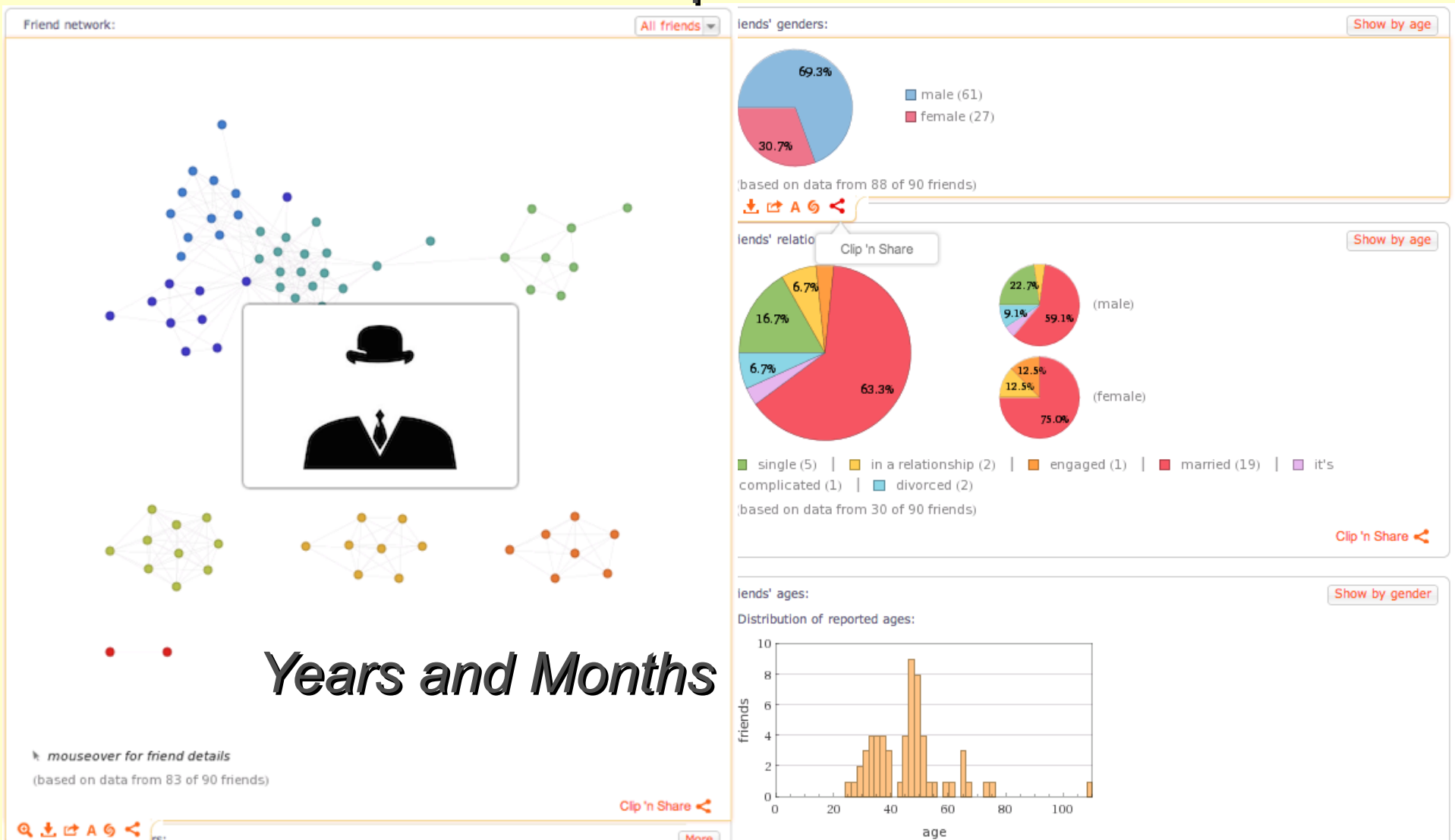


<http://www.businessinsider.com/pictures-of-the-nas-utah-data-center-2013-6>



Social networks can learn about yourself and your social environment

Personal profile analysis with Wolfram Alpha for Facebook

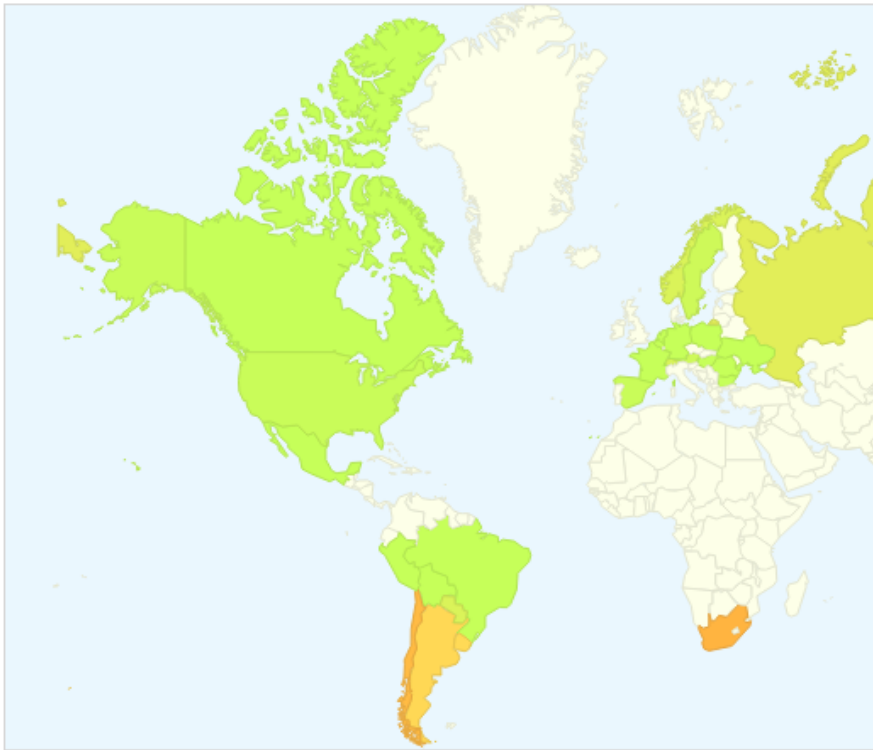


Social networks and search engines can discover and study processes in the world

Epidemic studies with Google Trends

Explore flu trends around the world

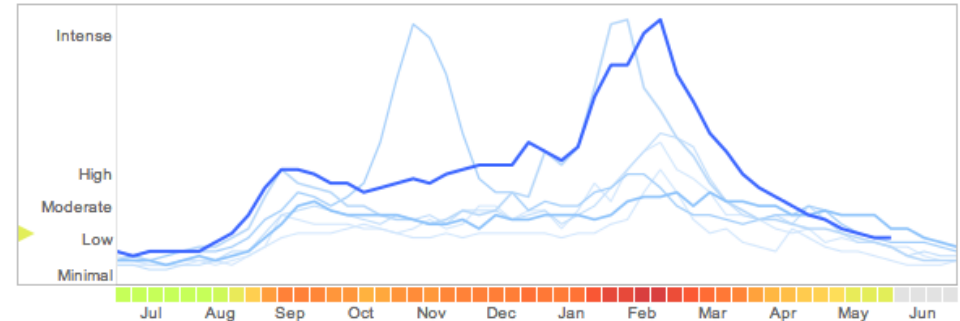
We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. [Learn more »](#)



