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Being Human in the Age of Algorithms:

part 4

Учебное пособие

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PREFACE

Настоящее учебное пособие включает актуальные тексты (2017-2018гг.) учебно-познавательной тематики для студентов механико-математического факультета (направления 02.03.01 «Математика и компьютерные науки», 01.03.02 «Прикладная математика и информатика», 38.03.05 «Бизнес-информатика»).

Целью данного пособия является формирование навыка чтения и перевода научно-популярных текстов, а также развитие устной речи студентов (умение выразиг свою точку зрения, дать оценку обсуждаемой проблеме).

Пособие состоит из 5 разделов, рассматривающих значение информационных технологий в современном мире. Каждый из них содержит аутентичные материалы (источники: *BBC Future, The Guardian, The Independent, The Atlantic, Nautilus*) и упражнения к ним. Раздел "Supplementary reading" служит материалом для расширения словарного запаса и дальнейшего закрепления навыков работы с текстами по специальности.

Пособие может успешно использоваться как для аудиторных занятий, так и для внеаудиторной практики.

1. Is social media bad for you? The evidence and the unknowns.

Part 1

<u>**Exercise I.**</u>

Say what Russian words help to guess the meaning of the following words: mental, reports, mental, stress, politics, mechanism, distant, internet, emotional

<u>**Exercise II.**</u>

Make sure you know the following words and word combinations:

Flaw, to vent, worthless, threefold, culprit, slumber, wellbeing, perceived, benign, groggy

Is social media bad for you? The evidence and the unknowns.

What the science suggests so far about the impact of platforms such as Facebook, Twitter or Instagram on your mental well-being(1)

Three billion people, around 40% of the world's population, use online social media – and we're spending an average of two hours every day sharing, liking, tweeting and updating on these platforms, according to some reports. That breaks down to around half a million tweets and photos shared every minute. With social media playing such a big part in our lives, could we be sacrificing our mental health and well-being as well as our time? What does the evidence actually suggest? Since social media is relatively new to us, conclusive findings are limited. The research that does exist mainly relies on self-reporting, which can often be flawed, and the majority of studies focus on Facebook. That said, this

is a fast-growing area of research, and clues are beginning to emerge. BBC Future reviewed the findings of some of the science so far: STRESS. People use social media to vent about everything from customer service to politics, but the downside to this is that our feeds often resemble an endless stream of stress. Researchers sought to find out if social media induces more stress than it relieves. In the survey of 1,800 people, women reported being more stressed than men. Twitter was found to be a "significant contributor" because it increased their awareness of other people's stress. But Twitter also acted as a coping mechanism – and the more women used it, the less stressed they were. The same effect wasn't found for men, whom the researchers said had a more distant relationship with social media. Overall, the researchers concluded that social media use was linked to "modestly lower levels" of stress. MOOD. Researchers in Austria found that participants reported lower moods after using Facebook for 20 minutes compared to those who just browsed the internet. The study suggested that people felt that way because they saw it as a waste of time. A good or bad mood may also spread between people on social media, according to researchers from the University of California, who assessed the emotional content of over a billion status updates from more than 100 million Facebook users. Bad weather increased the number of negative posts by 1%, and the researchers found that one negative post by someone in a rainy city influenced another 1.3 negative posts by friends living in dry cities. The better news is that happy posts had a stronger influence; each one inspired 1.75 more happy posts. Whether a happy

post translates to a genuine boost in mood, however, remains unclear. (2)

ANXIETY. Researchers have looked at general anxiety provoked by social media, characterised by feelings of restlessness and worry, and trouble sleeping and concentrating. A study published in the journal Computers and Human Behaviour found that people who report using seven or more social media platforms were more likely to have high levels of general anxiety symptoms. That said, it's unclear if and how social media causes anxiety. The results are mixed and more research needs to be done. DEPRESSION. While some studies have found a link between depression and social media use, there is emerging research into how social media can actually be a force for good. Two studies involving more than 700 students found that depressive symptoms, such as low mood and feelings of worthlessness and hopelessness, were linked to the quality of online interactions. A similar study involving 1,700 people found a threefold risk of depression and anxiety among people who used the most social media platforms. Reasons for this, they suggested, include cyber-bullying, having a distorted view of other people's lives, and feeling like time spent on social media is a waste. However, scientists are also looking at how social media can be used to diagnose depression, which could help people receive treatment earlier. Researchers for Microsoft surveyed 476 people and analysed their Twitter profiles for depressive language, linguistic style, engagement and emotion. From this, they developed a classifier that can accurately predict depression before it causes symptoms in seven out of 10 cases. (3)

SLEEP. Humans used to spend their evenings in darkness, but now we're surrounded by artificial lighting all day and night. Research has found that this can inhibit the body's production of the hormone, which facilities sleep – and blue light, which is emitted by smartphone and laptop screens, is said to be the worst culprit. In other words, if you lie on the pillow at night checking Facebook and Twitter, you're headed for restless slumber. Last year, researchers from the University of Pittsburgh asked 1,700 18- to 30-year-olds about their social media and sleeping habits. They found a link with sleep disturbances – and concluded blue light had a part to play. How often they logged on, rather than time spent on social media sites, was a higher predictor of disturbed sleep, suggesting "an obsessive 'checking'", the researchers said. The researchers couldn't clarify whether social media causes disturbed sleep, or if those who have disturbed sleep spend more time on social media. ADDICTION. Despite the argument from a few researchers that tweeting may be harder to resist than cigarettes and alcohol, social media addiction isn't included in the latest diagnostic manual for mental health disorders. That said, social media is changing faster than scientists can keep up with, so various groups are trying to study compulsive behaviours related to its use. Daria Kuss and Mark Griffiths from Nottingham Trent University in the UK have analysed 43 previous studies on the matter, and conclude that social media addiction is a mental health problem that "may" require professional treatment. They found that excessive usage was linked to relationship problems, worse academic achievement and less participation in offline communities, and found that those who could be more vulnerable to a social media

addiction include those dependent on alcohol, the highly extroverted, and those who use social media to compensate for fewer ties in real life. (4)

SELF-ESTEEM. Women's magazines and their use of underweight and Photoshopped models have been long maligned for stirring self-esteem issues among young women. But now, social media, with its filters and lighting and clever angles, is taking over as a primary concern among some campaigning groups and charities. Social media sites make more than half of users feel inadequate, according to a survey of 1,500 people, and half of 18- to 34-year-olds say it makes them feel unattractive. The study by researchers at Penn State University suggested that viewing other people's selfies lowered self-esteem, because users compare themselves to photos of people looking their happiest. Research from Ohio University also found that women compare themselves negatively to selfies of other women. But it's not just selfies that have the potential to dent self-esteem. A study of 1,000 Facebook users found that women who spent more time on Facebook reported feeling less happy and confident. The researchers concluded: "When Facebook users compare their own lives with others' seemingly more successful careers and happy relationships, they may feel that their own lives are less successful in comparison." But one study hinted that viewing your own profile, not others, might offer ego boosts. Researchers at Cornell University in New York put 63 students into different groups. Some sat with a mirror placed against a computer screen, for instance, while others sat in front of their own Facebook profile. Mirrors and photos, the researchers explained, make us compare ourselves to social standards, whereas looking at our own Facebook

profiles might boost self-esteem because it is easier to control how we're presented to the world. WELL-BEING. In one study researchers texted 79 participants five times a day for 14 days, asking them how they felt and how much they'd used Facebook since the last text. The more time people spent on the site, the worse they felt later on. But other research has found, that for some people, social media can help boost their well-being. Marketing researchers Jonah Berger and Eva Buechel found that people who are emotionally unstable are more likely to post about their emotions, which can help them receive support and bounce back after negative experiences. Overall, social media's effects on well-being are ambiguous. (5)

RELATIONSHIPS. If you've ever been talking to a friend who's pulled their phone out to scroll through Instagram, you might have wondered what social media is doing to relationships. Even the mere presence of a phone can interfere with our interactions, particularly when we're talking about something meaningful. Researchers writing in the Journal of Social and Personal Relationships tasked 34 pairs of strangers with having a 10-minute conversation about an interesting event that had happened to them recently. Each pair sat in private booths, and half had a mobile phone on the top of their table. Those with a phone in eyeshot were less positive when recalling their interaction afterwards, had less meaningful conversations and reported feeling less close to their partner than the others, who had a notebook on top of the table instead. Romantic relationships aren't immune, either. Researchers surveyed 300 people aged 17-24 about any jealousy they felt when on Facebook, asking questions such as, 'How likely are you to become jealous after your partner has added an unknown member of the opposite

sex?'. Women spent much more time on Facebook then men, and experienced significantly more jealousy when doing so. The researchers concluded they "felt the Facebook environment created these feelings and enhanced concerns about the quality of their relationship". ENVY. In a study involving 600 adults, roughly a third said social media made them feel negative emotions – mainly frustration – and envy was the main cause. This was triggered by comparing their lives to others', and the biggest culprit was other people's travel photos. Feeling envious caused an "envy spiral", where people react to envy by adding to their profiles more of the same sort of content that made them jealous in the first place. However, envy isn't necessarily a destructive emotion – it can often make us work harder, according to researchers from Michigan University. They asked 380 students to look at "envy-eliciting" photos and texts from Facebook and Twitter, including posts about buying expensive goods, travelling and getting engaged. But the type of envy the researchers found is "benign envy", which they say is more likely to make a person work harder. LONELINESS. The study surveyed 7,000 19- to 32-year-olds and found that those who spend the most time on social media were twice as likely to report experiencing social isolation, which can include a lack of a sense of social belonging, engagement with others and fulfilling relationships. Spending more time on social media, the researchers said, could displace face-to-face interaction, and can also make people feel excluded. "Exposure to such highly idealised representations of peers' lives may elicit feelings of envy and the distorted belief that others lead happier and more successful lives, which may increase perceived social isolation." (6)

