

TOWARDS A SOCIAL COGNITIVE THEORY OF RESILIENCE IN UNEMPLOYED PEOPLE

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Introduction

In the UK at the beginning of 2010, 1.16 million people were unemployed for up to six months and 787,000 were unemployed for over twelve months. There were 486,000 job vacancies, many fewer than unemployed people.¹ Lengthy unemployment can lead to adverse effects on health, such as depression, anxiety, and concern about physical symptoms (Linn/Sandifer/Stein 1985). Studying resilience, roughly defined as the ability to bounce back from negative disturbances, promises to suggest how to help people cope with unemployment. Lazarus (1993) draws an analogy with Hooke's analysis of the effects of stress on different kinds of metal. When a stressful force is applied, those who are resilient 'bend' like an elastic metal, without breaking, and when the force is removed spring back to how they were. Those who are unresilient are more like brittle metals which crack when too much force is applied.

Many factors influence resilience. This paper focuses on psychological factors. Wingo/Fani/Bradley/Ressler (2010) summarize various psychological operationalizations of the concept of resilience:

‘[...] positive affect despite chronic exposure to stressful life events, absence of lifetime psychiatric disorders following exposure to traumatic events, absence of [Post Traumatic Stress Disorder] following combat exposure, no time loss to illness following psychological stress exposure [...]

There have been attempts to measure resilience using questionnaires. One example is the Resilience Scale (Wagnild/Young 1993) which asks people to rate how much they agree with sentences such as ‘When I'm in a difficult situation, I can usually find my way out of it’, ‘I feel that I can handle many things at a time’. Another example with similar questions is the Connor-Davidson Resilience Scale (Connor/Davidson 2003). A resilience type has also been

1. From the Office for National Statistics, <http://www.statistics.gov.uk/cci/nugget.asp?id=12>

discovered for the widely used Big Five personality taxonomy (for a review, see John/Naumann/Soto 2008), typically assessed by questionnaire, consisting of the dimensions: openness to new experiences, conscientiousness, extraversion, agreeableness (essentially, being friendly), and emotional stability (defined in its negative, neuroticism, or emotional instability). The resilience type is defined as 'the ability to respond flexibly rather than rigidly to changing situational demands, such as stress, conflict, or uncertainty, and is related to the constructs of competence, social intelligence, and coping' (Schnabel/Asendorpf/Ostendorf 2002: 8). It manifests itself as emotional stability, extraversion (especially assertiveness and displaying positive emotions), average openness (though above average on more specific items concerning being able to generate ideas), average agreeableness, and strong conscientiousness.

These questionnaire-based approaches identify people who are resilient, but alone they cannot explain why those people identified are resilient. They also do not easily suggest interventions to help people. For instance advising an unemployed person just to respond flexibly rather than rigidly is unlikely to help. I will try to show that psychological theories of executive functions and intelligence can contribute to deepening our understanding of resilience in the context of unemployment. I introduce these concepts from psychology and how they may be relevant to resilience.

The nature of resilience from a cognitive perspective

The idea of a cognitive analysis is to view psychological processes as concerning information processing. This viewpoint is very general, and can be applied to any psychological process. 'Cognitive' here doesn't mean 'conscious' and doesn't exclude emotions. As Neisser (1967) emphasized in an early text on cognitive psychology, other viewpoints are necessary. For instance the cognitive perspective says nothing about phenomenology, what it feels like to be a person doing the processing, which is also very important for understanding resilience. Cognitive insights typically can only be applied to societal problems by showing relationships with social constructs (more on which later). Although the cognitive perspective cannot provide the whole answer, I think it has something constructive to offer to our understanding of resilience.