Explore flu trends - Russia (Experimental)

We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. [Learn more »](#)

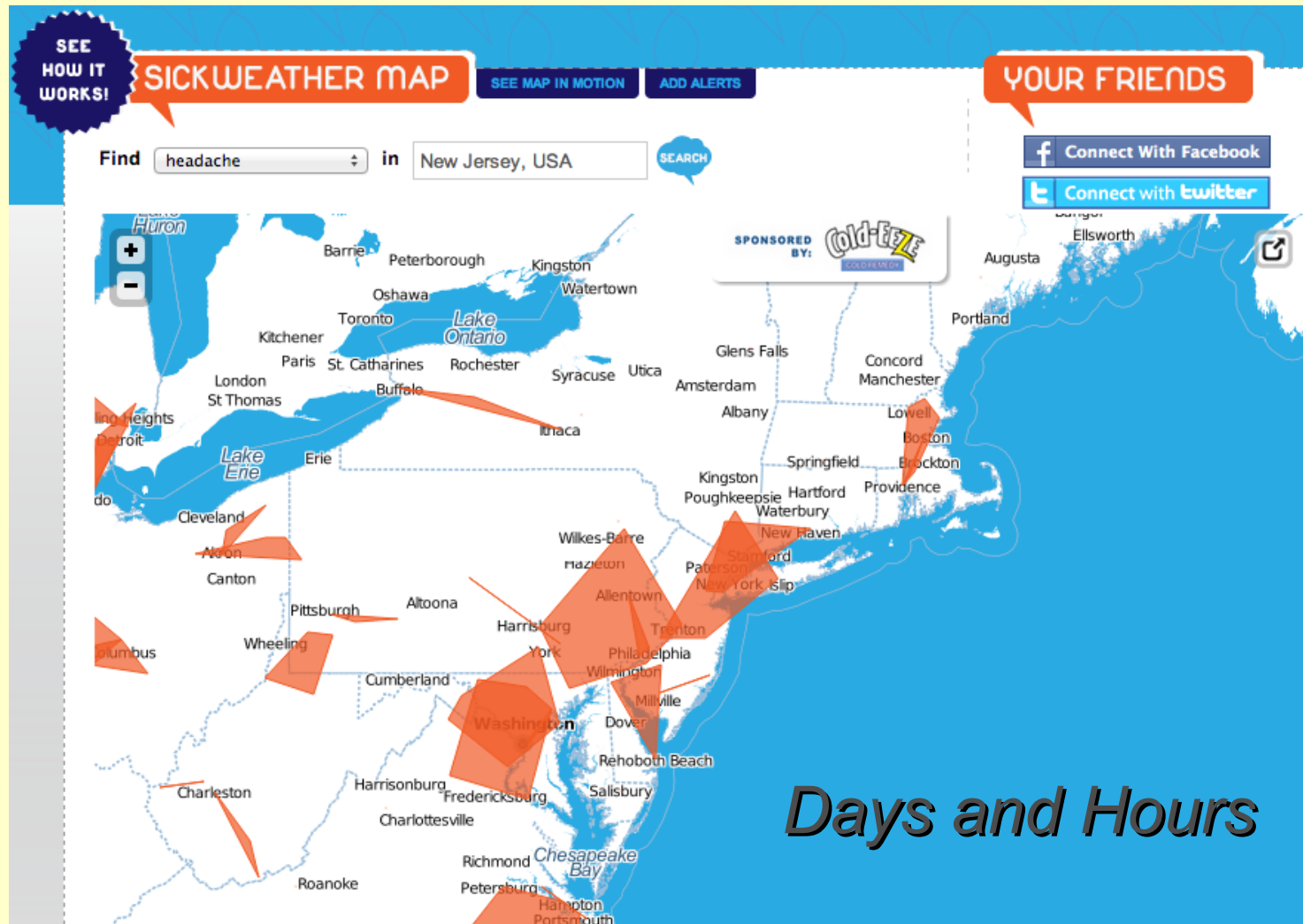
National



Months and Days

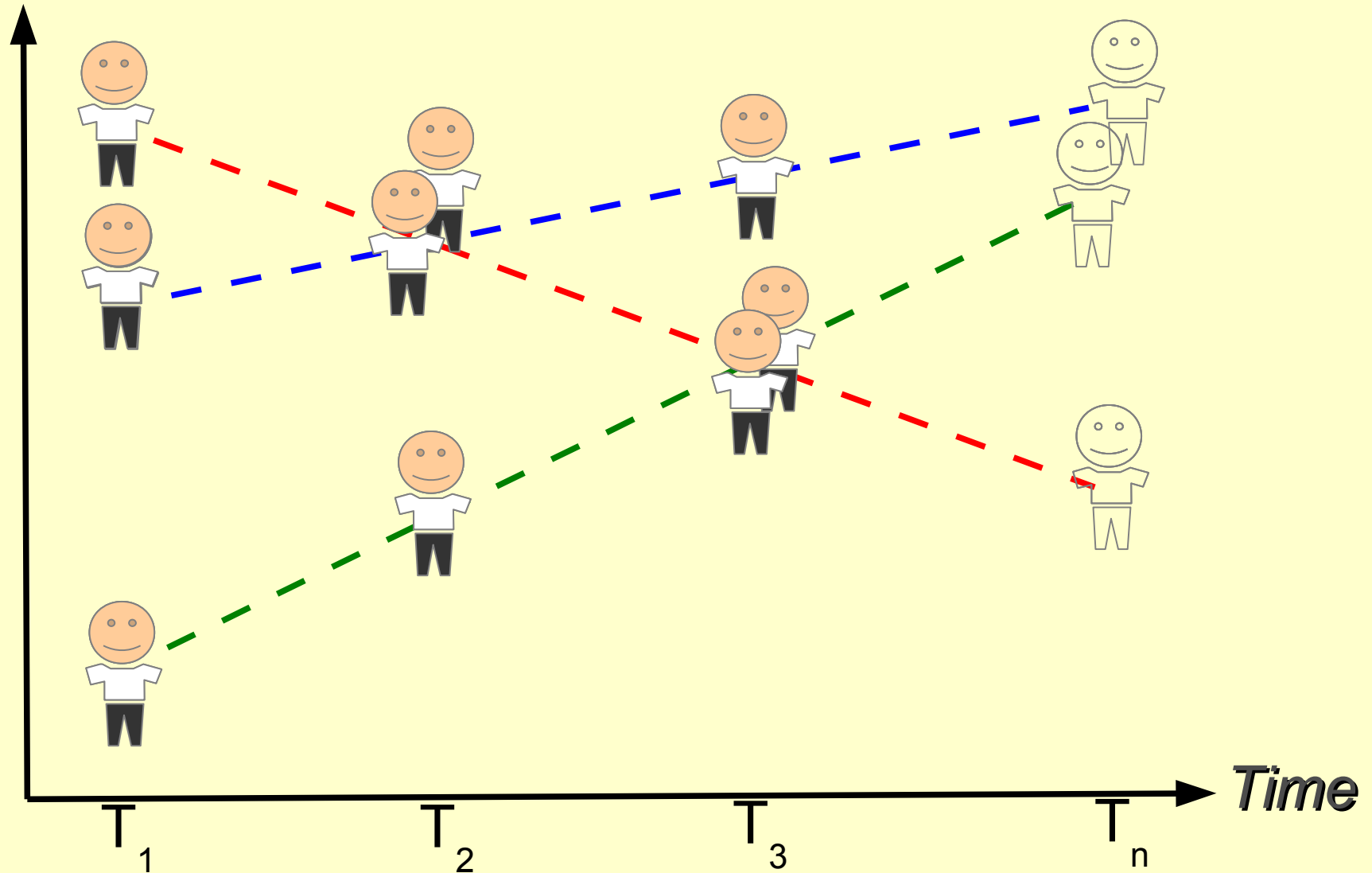
Social network data processing
can discover what is happening in any area right now