It's clear that in many areas, not enough is known yet to draw many strong conclusions. However, the evidence does point one way: social media affects people differently, depending on pre-existing conditions and personality traits. As with food, gambling and many other temptations of the modern age, excessive use for some individuals is probably inadvisable. But at the same time, it would be wrong to say social media is a universally bad thing, because clearly it brings myriad benefits to our lives. Today's teens and tweens have built up an impressive amount of daily screen time. Figures put it at between six to eight hours a day for 11-15 year-olds, and that's not including time spent on a computer for homework. In fact, even the average UK adult spends more time looking at a screen than they do sleeping, according to one analysis. It starts early. A third of UK children have access to a tablet before they are four. It's no surprise, then, that today's youngest generations will be exposed to (and no-doubt join) the social networks their elders already use. Over three billion of us are now registered on a social network, many of us on more than one. We spend a lot of time there - US adults spend an average of 2-3 hours a day. This trend is now exposing some worrying results and, staying hot on the heels of social-media's popularity, researchers are interested in the impact it is having on many aspects of our health, including sleep, the importance of which is currently gaining unprecedented attention. So far it does not look good. We're now coming to terms with the fact that social media has some clearly negative impacts on our sleep and with that, our mental health. In an objective way, you might say: this person is interacting with friends, passing on smiles, you might say that person has a lot of

social capital, that they are very engaged. But researchers found those people seem to have more feelings of perceived social isolation. When it comes to social media interaction, time of day plays a fundamental role. Engagement during the last 30 minutes before bed was found to be the strongest indicator of a poor night's sleep. It was completely independent of the total amount of time of use in the day. Something about keeping those last 30 minutes tech-free, it seems, is crucial to a restful slumber. More screen time is also likely to reduce time spent for physical activity, a link that has been established by research. It induces more sedentary behaviour during the day. We may have a new generation who are not moving as much each day. To combat any downsides of social media use, it's clear that moderation is key. We should all ring-fence particular times throughout the day in which we can distance ourselves from our screens, and do the same for children. Parents need to have set places in their homes where devices can or cannot be used "so it's not a fluid situation where social media is bleeding into every part of your life without any buffer zones. This is especially important as children have not yet developed adequate levels of impulse control to know when is enough. The bottom line is, when there is all of this power trying to keep us glued to these sites, that's going be hard for us to compete with. As for adults, if you were on your phone before bed last night, and you feel a bit groggy today, it may be in your control to fix it. You may well sleep better if you put your phone away. (7)

Adapted from BBC Future.

Exercise III.

Find paragraphs, dealing with the following: rainy, mood, provoked, journal, force, symptoms, cyber-bullying, diagnose,   hormone, pillow

Exercise IV.

Fill in the gaps.

1. She was a regular …........................... to charities including Greenpeace and Save Africa.

2. It evocatively describes the fatigue of age conquering the …......................... of youth.

3. The party believes government can and should be a …................................

4. Thieves don't like cheap luggage because they assume the contents are …......................................

5. They served the........................... purpose of sanctuaries, reservoirs and assembly-rooms.

6. The USA promises to …........................ Russia's entry into the World Trade Organization.

7. The biggest …........................ was the chip operation, known as the microelectronics group.

8. Do not be afraid to adjust the policy as needed if it is …......................... or outdated.

9. Was the …............................ ending disrespectful to loyal fans, or artistically brilliant?

10. Those who are …......................... as different or as a threat are regarded with hostility.

Make up sentences of your own with the following word combinations:

anxiety and restlessness, to force for good, on the heels , be in one's control, in an objective way , pulled ones phone out, to scroll through, in eyeshot, feel negative emotions, to experience social isolation

Exercise VI.

Match the words to the definitions in the column on the right:

evidence	having or expressing more than one possible meaning, sometimes intentionally
fluid	to make something possible or easier
contributor	to slow down a process or the growth of something
modestly	to get or produce something, especially information or a reaction
to inhibit	irresistibly interesting or exciting; compelling
to facilitate	too low in quality or too small in amount; not enough
compulsive	one or more reasons for believing that something is or is not true
inadequate	a substance that flows and is not solid
ambiguous	a person or company that gives money or support to help another person , company, or organization achieve its goal
to elicit	in a size or amount that is not large or with a value that is not great

Exercise VII.

Summarize the article "Is social media bad for you? The evidence and the unknowns."

Part 2

Exercise I.

Identify the part of speech the words belong to.
restless, predictor, obsessive, clarify, argument, researchers, addiction, diagnostic, disorders.

Exercise II .

Form nouns from the following words:

conclusive (1), emerge (1), social (1), significant (1), acted (1), distant (1), concluded (1), emotional (1), influenced(1), translate (2)

Exercise III.

Find synonyms to the following words. Translate them into Russian:
presence (6), meaningful (6), stranger (6), conversation (6), envious (6), trait (7), modern (7), impressive (7), impact (7), interacting (7)

Exercise IV.

Find antonyms to the following words. Translate them into Russian:
bottom (7), before (7), adult (7), new (7), to reduce (7), independent (7), completely (7), total (7), fundamental (7), isolation (7)

Exercise V.

Match the words to make word combinations:

genuine	cities
high	mood
customer	level

dry	health
negative	media
emotional	influence
social	boost
mental	service
good	content
strong	post

2. Machine mind

Part 1

Exercise I.

Say what Russian words help to guess the meaning of the following words: machine, percent physical, reasons, magical, extraordinary, gigantic, microscopic, sensory, coffee

Exercise II.

Make sure you know the following words and word combinations:

quaint, gigantic, remarkable, to discern, to intertwine, well-nigh, gauge, to peruse, oversight, to exert

Machine mind

We think we know more than we do—including how machines will behave (1)

In the Middle Ages people believed that the earth was flat, for which they had at least the evidence of their senses: We believe it to be round, not because as many as one percent of us could give the physical reasons for so quaint a belief, but because modern science has convinced us that everything that is magical, improbable, extraordinary, gigantic, microscopic is scientific. It is remarkable how much we depend on what we're told to get by in the modern world. So little of what happens to us is understood through direct sensory experience. From the alarm that wakes us up, to the smartphone that we turn on, to the coffee machine that welcomes us into the kitchen nothing is completely within our

conceptual grasp. But we use these tools; we even rely on them, because they work (except when they don't and our life goes a little out of balance). We can thank the experts who created them, for we are dependent on their know-how. We have faith in the masters of modern technology after years of successfully using their devices. But when those devices fail, when the cable service goes out, we're rudely reminded of just how little we know about the conveniences of modern life. A "knowledge illusion" occurs because we live in a community of knowledge and we fail to distinguish the knowledge that is in our heads from the knowledge outside of it. We think the knowledge we have about how things work sits inside our skulls when in fact we're drawing a lot of it from the environment and from other people. This is as much a feature of cognition as it is a bug. The world and our community house most of our knowledge base. A lot of human understanding consists simply of awareness that the knowledge is out there. Sophisticated understanding usually consists of knowing where to find it. Only the truly erudite actually have the knowledge available in their own memories. (2)

The knowledge illusion is the flip side of what economists call the curse of knowledge. When we know about something, we find it hard to imagine that someone else doesn't know it. It seems so obvious. If we know the answer to a general knowledge question, we have a tendency to expect others to know the answer, too. The curse of knowledge sometimes comes in the form of a hindsight bias. If our team just won a big game or our candidate just won an election, then we feel like we knew it all along and others should have expected that outcome too. The curse of knowledge is that we tend to think what is in our heads

is in the heads of others. In the knowledge illusion, we tend to think what is in others' heads is in our heads. In both cases, we fail to discern who knows what. Because we live inside a hive mind, relying heavily on others and the environment to store our knowledge, most of what is in our heads is quite superficial. We can get away with that superficiality most of the time because other people don't expect us to know more; after all, their knowledge is superficial too. We get by because a division of cognitive labor exists that divides responsibility for different aspects of knowledge across a community. The division of cognitive labor is fundamental to the way cognition evolved and the way it works today. The ability to share knowledge across a community is what has allowed us go to the moon, to build cars and freeways, to make milkshakes and movies, to veg out in front of the TV, to do everything that we can do by virtue of living in society. The division of cognitive labor makes the difference between the comfort and safety of living in society and of being alone in the wild. (3)