Before attempting a cognitive analysis, it is necessary to consider what kinds of tasks unemployed people need to solve and using what resources. First of all, why people have become unemployed is an important factor. Was unemployment forced upon the person because of workplace bullying or other psychological abuse (not uncommon in workplaces; see Hershcovis/Barling 2010)? Was it because of a general economic downturn, affecting

many other employees with similar skills simultaneously? Did the person become unemployed because they were, or were perceived to be, performing inadequately? Secondly, in what context is the unemployment situated? Financial insecurity, for instance, has a big effect of mediating the relationship between unemployment and poor health (Kessler/Turner/House 1987). Another important contextual factor is how much social support is available, for instance from friends and romantic partners. Thirdly, as how much of a surprise did the unemployment come? Someone who received several months' warning about upcoming unemployment is in a very different situation to someone to whom unemployment came as a complete surprise.

A major assumption has to be made at this point: work as it tends to happen in our society today is necessary. This is not uncontroversial. Much work in society is degrading, badly paid, low status, or actively damaging. Often the lowest status and worst paid occupations are the most necessary in society (consider for instance refuse collectors or the people who collect horse manure from the streets of Salzburg, and how life would be in their absence) and the highest status and best paid are the most damaging (consider hedge fund traders or weapons designers).

What skills do people who want to seek work need to cope with unemployment? In parallel to dealing with the very fact of being labelled 'unemployed', understanding the causes of having become so, and facing the demoralizing prospect of heading to the unemployment office to ask for money, people somehow have to find a way to become employed again. This implies a range of necessary skills, including: assessing one's competences; managing thought processes about status and identity; continuing to engage in basic activities such as shopping and maintaining self-hygiene; thinking of ways to reframe existing skills in new markets; thinking of resources to use in the search for new work; interacting with people in a positive way, i. e., to present oneself as employable and someone who would contribute to and integrate in a workplace; continuing to be a friend and romantic partner; coming to terms with inadequate competencies but without dismissing genuine skills; seeking help from others whilst still maintaining a sense of independence. This is a non-exhaustive list.

Executive functions are cognitive processes which allow new ways of behaving in order to adapt to new, unfamiliar, situations. Unemployment seems to be a prototypical example of such a situation. Executive functions are used when people generate new ideas (likely to be important for finding appropriate jobs), make plans (especially important in the absence of a job-dictated daily schedule), switch between different tasks (e. g., job hunting, being a friend, going to an interview, thinking about emotional reactions to problems), selectively ignore certain memories (e. g., of negative experiences in previous

workplaces or previous failures in job interviews). In psychology, one of the main ways to assess competence is through intelligence, ranging from perceptual competence to more abstract patterns of thinking depending less on percepts. Intelligence seems an important construct for understanding the very practical problem of how the skills of unemployed people can be reapplied in a new job. The next section introduces these concepts in more detail.

A sketch of relevant cognitive constructs

Executive functions

A range of psychological theories of executive functions have been proposed, one of the most famous of which is by Norman and Shallice (1980, 1986). At the core of the theory is the idea of action or thought schemata which can be thought of as scripts controlling 'overlearned' skills such as cycling to work, brushing your teeth, lifting a pint glass, and also routine aspects of jobs. The schemata are triggered by perceptual processes or, recursively, by other schemata, and many schemata can run in parallel. However sometimes schemata depend on a shared resource, e. g., one's hands, so cannot be run in parallel. In such situations, the contention scheduler steps in and chooses a schema to run. Finally the component of theory called the Supervisory Attention System (SAS) activates when attempting to engage in a less well-learned or completely novel activity, or when complex planning is required. The SAS is the component of the model most likely to be associated with conscious awareness of its operation. It seems also most likely to be required for resilient behaviours, typically required in unusual, novel, circumstances. Consider for instance someone who has had a job for 20 years and suddenly becomes unemployed. A long life of routine, including not only the time spent in the workplace but also routine at home, is dramatically changed. Or the less dramatic problem of having moved out of the parental home, left university, and being in search of work.