“Who is having headache” with Sick Weather

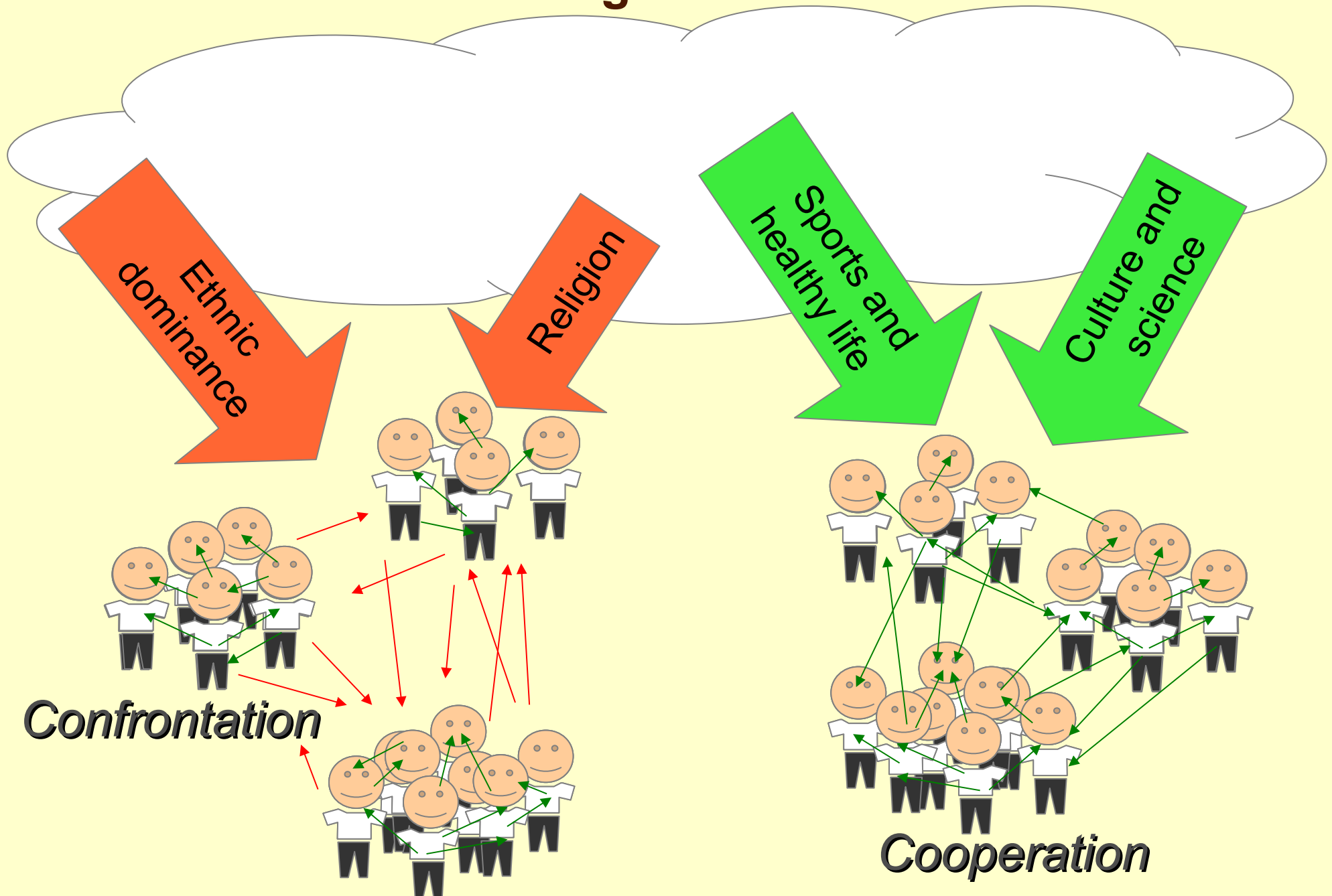


Use of social network data makea possible to **predict** human behavior

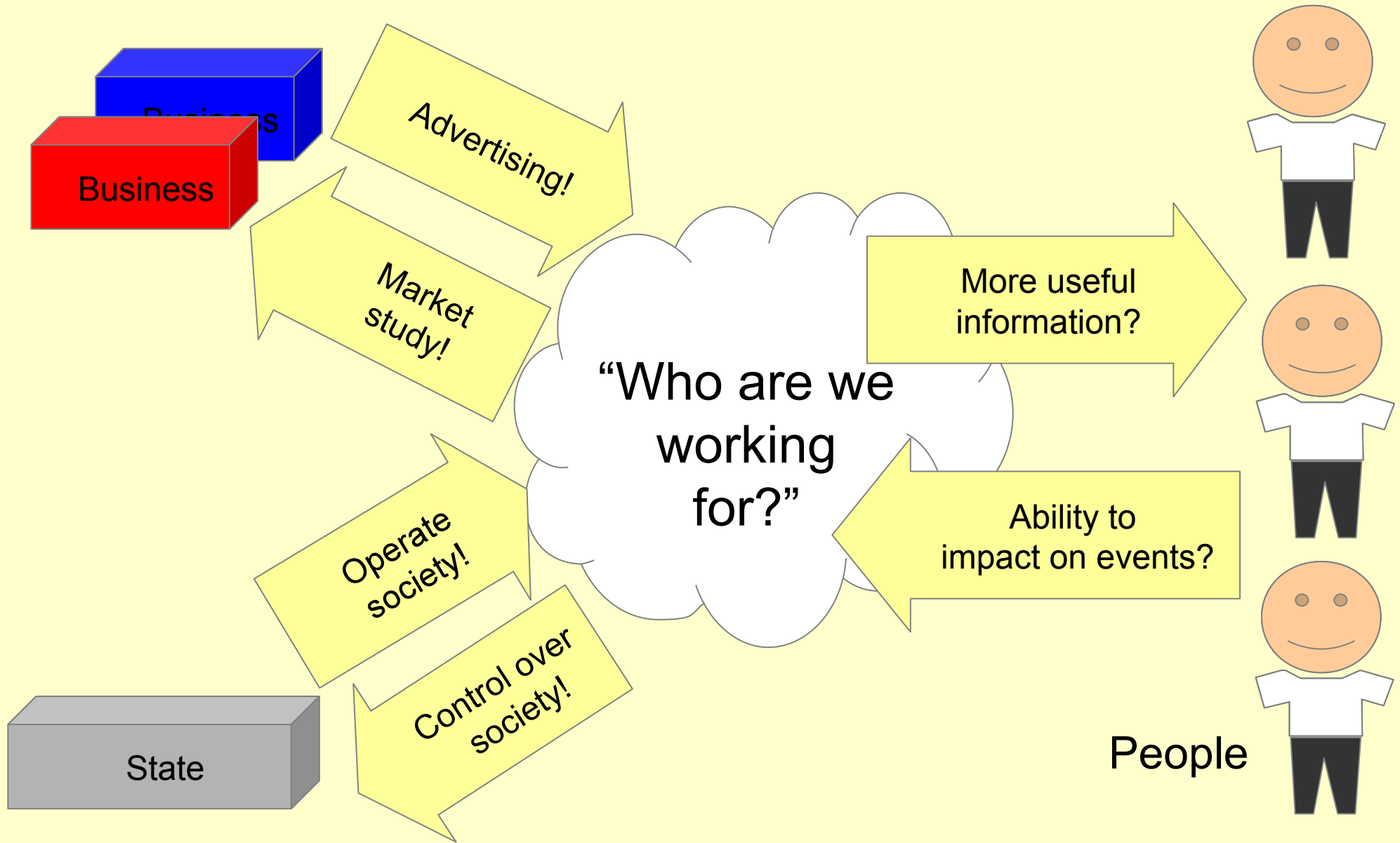
Human behavior



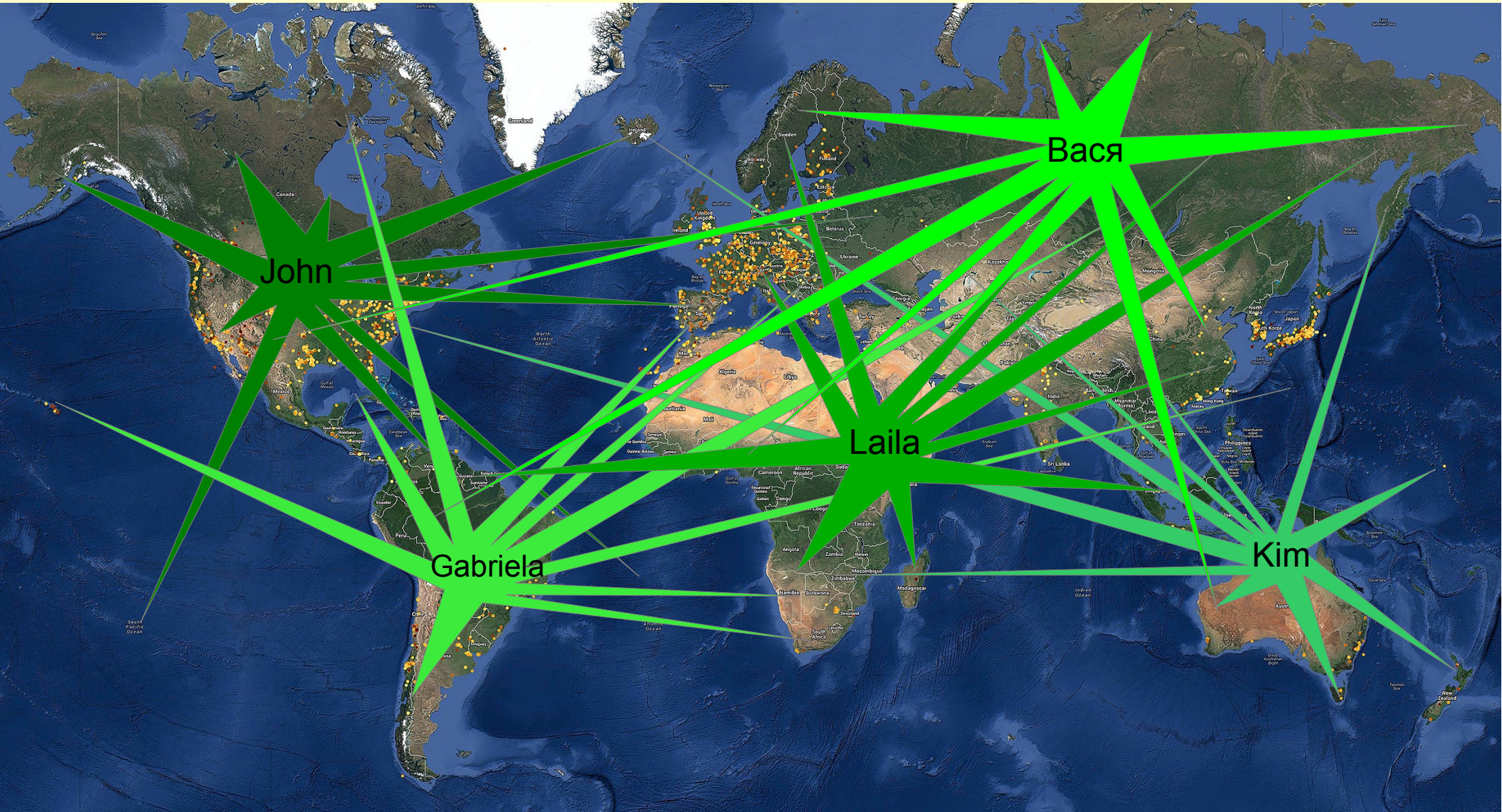
Being able to predict based on social network data one can **manage** human behavior



Who is using social network data and for which purpose

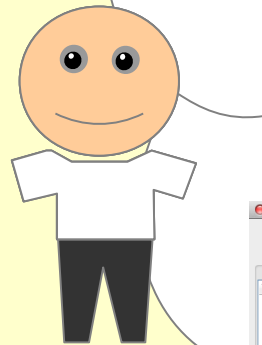
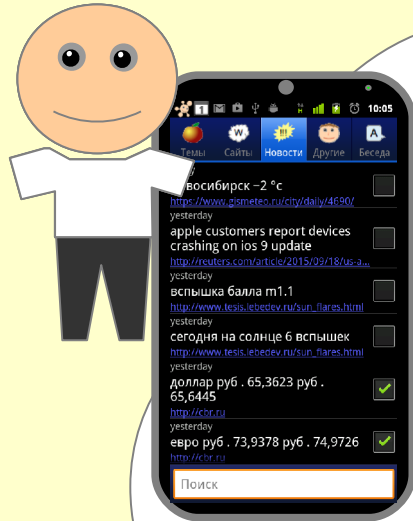


Let everyone have their own social network data analysis tool?