One cost of living in a community of knowledge is that we miss out on those things that we know only through the knowledge and experience of others. For instance, we can't see what Newton saw that made him so important that the authorities buried him in Westminster Abbey. There are also more dangerous consequences. Because we confuse the knowledge in our heads with the knowledge we have access to, we are largely unaware of how little we understand. We live with the belief that we understand more than we do. If you have used the Internet recently to work on a task, you'd find it hard to assess your ability as an individual to perform the task since it is so intertwined with the contribution of the Internet. All the evidence concerns the team, you and

the computer operating together. And that team is naturally better at the task than an individual would be, so the evidence suggests that you're better at the task than someone who didn't have the advantage of the Internet at hand. Because thought extends beyond the skull and encompasses all the tools that are available to pursue goals, it's well-nigh impossible to gauge exactly what your individual contribution is. Just like if we're on a team and the team wins, then we win whether our role was large or small. This has some worrying consequences. The Internet's knowledge is so accessible and so vast that we may be fashioning a society where everyone with a smartphone and a Wi-Fi connection becomes a self-appointed expert in multiple domains. In one study in collaboration with Adrian Ward, we asked doctors and nurses on the website about their experiences with patients who search for diagnoses on sites like WebMD before visiting their office. The medical professionals told us that such patients don't actually know appreciably more than patients who haven't consulted the Internet. Nonetheless, they tend to be highly confident about their medical knowledge. This can lead them to deny the professional's diagnosis or seek alternative treatments. In another study we asked people to search the Internet for the answers to simple questions about finance, like "What is a stock share?" Next we asked them to play an investment game that was unrelated (the information they looked up was no help in performing better in the game). We also gave them the opportunity to bet on their performance. People who searched the Internet first bet a lot more on their performance than those who did not. But they didn't do any better in the game and ended up earning less money. The problem is that spending a

few minutes (or even hours) perusing WebMD is just not a substitute for the years of study needed to develop enough expertise to make a credible medical diagnosis. Spending a few minutes looking up facts on financial websites is not enough to understand the nuances of investing. Yet when we have the whole world's knowledge at our fingertips, it feels like a lot of it is in our heads. (4)

One of the most advanced forms of artificial intelligence for helping with everyday tasks is GPS (Global Positioning System) mapping software. GPS devices were becoming common in the 1990s and early 2000s; once the smartphone was introduced in 2007 with its built-in GPS, they were omnipresent. As you're driving along, these formidable little systems map out optimal routes, display them visually, update their recommendations according to current traffic conditions and whether or not you've missed your turn, and will even speak to you. Their capacities and power are remarkable, so remarkable that they've completely changed the way most of us navigate. They have even changed many relationships, mostly for the better: No longer do couples have to bicker about whether to stop to ask for directions. But notice what these amazing machines don't do: They don't decide to go the long route because you're on your way to your parents' house and you'd prefer to be late. They don't take the route that goes by the lake because there's a particularly beautiful sunset this evening. They don't suggest that traffic is really bad today and that you'd be better off staying home. They could do any one of these things, but doing so would have to be programmed in. What they can't do is read your mind to figure out your intentions—your goals and desires and your understanding about how to satisfy them—and then make those intentions their own in order to

arrive at novel suggestions. They cannot share your intentions in order to pursue joint goals. We do not share common ground with our technology in the sense that there is no mutual agreement between a machine and a user about what we know and what we're doing except in the most primitive sense. The machine can ask you if your goal is A, B, or C and respond appropriately to your answer. But it cannot share that goal with you in a way that would justify its taking the initiative to pursue a novel objective at the last second. You have an implicit contract with your machine that says the machine will do what it can do in order to help you pursue your goal. But you have to make sure you've told it what your goal is. The machine is not a collaborator; it's a tool. In that sense, the tools of artificial intelligence are more like a microwave oven than another human being. Technology may be a big part of the community of knowledge by providing information and useful instruments, but it is not a member of the community in the same way that humans are. We don't collaborate with machines, we use them. (5)

The ability to share an intention is a critical part of what matters in an intelligent agent. Central human functions like language and conceptualization depend on it because they are both collaborative activities. We suspect it's been hard to program a computer to share your intentionality because doing so would require the computer to be able to coordinate with others—to be aware of what you know and what others know; it would require an ability to reflect on one's own cognitive processes and those of others. No one knows how to program a computer to be aware. If someone could, we would understand what it means to be conscious. But we don't. We are at an awkward moment in the history of technology. Almost everything we do is enabled by

intelligent machines. Machines are intelligent enough that we rely on them as a central part of our community of knowledge. Yet no machine has that singular ability so central to human activity: No machine can share intentionality. This has consequences for how humans and machines work together. Modern airplanes simply cannot be flown without the help of automation. The most advanced military jets are fly-by-wire: They are so unstable that they require an automated system that can sense and act many times more quickly than a human operator to maintain control. Our dependence on smart technology has led to a paradox. As the technology improves, it becomes more reliable and more efficient. And because it's reliable and efficient, human operators start to depend on it even more. Eventually they lose focus, become distracted, and check out, leaving the system to run on its own. In the most extreme case, piloting a massive airliner could become a passive occupation, like watching TV. This is fine until something unexpected happens. The unexpected reveals the value of human beings; what we bring to the table is the flexibility to handle new situations. Machines are merely serving as tools. So when the human operator gives up oversight, the system is more likely to have a serious accident. The automation paradox is that the very effectiveness of automated safety systems leads to a dependence on them, and that this dependence undermines the contribution of the human operator, leading to greater danger. Modern technology is extremely sophisticated and getting more so. Automated safety systems are improving. As they get more complex and include additional bells and whistles and backup systems, they get exploited to do more and more. When they fail, the resulting catastrophe is that much

bigger. The irony is that automated systems on airplanes, trains, and industrial equipment can compromise overall safety. Because the technology doesn't understand what the system is trying to accomplish —because it doesn't share the humans' intentionality—there's always the danger that something will go wrong. And when the human part of the system isn't ready for the technology to fail, disaster can ensue. You may have already experienced the automation paradox, thanks to the proliferation of GPS devices. Some people have such a close relationship with them that they do whatever their GPS tells them to do. There are many stories of people driving into bodies of water and off cliffs because they were so busy obeying their GPS master. (6)

One of the skills that comes along with being aware of oneself is the ability to reflect on what's going on. People can always observe and evaluate their own behavior. They can step back and make themselves aware of what they're doing and what's happening in their immediate environment. If they don't like what they see, they can exert some influence to change it. That influence is limited, to be sure. If you're obsessed by some fear or desire, you may not be able to control that. But at least we have the capacity—when we're awake and conscious—to be aware of what's happening. To the degree that we have control over our actions, we can modify our actions. By contrast, machines always have to obey their programs. Their programs may be sophisticated and there are ways of programming them to adapt to changing environments. But in the end, if the designer of the program has not thought of a situation that the machine does not know how to respond to, and that situation in fact occurs, the machine is going to do the wrong thing. So a critical role for human beings is oversight—just

being there in case something goes terribly wrong. The big danger today is that no one has access to all the knowledge necessary to understand and control modern sophisticated technology. And technology is getting more sophisticated at an even faster rate than ever. (7)

Adapted from Nautilus.

Exercise III.

Find paragraphs, dealing with the following: welcomes, faith, fail, illusion, skulls, cognition, base, sophisticated, erudite, memories.

Exercise IV.

Fill in the gaps.

1. Nike's success is all the more …........................ given its earlier technology stumbles.

2. Now it may be time for the village to help raise **…........................** about weight control.

3. So over the next few years, you'll see very …............................... visual advertisements.

4. In …........................ I shouldn't have been surprised, but it seemed too good to be true.

5. Somalia is already …............................... impossible to control by counterterrorist forces.

6. He also operates a Web site where potential customers can …........................ his collection.

7. It certainly made for a …............................ treat for the eyes as well as the taste buds.

8. Many newer aircraft replace these mechanical controls with …... systems.

9. Exactly when it will launch and what it will …................................. remains unclear.

10. Just experience the present moment and allow what is around you to ….................................. itself.

Exercise V.

Make up sentences of your own with the following word combinations:

to get by, curse of knowledge, hindsight bias, knew it all along, to veg out, by virtue, to find a common ground, fly-by-wire, to bring to the table

Exercise VI.