It is unlikely that whatever phenomena the SAS represents in the model it is a homogeneous process. Performance on tests tapping into SAS-like processes tend to show low correlations with each other (e. g., Duncan/Johnson/Swales/Freer 1997). Driven by tasks which do weakly correlate, a triad of executive functions has been hypothesized to exist (Miyake et al., 2000): *shifting* between different tasks, e. g., between local, detail focused, processing and global processing incorporating more background knowledge; *updating* working memory, i. e., temporary stores of information used for solving the current task; and *inhibiting* habitual responses, e. g., those modelled by Norman/

Shallice (1980) as being triggered by perceptual input. Although separable, there are weak correlations between these constructs from which it is possible to extract a common component of executive functions. Based on evidence from a behavioural genetics study, this shared component has been argued to be almost entirely determined by genetic processes (Friedman et al., 2008).

In executive functions theories there is the recurring idea of disengaging from the immediate environment and engaging in more abstract processing. For instance the gateway hypothesis (Burgess/Dumontheil/Gilbert 2007) distinguishes between stimulus-oriented and stimulus-independent thought, and postulates a mechanism for switching between the two. This ability seems important when faced with unemployment and its consequences. For instance going to the unemployment office, people will meet others who are miserable because of unemployment. Such stimuli, and their associations, offer no solutions for becoming employed and serve only to encourage a feeling of hopelessness, or, at best a vague motivation to avoid having to go again to the unemployment office. Switching to stimulus-independent thought is necessary to make productive steps, such as making best use of advisors at the unemployment office, to find work. Another example of a stimulus is a rejection letter following a job application. Again the stimulus itself offers little by way of solutions. Conversely, trying to make use of stimuli, such as job adverts, can be affected by unhelpful stimulus-independent thoughts, such as memories of previous failures.

Executive functions are psychological functions for controlling other psychological functions, i. e., they are meta-cognitive functions (Perner 1998; Fernandez-Duque/Baird/Posner 2000). The well-learned skills one has acquired through employment, which may be modelled as schemata in the Norman/Shallice (1980) model, often have to be reassessed and applied in different circumstances in order to find employment. It is here that meta-cognitive ability, for instance self-awareness of one's abilities and weaknesses, is likely to matter to be resilient. Another example would be recalling that one has successfully solved problems in the past. (If such a memory can be found.)

Intelligence

To understand the psychological conceptualization of intelligence requires going back to Spearman (1904) and his declaration of the 'law of the Universal Unity of the Intellective Function'. Spearman observed that many different tests of intellectual abilities, including exam results on various subjects as well as more traditional lab-based tasks, tended to correlate positively (though not perfectly) with each other. (See Table 1 on the next page for a recent example of a correlation matrix.)

		1	2	3	4	5	6	7	8	9	10
1	Vocabulary	–									
2	Similarities	.8	–								
3	Arithmetic	.6	.6	–							
4	Digit span	.6	.6	.6	–						
5	Information	.7	.7	.7	.5	–					
6	Comprehension	.7	.7	.6	.5	.7	–				
7	Letter-number	.6	.6	.7	.8	.6	.6	–			
8	Picture-completion	.6	.6	.6	.5	.6	.6	.6	–		
9	Coding	.6	.6	.6	.6	.5	.7	.7	.6	–	
10	Block design	.6	.6	.6	.6	.6	.5	.7	.7	.7	–
11	Matrices	.7	.7	.7	.6	.6	.6	.7	.7	.7	.8

Table 1: Examples of correlations between intelligence test scores (from Colom et al. 2002, rounded to one decimal place). A coefficient of 1 indicates perfect positive correlation, and 0 perfect absence of correlation.

Obtain someone's score on one test of ability and it is possible to predict (with varying degrees of noise) how they will score on other tests. Spearman (1904: 273) speculated that the correlations between the functions were 'wholly due to their being all variously saturated with some common fundamental Function (or group of Functions)' and devised a statistical procedure, factor analysis, to infer values for a single common factor which he named *g*, the general factor in intelligence. The important point is that it is very difficult indeed to come up with any kind of test of intellectual ability which doesn't correlate with another. Something has to be generating the correlations and making those with higher *g* better able to solve problems in a wide range of domains.