Aigents - personal agents to serve people

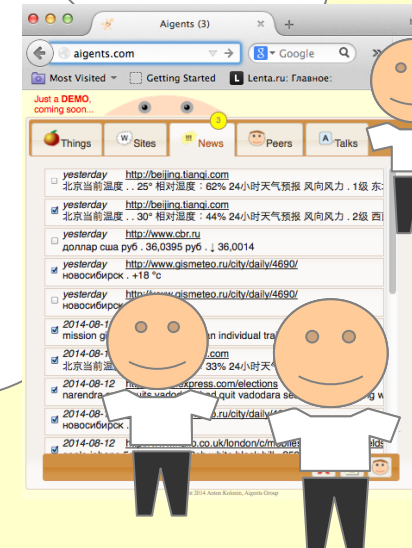
Personal
Aigent for Android



Personal
Aigent for
Mac/OSX
and Windows

Personal
Network
Agent

Networks
of
other
agents



Group
Aigent
for
Web

Profiling social contacts and topics of interest - with Aigents

Best friends

Rank,%	Friend	My likes	Likes	Comments
100	Gquxipik Rikiqonre	6	23	8
38	Qсахpигu Reqeninu	2	28	7
29	Pijtu Reqenin	3	10	8
24	Шысйул Чурьысуш	2	18	4
16	Uivonhj	1	14	15
11	Xonij Exinereg	1	20	1
10	Unujhujiu Zqibniar	3	3	3

Fans

Rank,%	Friend	My likes	Likes	Comments
100	Ukhop Gihug'ogiyt	0	23	0
83	Ytkijhewok Zaenhopmi	0	17	2
63	Uivonhj	1	14	15
52	Янцлют Йуркйыжын	0	12	0
51	Qсахpигu Reqeninu	2	28	7
46	Xonij Exinereg	1	20	1
43	Caqiu Xuniqegu	0	8	2
37	Pirtuiq Nireqjric	1	15	2
35	Eqov Zujreg	0	8	0
35	Eqvu Guqiogu	0	8	0
35	Uqodunxok Hazcnin	0	7	1

Authorities

Rank,%	Friend	My likes	Likes	Comments
100	Шряцыпыл Фецын	2	0	2
75	Xpnhkc Mohanin	1	0	1
75	Ынюккя Гьрысыня	2	1	2
64	Unujhujiu Zqibniar	3	3	3
60	Jhomtun Gquxipik Zavus	2	2	2
60	Kiytukx Niyteqj	2	0	4
50	Gquxipik Bugiuqeg	1	1	1
50	Iqcu Nonujtog	2	0	5
50	Кюлчют Ньюзюцуш	1	0	2
50	Xpnhkc Ejimrin	1	1	1

My interests

Topics
environments
art
рождения
museum
data, google, graph, more, query, search, us

Interests of my friends

Topics	Friends
поздравляем	Jgohqunu Zkuhcajtytonre, Qсахpигu Reqeninu
aigents, could, human, internet, system, used, можно	Huhcunu Xazuheqegu, Unxkof Jtoqq, Gquxijqug Jekerin, Purjip Kuzinegiyt, Erjuno Reguqogu, Pijtu Reqenin, Jhomtun Gquxipik Zavus, Voekv Gokhimkuyteg, Xpnhkc Mohanin, Кюлчют Ньюзюцуш, Uivonhj, Ярюскянцл Кошшуйын, Пыжъяр Кожялюш, Xonij Exinereg, Iqcu Nonujtog, Шысйул Чурьысуш, Сункйяныйн Елгюнсу, Шряцыпыл Фецын, Кiytukx Niyteqj, Ytupuku Woknunxe, Gquxipik Bugiuqeg, Кюлчют Вопксыт, Кисренх хо Quyubo, Xpnhkc Ekqeg, Gquxipik Rikiqonre
днем, рождения	Huhcunu Xazuheqegu, Xpnhkc Ejimrin, Шряцыпыл Фецын
антон, вчера, лавров, почему	Huhcunu Xazuheqegu, Gquxipik Bugiuqeg, Шысйул Чурьысуш, Purjip Kuzinegiyt, Unujhujiu Zqibniar, Сункйяныйн Елгюнсу, Шряцыпыл Фецын
надо, спасибо	Шысйул Чурьысуш, Unujhujiu Zqibniar, Ынюккя Гьрысыня, Uivonhj, Gquxipik Rikiqonre
english	Jhomtun Gquxipik Zavus, Кисренх хо Quyubo
good	Moi Funv, Kiytukx Niyteqj

Similar to me

Rank,%	Friend	Crosses	My likes	Likes	Comments	Words
100	Uivonhj	299	1	14	15	social information now has mo
37	Kiytukx Niyteqj	35	2	0	4	new anton good all thanks interne
16	Iqcu Nonujtog	22	2	0	5	МОЖНО НОВОСТИ ПОИСКА САМИ НОВЫХ
14	Кюлчют Вопксыт	15	1	3	1	learning cognitive human
14	Pijtu Reqenin	14	3	10	8	about us out time down aigent like hor
10	Кюлчют Ньюзюцуш	13	1	0	2	агентов автоматическое например объе