Match the words to the definitions in the column on the right:

awareness	a very slight difference in appearance, meaning, sound, etc.
sophisticated	not having or showing any depth of character or understanding
smartphone	produced or conducted by two or more parties working together
superficial	complicated or made with great skill:
to encompass	inspiring fear or respect through being impressively large, powerful, intense, or capable
credible	knowledge or perception of a situation or fact
nuance	having or showing great knowledge or learning

formidable	a mobile phone that can be used as a small computer and that connects to the internet
collaborative	surround and have or hold within
erudite	able to be believed; convincing

Exercise VII.

Summarize the article "Machine mind".

Part 2

Exercise I.

Identify the part of speech the words belong to.
clever, primary, user, inadequate, unattractive, researchers, negatively,

potential, compare, relationships

Exercise II .

Form verbs from the following words:

belief (1), dependent (1), knowledge (1), division (2), contribution (2),

connection (2), investment (2), agreement (2), critical (2), reliable (3)

Exercise III.

Find synonyms to the following words. Translate them into Russian:

understand (6), compromise (6), equipment (6), industrial (6), fail (6),

additional (6), effectiveness (6), safety (7), distracted (7), control (7),

Exercise IV.

Find antonyms to the following words. Translate them into Russian:

efficient (6), faster (7), sophisticated (7), modern (7), understand (7), big (7), danger (7),   necessary (7), wrong (7), aware (7)

Exercise V.

Match the words to make word combinations:

big	grasp
hive	share
hindsight	machine
stock	contribution
flip	mind
knowledge	game
conceptual	experience
sensory	bias
coffee	side
individual	illusion

3. Artificial Intelligence is already weirdly inhuman
Part 1

Exercise I.

Say what Russian words help to guess the meaning of the following words: professor, effective, candidates, photograph, recommendations, missions, finance, algorithms, instructions moment

Exercise II.

Make sure you know the following words and word combinations.

Relentless, ubiquitous, downright, glitch, troubling, cruncher, to scribble, subset, to discern, sheer,

Artificial Intelligence is already weirdly inhuman

Veloso, a professor of computer science and robotics at Carnegie Mellon University, and I have been talking about what machines perceive and how they "think"—a subject not nearly as straightforward as I had expected. Artificial intelligence has been conquering hard problems at a relentless pace lately. In the past few years, an especially effective kind of artificial intelligence known as a neural network has equaled or even surpassed human beings at tasks like discovering new drugs, finding the best candidates for a job, and even driving a car. Neural nets, whose architecture copies that of the human brain, can now —usually—tell good writing from bad, and—usually—tell you with great precision what objects are in a photograph. Such nets are used more and more with each passing month in ubiquitous jobs like Google searches, Amazon recommendations, Facebook news feeds, and spam

filtering—and in critical missions like military security, finance, scientific research, and those cars that drive themselves better than a person could. Neural nets sometimes make mistakes, which people can understand. But some hard problems make neural nets respond in ways that aren't understandable. Neural nets execute algorithms—a set of instructions for completing a task. Algorithms, of course, are written by human beings. Yet neural nets sometimes come out with answers that are downright weird: not right, but also not wrong in a way that people can grasp. Instead, the answers sound like something an extraterrestrial might come up with. These oddball results are rare. But they aren't just random glitches. Neural nets sometimes think differently. And we don't really know how or why. That can be a troubling thought, even if you aren't yet depending on neural nets to run your home and drive you around. After all, the more we rely on artificial intelligence, the more we need it to be predictable, especially in failure. Not knowing how or why a machine did something strange leaves us unable to make sure it doesn't happen again. But the occasional unexpected weirdness of machine "thought" might also be a teaching moment for humanity. Until we make contact with extraterrestrial intelligence, neural nets are probably the ablest non-human thinkers we know. To the extent that neural nets' perceptions and reasoning differ from ours, they might show us how intelligence works outside the constraints of our species' limitations. Galileo showed that Earth wasn't unique in the universe, and Darwin showed that our species isn't unique among creatures. Joseph Modayil, an artificial intelligence researcher at the University of Alberta, suggests that perhaps computers will do something similar for the

concept of intellect. "Artificial systems show us intelligence spans a vast space of possibilities," he says. (1)

First, though, we need to make sure our self-driving cars don't mistake school buses for rugby shirts, and don't label human beings in photos as gorillas or seals, as one of Google's neural nets recently did. In the past couple of years, a number of computer scientists have become fascinated with the problem and with possible fixes. Of course, any system that takes in and processes data can misidentify objects. That includes the human brain, which can be convinced that the patterns in its morning toast are a portrait of Jesus. But when you look at a pattern and see something that is not there, other people can understand why you made your mistake. This is because we all share the same mental system for seeing things and making sense of them. In a perfect world, our machines would share that system too, and we could understand them as well as we understand one another. Oddball results from neural nets show us that we don't live in that world. In such moments, we can see that algorithmic "thinking" is not a copy of ours. People who write the algorithms want to humanize things, and to interpret things in ways that are in line with how we think and reason. But we need to be prepared to accept that computers, even though they're performing tasks that we perform, are performing them in ways that are very different. It is not yet possible to understand how a neural net arrived at an incomprehensible result. The best computer scientists can do with neural nets is to observe them in action and note how an input triggers a response in some of its units. That's better than nothing, but it's not close to a rigorous mathematical account of what is going on inside. (2)

Neural nets were first proposed in the 1940s as a rough software model of the cerebral cortex, where much of perception and thinking take place. In place of the physical neurons in our heads, the network runs virtual neurons made of code. Each of these is a node with multiple channels for receiving information, a processor for computing a function from those inputs, and one channel for outputting the result of its work. These virtual neurons, like the cells in the human cortex, are organized in layers. Information entering a layer triggers a collective response from its neurons (some are activated and communicate with each other, while others stay silent). The result is passed on to the next layer, where it is treated as raw material for further processing. Although each neuron is a simple information cruncher, this architecture allows the cells collectively to perform amazing feats with the data they receive. In real brains, for instance, neurons convert a few million electrical impulses in your optic nerves into a perception that you're looking at a reflection in a window. Layers in your cortex that respond to, say, edges of objects pass on their work to layers that interpret that interpretation—responding to an edge even if it is upside down and in dim light. Layers further along interpret that interpretation, and at the end the visual information is integrated into a complex perception: "That's an upside-down banana in the shadows." Neural nets are simpler. But with recent advances in processing power and the growing availability of huge data sets to provide examples, they can now achieve similar successes. Their layered processing can find patterns in vast amounts of data, and use those patterns to connect labels like "starfish" to the right images. The machine doesn't have hundreds of millions of

years of evolutionary design guiding it to notice traits like colors, edges, and shapes. Instead, a neural net is "trained" by human programmers. They will give it—to take one example—a vast number of scrawls, each identified as a human's scribbled version of a letter of the alphabet. As the algorithm sorts them, its wrong guesses are corrected, until all its classifications of the training data are correct. With thousands of examples of what humans consider to be a letter "d," a neural net soon works out a rule for deciding correctly what it should label a "d" in the future. That's one of the great appeals of neural net architecture: It allows computer scientists to design handwriting recognition without having to come up with endless lists of rules for defining a proper "d." And they don't need to show the machine every "d" ever created, either. With just a tiny subset of all possible d's in the universe—the examples it has trained on—the neural net has taught itself to recognize any future "d" it encounters. The disadvantage of this architecture is that when the machine rules that TV static is a cheetah, computer scientists don't have a list of its criteria for "cheetah," which they can search for a glitch. The neural net isn't executing a set of human-created instructions, nor is it running through a complete library of all possible cheetahs. It is just responding to inputs as it receives them. The algorithms that create a net are instructions for how to process information in general, not instructions for solving any particular problem. In other words, neural net algorithms are not like precise recipes—take this ingredient, do that to it, do this. They are more like orders placed in a restaurant. "I'd like a grilled cheese and a salad, please." To find results from exploring the

data, to discover relationships, the computer uses rules that it has made. (3)