Profiling social communication dynamics – with Aigents

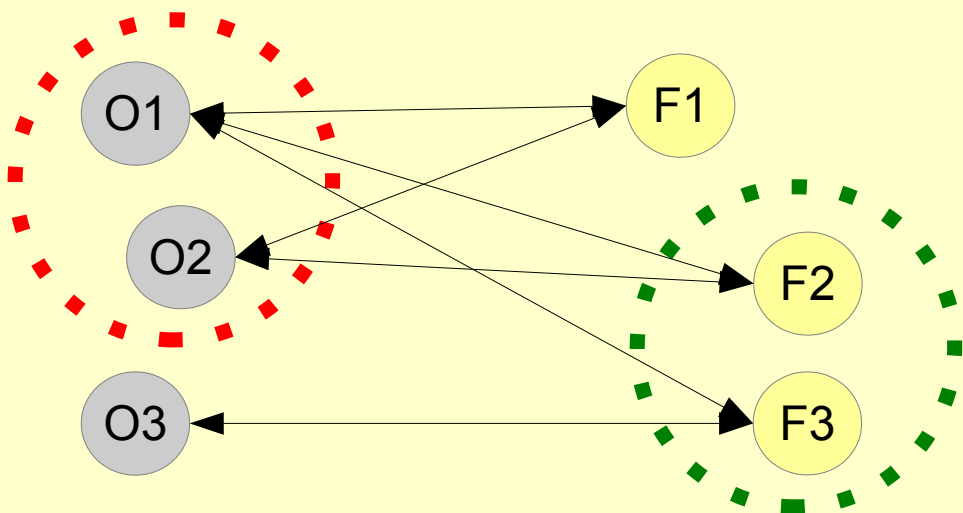
Период	Слова	Ранг, %	Слово	Мои одобрения	Одобрения	Комментарии	Публикации	Упоминаний
2016-08	says data year-old agent two сетях bring people references materials page social year educate агент data-fusion земное aigent learn executive conventional company behavioral compa	100	субъектов	1	18	4	1	7
		97	news	9	37	16	28	38
		88	google	9	46	10	21	26
		86	выявление	1	9	4	1	6
		84	web	8	51	15	23	30
2016-07	ВЫЯВЛЕНИЕ learning good news demo deep предложения service see house bots ранжирования агентов кластеризации организации группа basic формирование gender taken welcome reports flames however get подсказку обсужда версия итак антон now порядке решения удалит анализатора инфопространства работаем polluting пользоваться subject лайкам purposes последователей д	54	now	5	36	15	15	19
		52	business	5	18	9	18	22
		50	way	6	29	12	12	12
		50	агентов	3	32	8	4	7
		48	deep	3	11	1	3	5
2016-06	social networks news google web internet analysis information now patterns business sites de configured better средства day основное make will immediately mobile настоящее traded android выделенных texts comparing understanding strings scientists academiark немедленно follow странич emerging harvesting company like friend дублинге йе закономерностей interests webon closely state quick road full extent automatically site макет доставка apparently социальн	48	facebook	5	25	9	9	10
		48	networks	4	15	4	9	12
		47	social	4	27	20	19	25
		45	information	4	18	9	12	15
		43	категорий	1	9	4	1	3
2016-05	news cognitive knowledge web business patterns personal keep области using geno ofs model android scientists engineering released question академгородок semantic equal entire tracking mission информации децентрализованной адресной prototype city watching social строи	43	объектов	1	18	4	1	3
		41	keep	4	18	10	13	15
		40	demo	3	8	7	5	7
		37	version	3	13	3	7	9
		36	data	3	13	7	8	10
2016-04	test made информации turing now интернете задачах конференции обучающихся tracking inside антона будущем personalized текстовых towards интернет-страницах колонии went бизнес-разведки р	36	области	1	1	7	2	5
		34	agent	2	16	3	5	8
		34	информации	2	28	5	5	8
		34	good	2	18	2	7	11
		32	made	2	20	7	6	9
2016-03	keep business break syrian spring version news fall natural area great need improved tha USE россия more such which equal mix via	32	живых	2	20	7	2	3
		32	предложения	2	11	7	2	3
		30	patterns	2	8	2	5	7
		30	sites	2	7	2	5	7
		29	personal	2	14	7	8	11
2016-02	search right intelligence business monitoring gs artificial от сервисы acquiring носимые интеграцией activity customer-centric enters makes headaches cortana мощностях пок	29	ai	3	10	3	9	9
		29	analysis	3	11	7	7	7
		29	android	3	9	3	9	9
		29	bought	1	6	1	1	2
		29	come	3	12	2	4	4
2016-01	google web facebook now ai human thanks traditional key get make released integration chir up social compare startup powered emotion cube russian month heading build protest shop backing thank автоматического simpler alerts geopolitical buzz stay articles distorted link websites i сомнева version computers words digitized reactora wine zakani cacti same йе журналиста access компьютеров ключевых based dearte user buy user concepts sources old three trans	29	doctor	1	3	0	1	2
		29	gs	1	1	1	1	2
		29	integration	2	10	2	3	4
		29	internet	3	8	7	7	7
		29	language	3	25	5	7	7
2015-12	google made business мартышками bought туго news web погоду пусть and text глаз hours восточная мудрость many существует веселые text-to-speech zanao reporting language years newspaper getting devel	29	machine	1	4	1	1	2
		29	make	3	17	6	6	6
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
2015-11	субъектов news объектов агентов intelligence представлений передачи нейронет parse данных тематические centralized системы формы focus гибридного нейронтеррефы tmi интеллектуальные эвристичности presentations оязыки виде айбиде генерация существа рамка	29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
2015-10	social anton knowledge news russia conference cognitive security boss christmas back electronic up including presenting glitches университеты having down old technology raises good newest aware architect	29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
2015-09	agent way anton news october информация agents intelligent стра spy portland engine akolonin распределенных последние автоматическое behaving корпоративной indicates ways работ собирается chat уровне jailbreak akademgorodok шаблонно internet hope room mobile nsa информации packed инсталляции ленту scientists рек июнь reuters woods human ровно novosivirsk мобильному quite левевра социальной которая than стороны руки more such такое этого левон mix п	29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
2015-08	sea museum literally paper next writing crete aegean open over help ancient dur chat уровне jailbreak akademgorodok шаблонно internet hope room mobile nsa информации packed инсталляции ленту scientists рек июнь reuters woods human ровно novosivirsk мобильному quite левевра социальной которая than стороны руки more such такое этого левон mix п	29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5
		29	reuters	3	6	0	5	5

Let everyone have their "Personal Global Brain"?

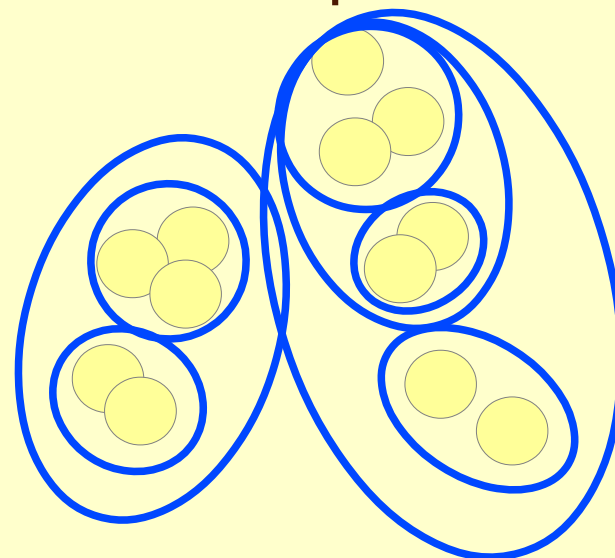
Ранг,%	Мои одобрения	Одобрения	Комментарии	Дата	Текст	Ссылки
100	0	25	9	2015-10-26	We just have had a birthday!	https://www.facebook.com/aigents/photos/a.285813534936330.1073741828.27106764641?type=3
91	0	25	6	2016-02-21	Holiday with Aigents ;-)	https://www.facebook.com/photo.php?fbid=10204093466456166&set=a.10200624186966347.1073741827.1810115482&type=3
79	0	24	3	2015-09-11	Siberian Hawaii, September 2015 (Novosibirsk, Akademgorodok, Ob sea)	https://www.facebook.com/photo.php?fbid=10203402418380396&set=a.10200624186966347.1073741827.1810115482&type=3
76	0	25	1	2015-12-31	В Сибири с мартышками туго, Но прыгают рядом всегда Смешливые шустрые белки, Даря нам немного тепла. Веселые беличьи игры, Колесико жизни вертя, Пусть дарят надежду и радость. Пусть все удастся шутя! В Сибири с мартышками туго, ...	https://www.facebook.com/photo.php?fbid=10203843251600951&set=a.10200624186966347.1073741827.1810115482&type=3
68	1	12	11	2016-01-05	Sunset, kite, shovel and kicker birth at the homeland of Aigents	https://www.facebook.com/photo.php?fbid=10203871262861215&set=a.10200624186966347.1073741827.1810115482&type=3
65	1	18	4	2015-11-15	Нейронет - стек технологий создания новой формы существования разумной материи ("ноосферы") в виде над-коллективного субъекта - гипер-сети коллективных субъектов. Объединяет агентов: 1.Людей 2.Устройства "интернета вещей" 3.Интеллектуальных агентов физических и виртуальных (hardware and software), о...	https://www.facebook.com/photo.php?fbid=10203650198214737&set=a.10200624186966347.1073741827.1810115482&type=3
59	0	11	9	2016-01-09	Пример анализа личности от IBM Watson Когнитивная система IBM Watson на днях изучила личность журналиста издания NPR Аарти Шахани (по его личной просьбе). Для...	http://geektimes.ru/company/ibm/blog/268888
59	0	17	3	2015-08-15	Writing scientific paper for the next conference...	https://www.facebook.com/photo.php?fbid=10203276173424351&set=a.10200624186966347.1073741827.1810115482&type=3
38	1	9	4	2016-07-26	Итак, вышла "бета"-версия персонального анализатора Aigents для соцсетей Facebook, ВКонтакте и Google+! Из нового: - Выявление категорий в собственных постах - Выявление категорий в кругах друзей и коллег - Выявление "лучших друзей" (по взаимным лайкам и комментариям) - Выявление "последователей" (...)	https://aigents.com
32	0	6	5	2016-07-17	Все верно, и прототипом такой системы уже можно пользоваться: https://aigents.com/	http://m.forbes.ru/tekhnologii/idei-i-izobreteniya/324889-david-yan-kazhdyi-iz-nas-prevrashchayemye-v-informatsionnyy https://aigents.com
32	0	10	1	2015-12-30	Всех друзей и коллег - с Новым Годом!!! http://aigents.com/	https://www.facebook.com/aigents/photos/a.285813534936330.1073741828.27106764641?type=3 http://aigents.com
26	1	9	0	2016-06-24	Windsurfing and Kitesurfing Festival in the middle of "Silicon Taiga" in Akademgorodok, Novosibirsk, Russia (at the stairs of Akadempark) +Dmitriy Verkhovod	https://www.facebook.com/10203057937968601/videos/10204852177343464