At the moment, humans can't find out what that computer-created rule is. In a typical neural net, the only layers whose workings people can readily discern are the input layer, where data is fed to the system, and the output layer, where the work of the other layers is reported out to the human world. In between, in the hidden layers, virtual neurons process information and share their work by forming connections among themselves. As in the human brain, the sheer number of operations makes it impossible, as a practical matter, to pinpoint the contribution of any single neuron to the final result. The complexity depends on complex interactions between millions of parts, and we as humans don't know how to make sense of that. Moreover, a great deal of information processing is done in the ever-changing connections among neurons, rather than in any single cell. So even if computer scientists pinned down what every cell in a network was doing at a given moment, they still would not have a complete picture of its operations. Knowing that a part of a layer of neurons is activated by the outline of a face, for instance, does not tell you what part those neurons play in deciding whose face it is. This is why neural networks have long been known as 'black boxes' because it is difficult to understand exactly how any particular, trained neural network functions, due to the large number of interacting, non-linear parts. It's intractable and hard to understand. But just because you can't understand everything doesn't mean you can't understand anything. The team of researchers at Google— Alexander Mordvintsev, Christopher Olah, and Mike Tyka—revealed a

method they'd developed to make an image-recognition net reveal the work of specific layers in its architecture. "We simply feed the network an arbitrary image or photo and let the network analyze the picture," the trio wrote. "We then pick a layer and ask the network to enhance whatever it detected." The result was an array of striking images, whose exact shape varied according to what the interrogated layer was focused on. (They soon became famous on the Web as "Google Deep Dream.") Not long after, Clune, Yosinski, Nguyen, Thomas Fuchs of the California Institute of Technology, and Hod Lipson of Cornell University published a different method of getting an active neural net to reveal what parts of its layers, and even what individual neurons, are doing. Their software tracks events in each layer of a neural network after a human has presented it with a specific image. A user can see, next to the object or image he has shown the network, a map in real time of the neurons that are responding to it. "So you can see what a particular node responds to," Clune explains. "We're starting to allow you to shine light into that black box and understand what's going on." While researchers strive to figure out why vast data sets used to train algorithms do not reflect the reality they expected, others think the strange rules dreamed up by algorithms might be teaching us about aspects of reality that we can't detect ourselves. After all, a flower will look good to both a human and a bee, but that doesn't mean both creatures see the same thing. Even though a bee would find our color perception weird, and vice versa, neither species' view is an illusion. Perhaps the strangeness of neural-net cognition will teach us something. Perhaps it will even delight us. Some machine judgments could lead

people to see thingss in a new way, or think about the category differently. That sounded like a good definition of "art" to the researchers. So they submitted some of their images to a competition for a show at the University of Wyoming Art Museum. The judges didn't learn that the artist wasn't human until weeks after they'd admitted the work into the show. It's fair, then, to describe AI researchers as optimists—but then, AI researchers are people who find the prospect of computer-written poems or computer-choreographed dances delightful. Even if an algorithm comes up with dance moves no human could perform, we could still enjoy watching the robots do the dance. What we know for sure is that, for now, humanity doesn't fully understand algorithms, even as it depends more and more on algorithmic processes. The need for a better view into the machine "mind" extends beyond researchers puzzled by neural nets. It's a challenge for the entire field of artificial intelligence—and the entire society that depends on it. (4)

Adapted from Nautilus.

Exercise III.

Find paragraphs, dealing with the following:
humanity, extraterrestrial, limitations, spans, self-driving, misidentify, humanize, incomprehensible, triggers, rigorous

Exercise IV.

Fill in the gaps.

1. Those who beat the …..................... deadlines stand a chance of having a great garden.

2. Wi-Fi-enabled tablets, phones, cameras and other devices have become …...................................

3. This is an Apple hallmark and it's admittedly easier to express than to …...........................

4. Yet many other people find the F-word alluring, not to mention …................................. useful.

5. Efforts to test the reliability of the findings have produced …................................. results.

6. Add a few years and you have a production guaranteed to …........................ any audience.

7. Webbooks are just one small............................. of devices on which Shuttleworth has his eye.

8. Unable to …..........................if the whole thing was a stunt, the audience laughs awkwardly.

9. Her competitiveness and …........................... determination to win is what helps drive the team.

10. Officials didn't …........................... any deal, and details of the meeting weren't available.

Exercise V.

Make up sentences of your own with the following word combinations:

to conquer hard problems, at a relentless pace, to pin down, to figure out

Exercise VI.

Match the words to the definitions in the column on the right:

| algorithm | made by people, often as a copy of something natural |
| delight | the ability to learn, understand, and make judgments or have |

	opinions that are based on reason
to enhance	the outside limit of an object, area, or surface; a place or part farthest away from the center of something
to outline	draw irresistibly the attention and interest of (someone)
to execute	to provide something and put it in the correct position
to fascinate	please (someone) greatly
edge	to improve the quality, amount, or strength of something:
fit	to give the main facts about something:
intelligence	carry out or put into effect (a plan, order, or course of action)
artificial	a list of instructions for solving a problem

Exercise VII.

Summarize the article "Artificial Intelligence is already weirdly inhuman"

Exercise I.

Identify the part of speech the words belong to.

cerebral, virtual, multiple, channels, processor, human, layers, collective, response, silent

Exercise II .

Form adjectives from the following words: intelligence (1), rely (1), weirdness (1), intellect (1), possibilities (1), collectively(3), differ (3), consider (3), correctly(3), architecture (4)

Exercise III.

Find synonyms to the following words. Translate them into Russian:

complete (3), respond (3), receive (3), solve (3), rule (3), output (3), virtual (3), connection (3), contribution (1), result (3) .

Exercise IV.

Find antonyms to the following words. Translate them into Russian:

entire (4), extend (4), optimist (4), delightful (4), admit (4), delight (4), illusion (4), vast (4), allow (4), light (4)

Exercise V.

Match the words to make word combinations:

critical	beings
scientific	pace
military	cortex
neural	intelligence
human	security

relentless	research
cerebral	filtering
artificial	missions
computer	network
spam	science

4. How death got cool

Part 1

Exercise I.

Say what Russian words help to guess the meaning of the following words: conceptual, installation, secrets, cocktail, yoga, classes, reflection, bourgeois , decorated, pyjama

Exercise II

Make sure you know the following words and word combination

Upbeat, shroud, bespoke, mortician, weirdo, dearth, incapacitate, dotage, to amass, keepsake

How death got cool

Dying well has become a defining obsession of our time

Last spring, at Green-Wood cemetery in Brooklyn conceptual artist, Sophie Calle, launched an installation called <u>Here Lie the Secrets of the Visitors of Green-Wood Cemetery</u>. For the next 25 years, anyone passing by will be able to write down their most intimate secrets and bury them in a grave designed by the artist. The cemetery also hosts moonlit tours, cocktail parties, dance performances, and even yoga classes. Death is hot right now, and upbeat gatherings in cemeteries are just a small part of the trend. One of the chief desires of our time is to turn everything we touch into a reflection of who we are, how we live and how we want others to view us – and death is no exception. Once merely the inevitable, death has become a new bourgeois rite of passage that, much like weddings or births, must now be minutely planned and

personalised. Not since the Victorian era's fetishisation of death, has it been so appealingly packaged. Every death must be in some way special and on-trend. Finally, the hipster can die as he lived. If you fancy an environmentally friendly burial, you can choose to be wrapped in a biodegradable artisanal shroud, decorated to your specifications by the bespoke company Vale for $545. (It's just $68 for pets.) Or you can be buried in a burial pyjama suit seeded with mushrooms that help your body decompose more quickly. A few years ago, artist Jae Rhim Lee delivered a Ted talk while wearing one such suit – a black hooded one-piece threaded with white veins infused with mushroom spores. On stage, Lee cheerfully explained that she is training mushrooms to eat her when she dies by feeding them her hair, nails and dead skin so they recognise her body. (1)

For people less concerned about the environment and more worried about the terrifying prospect of dying alone, there are now solutions (or at least partial ones). You can hire a death doula, a trained professional who will assist at the end of life in the same catch-all manner that birth doulas are there during labour. You can request a home funeral, in which your friends and family pay their respects to your corpse in the comfort of your living room, with every detail as carefully planned as a wedding. And before that day arrives, you can discuss the facts of death with like-minded souls at a Death Cafe, a meeting of the global movement as a way for people to gather and reflect on mortality. One of the people pioneering this new way of approaching death is Caitlin Doughty, a young, Los Angeles-based mortician who looks like a lost member of the Addams Family. She has

written a bestselling memoir, hosts a YouTube series called Ask a Mortician and has founded a "death acceptance collective" called The Order of the Good Death, whose youthful members promote positive approaches to mortality. "It's OK to be openly interested in death practices," Doughty told me. "It makes you an engaged human who cares about all aspects of life. Ghettoising it as an interest particular to goths, weirdos or people obsessed with murder creates a dearth of honest conversation about death in the western world." This growing interest in alternative "death practices" began as a way to skirt the commercialism and uniformity of the funeral industry. And it appeals to a diverse set of people. They don't want a bland corporate infrastructure to dictate what happens to their mortal remains and what represents their life. Given that the idea of rethinking death connects with millions of people who are tired of the rampant commercialism and homogeneity of modern life, it was only a matter of time before commercial interests caught on. Just as the Danish concept of hygge was sold – in the form of scented candles and hand-knitted woollen socks – to consumers looking for comfort in troubled times, there is gold, too, in our obsession with a good death. Publishers, in particular, have latched on to the trend. Books about death are nothing new, of course, but the pace at which they're arriving seems to have accelerated. In recent months, thanks to a publisher-led media campaign, you may have come across the concept of döstädning, the Swedish practice of "death cleaning". Death cleaning applies a simple formula to the process of dealing with our possessions before we die. In Marie Kondo's The Life-Changing Magic of Tidying, a bestselling guide to tidying up your home, and thus your life, the

essential question is whether a given object "sparks joy". In death cleaning, it is "Will anyone I know be happier if I save this?" It is easy to see the appeal. Death cleaning addresses many of the aspects of contemporary life that make us most anxious. For those who feel that they have accumulated too much stuff and that all this stuff is getting in the way of their spiritual development, it offers a practical guide to de-cluttering. For those who worry about their privacy or the prospect of relatives discovering their secrets, it offers sensible precautions. For those who fear a long, bewildered, incapacitated old age, it is a way of coping through clear-eyed preparation and understanding. (2)

While Silicon Valley billionaires search for cures for death, the rest of us are just seeking ways of accepting death, ordering a long and messy old age and making peace with our relatives, who are already horrified at the idea of looking after us in our incontinent, incoherent dotage. The fact of living longer doesn't just give us time to think about death, but also plunges us into chaos, sickness and confusion, and death cleaning seems a valiant attempt to counter this. Death cleaning is a concept that has had passing mentions in Sweden, but it is not a well-known part of the national culture. In truth, it seems to be more talked about by foreigners who like to imagine Scandinavia as a place where people have life sorted out than it is by Swedes themselves. But even if Swedes rarely talk about döstädning, there is something authentic about the underlying philosophy. The Swedish ambassador to the US, Karin Olofsdotter, recently told the Washington Post that death cleaning is "almost like a biological thing to do", the natural product of a society that prizes living independently, responsibly and thoughtfully, and whose homes reflect that ideal. A friend of mine who works as a radio

producer in Stockholm said: "My mother has been in the mode of frenetic cleaning for couple of years now – she is 65 – and thinks throwing stuff out will make it easier for us children when she is no longer with us. She doesn't want us to be left with difficult decisions about what to do with it and she doesn't want personal stuff to get in the wrong hands. And ever since I was a teen she has forced me to get rid of stuff – my earliest paintings, old clothes, books I read as a child. Keeps telling me that it's the best for everyone. I don't know if it's typically Swedish, but it is very, very rational and unsentimental." The well-funded Swedish welfare state enables elderly Swedes to live independently. Perhaps this also adds to the sense that they feel they must get their things in order before they die, so that no one else should be responsible for it. Swedes are deeply, deeply responsible people. It is very important for a Swede to do things properly, not to be a burden on others, to take responsibility in this way. In Sweden they value the 'modern' and 'new', and so, if you visit a dump or recycling centre, you see some fairly eye-popping items discarded – stuff Brits would never throw away. The book responsible for spreading the death-cleaning gospel is by Margareta Magnusson, a Swedish artist who describes herself as between "80 and 100". Over the course of 38 very short chapters with titles such as If It Was Your Secret, Then Keep It That Way (or How to Death Clean Hidden, Dangerous and Secret Things), Magnusson sets out her pragmatic approach to mortality. "Life will become more pleasant and comfortable if we get rid of some of the abundance," she writes. "The message was: we just have to accept that one day we will die," said her literary agent, Susanna Lea. "Either our

loved ones will begrudge us, or they will hold on to this wonderful memory and love us for sorting everything out. Which one do you want?" (3)

Swedish death cleaning has found a kind of American counterpart in the rise of a pair of young men from Ohio who call themselves the Minimalists. When one of the duo, Joshua Fields Millburn, lost his mother in 2009, he was left wondering what to do with everything she had amassed in her small apartment. In the end, he decided to donate it all to charity. What would go on to become the foundational principle of his brand of minimalism dawned on him: "Our memories are not inside of things; they're inside of us." From that moment almost a decade ago, Millburn and his friend Ryan Nicodemus have built a Minimalist empire – books, documentaries, speaking tours – based on the idea that accumulating stuff is simply what we do to distract ourselves from our real problems: lack of satisfaction with work, love, life and, ultimately a way to deny the inevitability of death. Isn't all decluttering about death? I asked Doughty, the mortician. "It is a little death to give away a keepsake or an item," she agreed. "For most people to admit that they should be keeping track of stuff and getting rid of things is extremely threatening to their sense of self and idea as mortal." For many of us, the main way we try to look at death is by not looking at it. Planning for death is hard, because it means that one must accept that you are the one who cares most, or at all, about your own legacy. To plan for death is to accept both ideas simultaneously. "There might be no one at your bedside. You might not be found for two days and eaten by cats. That's all in the realm of possibility," Doughty said.

"But even surrounded by loved ones, you check out alone. This is your personal journey to go on." (4)

The idea of death as a solo journey is redolent of the language of wellness: the way people talk about getting into their fitness or diet or mindfulness routines. This new view of death borrows heavily from another trendy concept: self-care, the idea that looking after oneself is a political act, shoring yourself up to be able to keep fighting and facing the world. Self-care, too, has been co-opted to be about treating yourself to bath products, face masks and yoga retreats – granting yourself an excuse to make it OK to buy stuff. The commercialisation of death is the inevitable sequel to the monetisation of every other part of life. Death cleaning is possibly more potent than other wellbeing trends in that it taps into deep emotions: fear, guilt, regret. The death industry exploits people's fears of inadequacy. You can't just die – at the very least, you'll need to invest in a house-tidying consultant, a death doula, an environmentally sound bespoke shroud, and a home funeral, to prove just how well you lived. (5)

Adapted from The Guardian.

Exercise III.

Find paragraphs, dealing with the following: spores, prospect, doula funeral, mortality, mortician, memoir, goths, commercialism, bland

Exercise IV.

Fill in the gaps.

1. He's organized and …..................., a breath of fresh air on a team that had grown musty.

2. More …...................... solutions also exist for smartphones with inbuilt GPS capabilities.

3. One person reported feeling faint and was taken to the hospital as a …..........................

4. The idea, I suppose, would be to …....................... the target but not permanently.

5. Their explanations will be arbitrary and possibly even logically …......................

6. Government officials repeatedly reported …...................... real income growth figures.

7. In terms of specs, the Google Nexus S far outperforms its knock-off …............................

8. It was a Christmas card, to us and to him, preprinted but a …......................... nonetheless.

9. It is …....................... of the kid always picked last for a team and then shoved in goal.

10. Think of creative ways of integrating more …....................... into your daily schedule.

Exercise V.

Make up sentences of your own with the following word combinations:

in troubled times , to come across, at the very least, to tide up one's home

Exercise VI.

Match the words to the definitions in the column on the right:

bland	astonishing or strikingly impressive
to infuse	to become lower in value or level very suddenly and quickly

corpse	fragrant or sweet-smelling
precaution	a person or thing holding a position or performing a function that corresponds to that of another person or thing in another place
conviviality	not having a strong taste or character or not showing any interest or energy:
incoherent	be soaked in this way
counterpart	a dead body, esp. of a human being rather than an animal
redolent	a measure taken in advance to prevent something dangerous, unpleasant, or inconvenient from happening
to plunge	the quality of being friendly and lively; friendliness
eye-popping	internally inconsistent; illogical

Exercise VII.

Summarize the article "How death got cool".

Part 2

Exercise I.

Identify the part of speech the words belong to. valiant, mindfulness, mortal, commercialism, homogeneity, commercial, woolen, consumers, obsession

Exercise II .

Form adverbs from the following words:

conceptual (1), intimate (1), secrets (1), inevitable (1), special (1), professional (1), global (1), positive (1), particular (1), honest (9)

Exercise III.

Find synonyms to the following words. Translate them into Russian:

conversation (2), appeal (2), growing (2), alternative (2), diverse (2), homogeneity (2), consumer (2), comfort (2), arrive (2), possession (2)

Exercise IV .

Find antonyms to the following words. Translate them into Russian:

love (4), die (5), well (5), fear (5), regret (5), guilt (5), inadequacy (5), deep (5), clean(5), inevitable (5)

Exercise V.

Match the words to make word combinations:

biodegradable	artist
mushroom	performances
dance	classes
cocktail	cleaning
welfare	tour
yoga	shroud

intimate	spores
death	parties
conceptual	state
moonlit	secrets

SUPPLEMENTARY READING

1. The Selfish Dataome

Does the data we produce serve us, or vice versa?

You've heard the argument before: Genes are the permanent aristocracy of evolution, looking after themselves as fleshy hosts come and go. That's the thesis of a book that, last year, was christened the most influential science book of all time: Richard Dawkins' *The Selfish Gene*. But we humans actually generate far more actionable information than is encoded in all of our combined genetic material, and we carry much of it into the future. The data outside of our biological selves—call it the dataome—could actually represent the grander scaffolding for complex life. The dataome may provide a universally recognizable signature of the slippery characteristic we call intelligence, and it might even teach us a thing or two about ourselves. It is also something that has a considerable energetic burden. That burden challenges us to ask if we are manufacturing and protecting our dataome for our benefit alone, or, like the selfish gene, because the data makes us do this because that's what ensures *its* propagation into the future.