Clustering or “natural classification” problems

Clustering objects or features

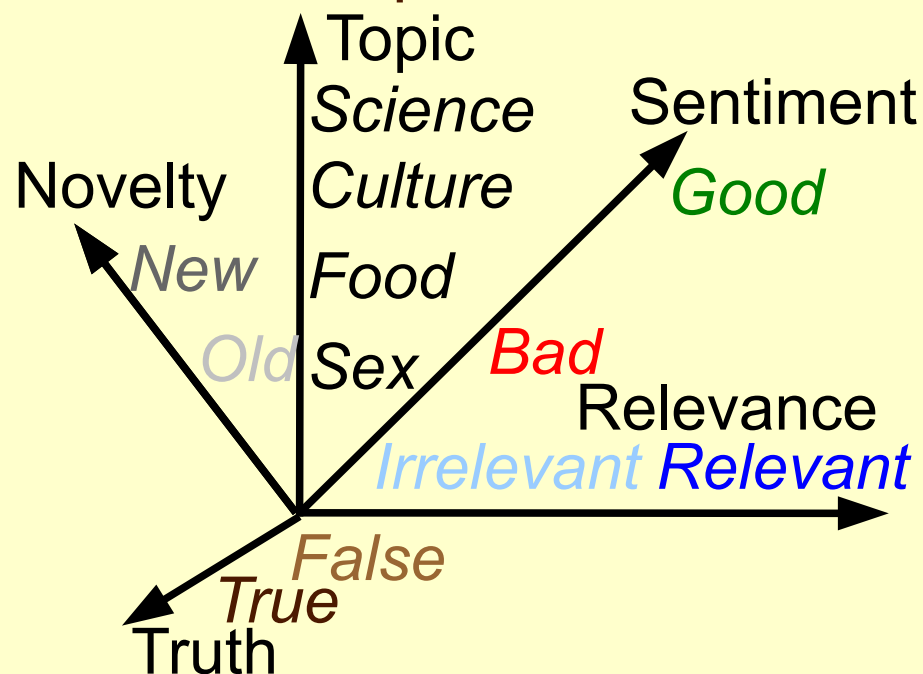
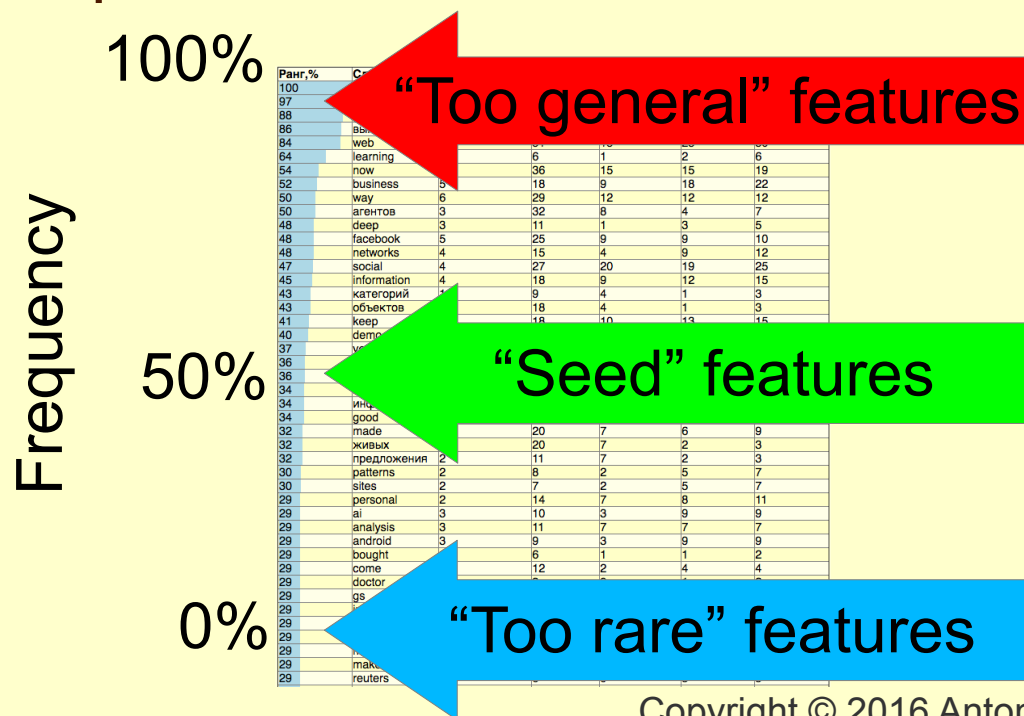


X-means problem

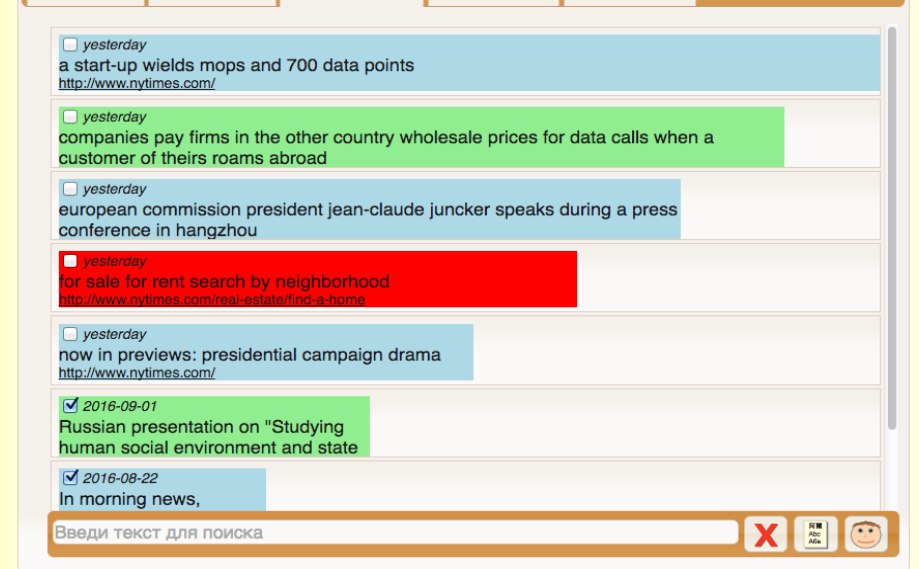
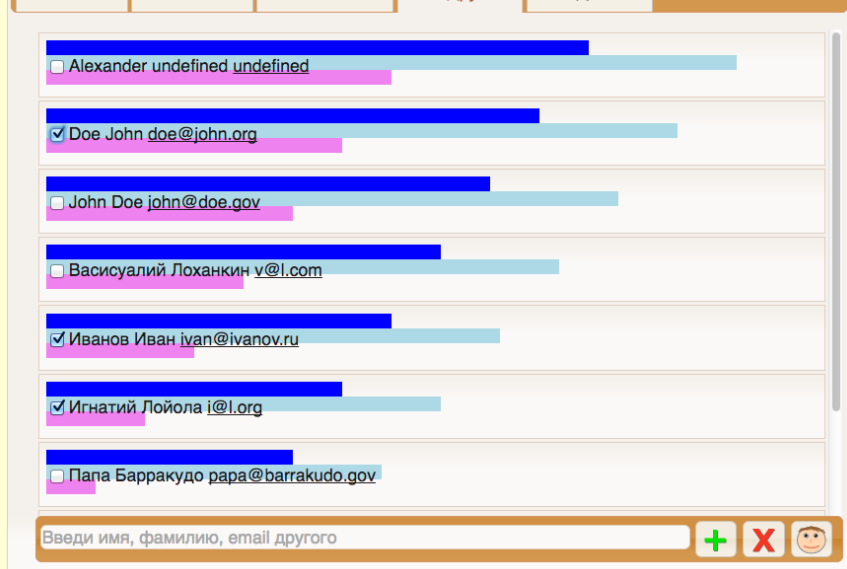
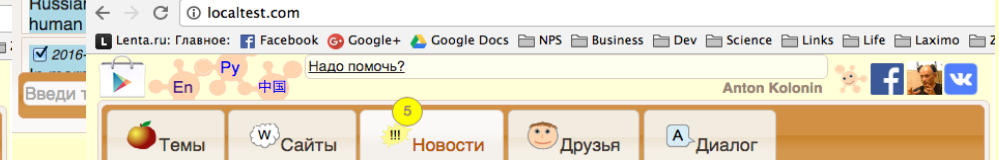
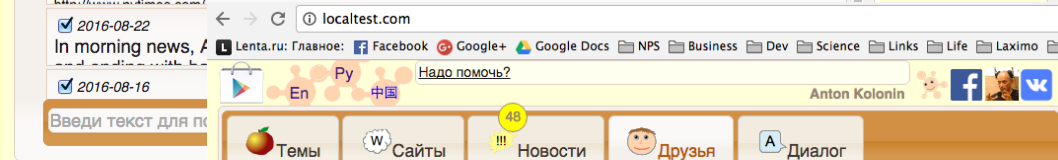
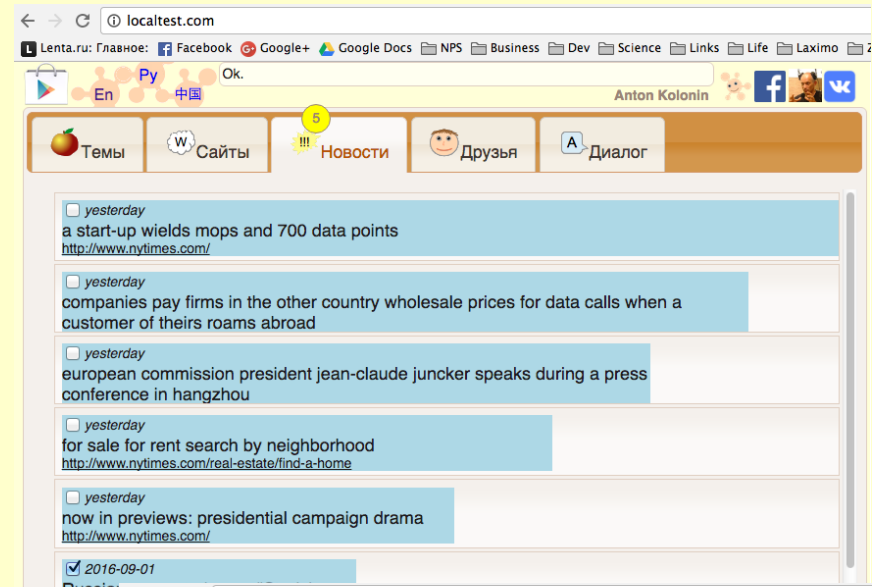
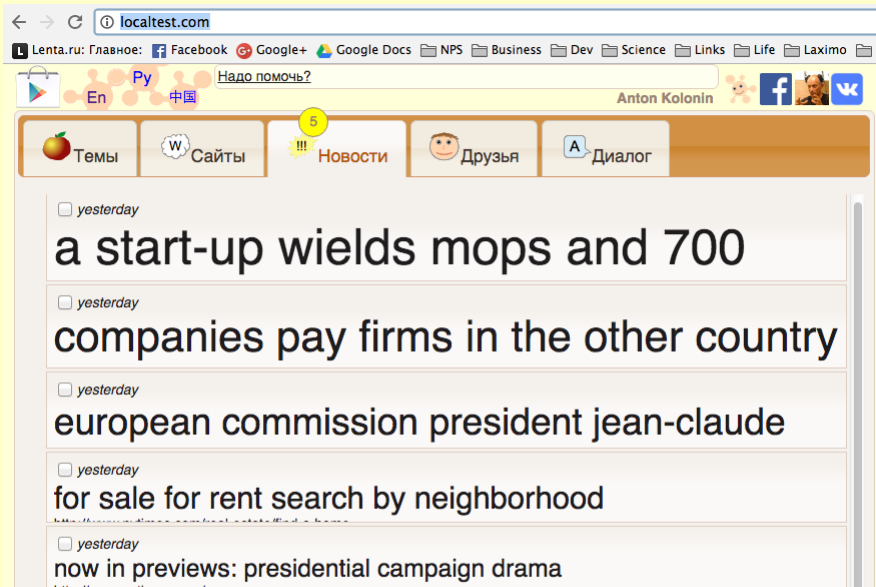


Unpredictable feature distributions

Multiple dimensions



We are working towards “alive net” of Aigents, so anyone could watch “social network state” around



Register for personal social state report with Aigents

Ok. Hello Anton Kolonin! My Aigents 1.1.37 Copyright © 2016 Anton Kolonin, Aigents Group.

Anton Kolonin

Google+ Report Logout

Things Sites News Peers Talks

today
able to draw on months of play with itself—on a corpus of moves that no human has even seen—it also has the ability to climb out of such a deep hole
<http://www.wired.com/2016/03/googles-ai-wins-fifth-final-game-go-genius-lee-sedol>

today
after a significant error by alphago—an error that looked amateurish to the human eye
<http://www.wired.com/2016/03/googles-ai-wins-fifth-final-game-go-genius-lee-sedol>

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after training on real human moves
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burdeny visited russia in 2014 and again in 2015
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but human willpower is awesome,” she says
<http://www.wired.com/2016/01/the-nfls-impending-data-revolution>

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but while machines have gotten really good at recognizing voice commands and translating one human language into another
<http://www.wired.com/2016/06/facebooks-head-ai-wants-teach-chatbots-common-sense>

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deep learning algorithms rely on deep neural networks—networks of hardware and software that mimic the web of neurons in the human brain

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