Take, for instance, William Shakespeare. Shakespeare died on April 23, 1616 and his body was buried two days later in Holy Trinity Church in Stratford-Upon-Avon. His now-famous epitaph carries a curse to anyone who dares "move my bones." And as far as we know, in the past 400 years, no one has risked incurring Will's undead wrath. But he has most certainly lived on beyond the grave. At the time of his death Shakespeare had written a total of 37 plays, among other works. Those 37 plays contain a total of 835,997 words. In the centuries that have come after his corporeal life an estimated 2 to 4 billion physical copies of his plays and writings have been produced. All of those copies have been composed of hundreds of billions of sheets of paper acting as vessels for more than a quadrillion ink-rich letters.

Across time these billions of volumes have been physically lifted and transported, dropped and picked up, held by hand, or hoisted onto bookshelves. Each individual motion has involved a small expenditure of energy, maybe a few Joules. But that has added up across the centuries. It's possible that altogether the simple act of human arms raising and lowering copies of Shakespeare's writings has expended well over 4 trillion Joules of energy. That's equivalent to combusting several hundred thousand kilograms of coal.

Additional energy has been utilized every time a human has read some of those 835,997 words and had their neurons fire. Or spoken them to a rapt audience, or spent tens of millions of dollars to make a film of them, or turned on a TV to watch one of the plays performed, or driven to a Shakespeare festival. Or for that matter bought a tacky bust of "the immortal bard" and hauled it onto a mantelpiece. Add in the energy expenditure of the manufacture of paper, books, and their transport and the numbers only grow and grow.

It may be impossible to fully gauge the energetic burden that William Shakespeare unwittingly dumped on the human species, but it is substantial. Of course, we can easily forgive him. He wrote some good stuff. But there is also a sense in which the data of Shakespeare has become its own living part of the dataome, propagating itself into the future and compelling all of us to support it, just as is happening right now in this sentence.

Shakespeare, to be fair, contributed barely a drop to a vast ocean of data that is both ethereal yet actually extremely tangible in its effects upon us. This is both the glory and millstone of *Homo sapiens*.

We have been pumping out persistent data since our first oral exchange of a good story and our first experimental handprint on a cave wall. Neither of those things were explicitly encoded in our DNA, yet they could readily outlive the individual who created them. Indeed, data like these have outlived generation after generation of humans.

But as time has gone by our production of data has accelerated. Today, by some accounts, our species generates about 2.5 quintillion bytes of data a day. That's more than a billion billion bytes for each planetary rotation. And that rate of output is still growing. While lots of that data is a mixture of fleeting records—from Google searches to air traffic control—more and more ends up persisting in the environment. Pet videos, GIFs, political diatribes, troll responses, as well as medical records, scientific data, business documents, emails, tweets, photo albums, all wind up as semi-permanent electrical blips in doped silicon or magnetic dots on hard drives.

This data production and storage takes a lot of energy to maintain, from the moment someone's hands scrabble for rare-earth elements in the soil, to the electricity that sustains it all. There's a reason that a large company like Apple builds its own data server farms, and looks for ways to optimize the power generation that these air-conditioned, electron-

pushing factories demand, whether it's building massive solar farms in Nevada or utilizing hydroelectricity in Oregon.

Even Shakespeare's medium—traditional paper—is still an energy-hungry beast. In 2006 it was estimated that United States paper production gulped down about 2,400 trillion BTUs (about 4 million trillion trillion trillion Joules) to churn out 99.5 million tons of pulp and paper products. That amounts to some 28,000 Joules of energy used per gram of final material—before any data is even printed on it. Or to put it another way, this is equivalent to roughly 5 grams of high-quality coal being burnt per page of paper.

Why are we doing this? Why are we expending ever increasing amounts of effort to maintain the data we, and our machines, generate? This behavior may represent far more than we at first think.

On the face of things, it seems pretty obvious that our capacity to carry so much data with us through time is a critical part of our success at spreading across the planet. We can continually build on our knowledge and experience in a way that no other species seemingly does. Our dataome provides us with a massive evolutionary advantage.

But it's clearly not free. We may be trapped in a bigger Darwinian reality where we are in effect now serving as a supporting organelle for our own dataome.

This is an unsettling framework for looking at ourselves. But it has parallels in other parts of the natural world. Our microbiome, of tens of trillions of single-celled organisms, is perpetuated not so much by us as individuals, but by generations of us carrying this biological information through time. Yet we could also flip this around and conceptualize the situation as the microbiome carrying us through time. The microbiome exists in us because we're a good environment. But that's a symbiotic relationship. The microbes have to do things a certain way, have to work at supporting their human carrying systems. A human represents an energetic burden as much as an evolutionary advantage to microbes. Similarly, our dataome is both an advantage to us humans, and a burden. The question is, is our symbiosis still healthy? The present-day energetic burden of the dataome seems like it could be at a maximum level in the history of our species. It doesn't necessarily follow that we're experiencing a correspondingly large benefit. We might do well to examine whether there is an optimal state for the dataome, a balance between the evolutionary advantages it confers on its species and the burden it represents.

The proliferation of data of seemingly very low utility (that I might grumpily describe as cat pictures and selfies) could actually be a sign of worrying dysfunction in our dataome. In other words, undifferentiated and exponential growth of low-value data suggests that data can get cancer. In which case we'd do well to take this quite seriously as a human health issue—especially if treatment reduces our global energy burden, and therefore our impact on the planetary environment.

Improving the utility of our data, purging it of energy-wasting junk might not be popular, but could perhaps be incentivized. Either through data credit schemes akin to domestic solar power feeding back to the grid, or making the loss of data a positive feature. What you might call a Snapchat approach.

In that case, the human-dataome symbiosis might become the only example in nature of a symbiotic relationship that is *consciously* managed by one party. What the long-term evolutionary robustness of that would be is hard to say. But more optimistically; if the dataome is indeed an integral and integrated part of our evolutionary path then perhaps by mining it we can learn more about not just ourselves and our health, but the nature of life and intelligence in general. Precisely how we interrogate the dataome is a wide-open question. There may be emergent structure within it that we simply haven't recognized, and we will need to develop measures and metrics to examine it properly. Existing tools like network theory or computational genomics might help. The potential gains of such an analysis could be enormous. If the dataome is a real thing then it represents a missing piece of our puzzle; of the function and evolution of a sentient species. We'd do well to at least take a look. As Shakespeare once said : "The web of our life is of a mingled yarn, good and ill together."

Adapted from Nautilus.

2. GOOGLE EFFECT: IS TECHNOLOGY MAKING US STUPID?

Can't remember phone numbers or birthdays? You may be suffering from the 'Google Effect' – a theory that we've outsourced our memories, safe in the knowledge that answers are just a click away. "Is the internet making us stupid?" I type. Press enter. Almost instantly, a raft of answers and articles on screen. It's an unsettling feeling that my

first instinct – to Google my own stupidity – may be the root of my increasing daftness.

A recent study (you've probably forgotten it by now) suggests 90 per cent of us are suffering from digital amnesia. More than 70 per cent of people don't know their children's phone numbers by heart, and 49 per cent have not memorised their partner's number. While those of us who grew up in a landline-only world may also remember friends' home numbers from that era, we are unlikely to know their current mobiles, as our phones do the job. The Kaspersky Lab concludes we don't commit data to memory because of the "Google Effect" – we're safe in the knowledge that answers are just a click away, and are happy to treat the web like an extension to our own memory.

Dr Maria Wimber, lecturer at the University of Birmingham's School of Psychology, worked with the internet security firm on their research. She believes the internet simply changes the way we handle and store information, so the Google Effect "makes us good at remembering where to find a given bit of information, but not necessarily what the information was. It is likely to be true that we don't attempt to store information in our own memory to the same degree that we used to, because we know that the internet knows everything."

These findings echo Columbia University Professor Betsy Sparrow's research on the Google Effect on memory, which concluded, "Our brains rely on the internet for memory in much the same way they rely on the memory of a friend, family member or co-worker. We remember less through knowing information itself than by knowing where the information can be found."

This even extends to photographs. A Fairfield University study in 2003 found that taking photos reduces our memories. Participants were asked to look around a museum, and those who took photos of each object remembered fewer objects and details about them than those who simply observed. Dr Wimber says: "One could speculate that this extends to personal memories, as constantly looking at the world through the lens of our smartphone camera may result in us trusting our smartphones to store our memories for us. This way, we pay less attention to life itself and become worse at remembering events from our own lives."

But is this making us more stupid? Anthropologist Dr Genevieve Bell, a vice-president at Intel and director of the company's Corporate Sensing and Insights Group, believes not. She says technology "helps us

live smarter" as we're able to access answers. "Being able to create a well-formed question is an act of intelligence, as you quickly work out what information you want to extract and identify the app to help achieve this. To me, this suggests a level of engagement with the world that's not about dumbness." She gives the example of a new mother trying to work out whether their baby not sleeping is bad – and when to start worrying. "These are all questions that technology may be able to address quicker than calling your own parents," she says. "This isn't making consumers more dumb, instead it's helping them to think smarter."

She believes our biggest concern should be our mindset towards technology. "My suspicion is it isn't that the use of technology is making us dumber; instead it's a very human set of preoccupations and anxieties," she says. "Ultimately it's the anxiety about what technology means for us, what it means for our humanity, our bodies, our competency – and what it means to have new technologies in some ways threaten some of those things."

In contrast, Nicholas Carr, author of The Shallows: How the Internet is Changing the Way We Think, Read and Remember and The Glass Cage: Where Automation is Taking Us, believes we should be alarmed. "We're missing the real danger, that human memory is not the same as the memory in a computer: it's through remembering that we make connections with what we know, what we feel, and this gives rise to personal knowledge. If we're not forming rich connections in our own minds, we're not creating knowledge. Science tells us memory consolidation involves attentiveness: it's in this process that you form these connections."

He believes the combination of the Google Effect and the constant distraction of smartphones, constantly delivering information, is concerning. A Microsoft study found the average human attention span fell from 12 seconds in 2000 to eight seconds today. "There is a superficiality to a lot of our thinking," Carr says. "Not just the cognitive side, but also the emotional side. That not only reduces richness in one's own life and sense of self, but if we assume that rich, deep thinking is essential to society then it will have a detrimental effect on that over the long run. There will always be people who buck those trends, but I think it will have an effect of making ourselves and our culture a little shallow."

Carr believes our brains are not like hard drives, or refrigerators that can get overstuffed so there's no more room. In contrast, he says they expand: "It's not as if remembering and thinking are separate processes. The more things you remember, the more material you have to work on, the more interesting your thoughts are likely to be," he says. Andrew Keen, author of The Internet is Not the Answer, says: "Everything now is accessible – though supposed facts on the internet are not very reliable. It gives huge power to the people who store our data." He believes the emphasis on the art of memory from civilisations such as ancient China has been lost. "Some people believe it creates mental discipline: the facts themselves less important than the discipline of remembering them. Minds are in some ways more flaccid – especially if we're dabbling in social media."

He believes the bigger issue is what it's freeing us up to do. He agrees with Carr that "technology is making us shallower thinkers, multi-tasking, unable to digest speeches, even songs, perpetually flicking". In response, he says what we need now is creativity and innovation. "We need to think eclectically and daringly," he says. "The big issue is how to teach creativity. We don't need to learn facts, to remember stuff is less important, so the nature of professions are shifting; teachers should bear this is mind. The question is, how do you teach children to think differently?"

Dr Wimber advises people to spend time offline to safeguard their memories. "We know from memory research that we only remember information we pay attention to," she says. "If we spend all our time online, or experiencing our lives through a smartphone camera lens, we might miss important experiences, and not commit them to long-term memory. Constantly looking up information online is not an effective way to create permanent memories. The best way to make information stick is to sometimes sit back, and mentally refresh what you learnt or experienced a minute, an hour or a day ago."

Adapted from The Independent.

3. Immortal but Damned to Hell on Earth
The danger of uploading one's consciousness to a computer without a suicide switch

Imagine a supercomputer so advanced that it could hold the contents of a human brain. The Google engineer Ray Kurzweil famously believes that this will be possible by 2045. Organized technologists

are seeking to transfer human personalities to non-biological carriers, "extending life, including to the point of immortality." My gut says that they'll never get there. But say I'm wrong. Were it possible, would you upload the contents of your brain to a computer before death, extending your conscious moments on this earth indefinitely? Or would you die as your ancestors did, passing into nothingness or an unknown beyond human comprehension? The promise of a radically extended lifespan, or even immortality, would tempt many. But it seems to me that they'd be risking something very much like hell on earth. Their descendants might damn them to it. Let us begin by noticing that justice, as most people presently conceive it, permits or even requires that at least some crimes be punished as far after the fact as is now possible. Take Hans Lipschis, who had far-exceeded his life expectancy by 2013, when the 93-year-old made headlines. He was living in southwestern Germany at the time. Police arrested him there. Prosecutors wanted to charge him with murders perpetrated seven decades prior. He had served as a guard at Auschwitz.

Now imagine an alternative scenario. Technology advances more quickly than expected; an elderly Holocaust perpetrator uploads his consciousness next year, before being found out; then, five or six years from now, evidence of his crimes comes to light. I suspect that a strong majority would favor punishing him for his mass-murdering, and would quickly settle on some alternative to physical incarceration. Perhaps the consciousness would be denied new information, or the ability to interact with others; or perhaps there would be some degree of torment inflicted. For how long? With the consciousness of Adolf Hitler in our possession, 6 million years of disembodied punishment would still constitute just one year for every murdered Jew.

Yet Ghengis Khan, who perpetrated all manner of atrocity less than a millenia ago, would inspire some sympathy, I think, if it were discovered that his contemporaries had imprisoned his consciousness upon his death as punishment for mass murder. Were he discovered in mental chains after eight centuries of suffering, there would be demands for his release and debates about applying morality across time. And utilitarians would debate the consequences of his military victories across the centuries. Perhaps he'd be freed due to his unfathomably long punishment and the fact that his victims seem so remote to us. Or maybe he'd be forgotten in prison, as is done to so many individuals in our existing system.

These are wild thought experiments, but with them I only mean to illustrate a narrow point: Radical life extension would so scramble and confound our normal notions of justice that there's no telling how future Americans would react to the new reality. Historic monsters might be punished for 6 million years … or just three or four times longer than a 150-year sentence a U.S. court imposed on this obscure money-launderer. It's hard to speculate even when confining ourselves to descendants of ours, in this country, with moral codes closely resembling our own.

In fact, it isn't clear how we'd react right now. If today's Americans magically took custody of servers containing the disembodied consciousnesses of every figure ever mentioned in the country's newspapers, going back to the beginning, would we stop at punishing former Nazi leaders? Would there be a protest movement to hold Native American killers and slaveholders accountable? What about the folks behind the Tuskegee syphilis experiment? Or the city leaders of towns in the Jim Crow South that subjugated blacks?

Answering as a thought experiment is comparatively easy. Future Americans will face countless actual controversies just like those if whole generations start uploading themselves. And it isn't outlandish to imagine futures where the masses look at us with the disdain that we have for Bull Connor and his analogs. Perhaps the Americans of 2215, with their laboratory-grown synthetic meat, will look in horror at those of us who had animals killed throughout our lives in order to eat them. Maybe they'll regard a year's punishment per animal killed to be fair, with a 10-year enhancement for animals kept in cruel conditions before death. Maybe everyone in the fossil-fuel era will be condemned to punishments corresponding in length to the years of destruction that we wrought on a fragile planet.

Perhaps people who had abortions, or people who bore more than two children, will find themselves in disfavor. Perhaps an ISIS-like brand of sharia law will prevail, and most everyone who uploaded their consciousness in the West will be tortured for a millennia, until the course of history changes and new rulers take control. Of course, it's possible that future generations will be less punitive than I imagine. But will that last forever? In any case, humans will be forced to make a decision about whether to upload their consciousnesses before knowing what the far future holds. Admittedly, the living don't know the near future even today.

Nuclear war could come tomorrow. Those of us who survive it might spend the rest of our days in misery. But that misery would be relatively short. Radical life extension via mind uploads would seem to risk inconceivably long, possibly endless misery. And this holds even if no future generation deliberately inflicts that misery.

It's hard to imagine a civilization of highly adept network administrators who manage, century after century, to maintain uncorrupted data and functioning equipment. But maybe they'll excel.

So let us imagine inconceivably durable hardware that holds a human consciousness. This computer is attached to a generator that runs off of nuclear waste as it decays. Thus it is deep in a vault in the earth, but attached to the rest of humanity via cables. For 100 years, the disembodied mind revels in all she can explore: the sum of human knowledge; every other uploaded consciousness; and this universe of diverting data just keeps expanding with every day.

Then a super-volcano explodes. All embodied human life is extinguished. Most disembodied life is destroyed too. But not the computer deep in the bunker of nuclear waste. Its connections to other computers have been severed. But the consciousness endures with nothing stored locally save the original upload and McAfee anti-virus software that no one could figure out how to uninstall. As time wears on, this human endures the long twilight of the species on earth: 15.7 million years imprisoned with herself until the Iodine-I29 powering her computer is exhausted. As they say, "What a way to go!" Strange as it may seem, the most important hedge for those seeking immortality just might be declining radical life extension unless they're assured a suicide switch.

Adapted from The Atlantic