Statistically, since there are correlations, it is always possible to reduce the data in such a way that each individual test score is generated by a common factor plus the residual part not accounted for by the common score. Some test scores 'load' more highly than others on *g*, which means they are better predictors of the other test scores. What exactly is *g* a measure of? Many theories have been suggested: brain volume, nerve conduction speed, white-matter tract integrity in the brain, how well connected are parietal and frontal regions of the brain (Chabris 2007; Jung/Haier 2007). The emerging story is that *g* is a result of many factors. Plomin (2001: 138) draws an analogy with athletic ability, which 'depends on psychological (motivation), physiological (oxygen capacity) and physical (bone structure) processes, but athletic ability is not one of these things—it is all of them.'

Researchers have been interested in Spearman's *g* for a long time for good reason: it appears everywhere; it is predictive of much, including longevity (Gottfredson/Deary 2004) and social mobility (Deary et al. 2005); and whatever it is, it's highly genetic in origin, with some estimates for heritability in

adulthood as high as 80% (Deary/Johnson/Houlihan 2009). However g is not the whole story of intelligence. There are always test-specific factors which cannot be predicted completely by the shared variance. This is dramatically illustrated in autism spectrum condition, a developmental condition defined by impairment in social interaction and communication, and restricted activities and interests (American Psychiatric Association, 2000). Examining scores on Wechsler's intelligence tests (see Figure 1), people with autism do

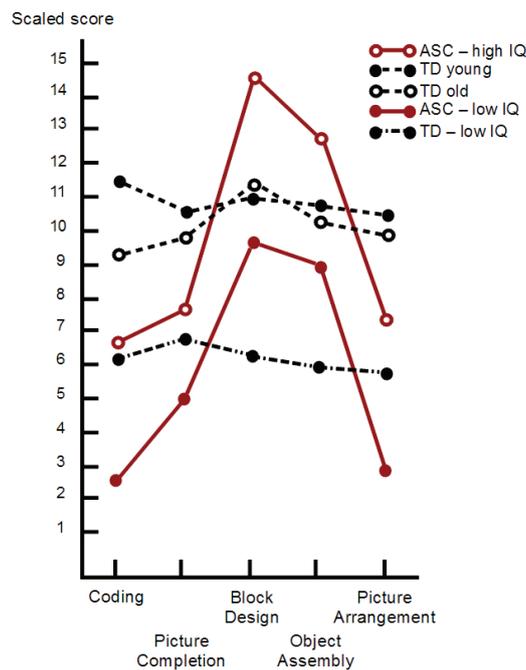


Figure 1: Peaks and troughs in people with autism spectrum condition (ASC) versus typically developing (TD) individuals (redrawn from Shah/Frith 1993). A higher score indicates better performance.

very well on tests called Block Design and Object Assembly, which require local, detail-oriented visuospatial processing, and less well on other tests (Shah/Frith 1993). These non-uniform profiles of abilities are not only present in people with a clinical diagnosis of autism. The autism spectrum extends into the typically developing population (Baron-Cohen/Wheelwright/Skinner/Martin/Clubley 2001). People with milder sub-clinical autistic-like traits show a similar, but less extreme, cognitive profile to those with clinically defined autism (Stewart/Watson/Allcock/Yaqoob 2009; Fugard/Stewart/Stenning, in press). Autistic traits are not the only clinical-like traits to be found in non-clinical populations. Another is psychosis proneness (Mason/

Claridge/Jackson 1995), also known to relate to how people process information (Sellen/Oaksford/Gray 2005; Young/Mason 2007).

These more specific investigations of intelligence are important for employment. Many jobs require specialized skills. For instance Johnson/Bouchard (2007) note that specific test scores often predict job success better than the general factor in intelligence, *g*. Image rotation, for instance, predicts success in physical sciences and fine arts better than *g*. They conclude:

‘What has perhaps not been recognized is that inclusion of verbal ability in assessments used to recruit individuals to those fields may actually act to impair efforts to select those with the talents most relevant to the jobs in question.’ Johnson/Bouchard (2007: 37)

Those with the most problems with verbal ability might also be those who find it especially difficult to get selected for jobs, irrespective of their job-specific abilities. It could also well be true that those with a less uniform profile of abilities are most affected by unemployment as it is more difficult for such people to find a way to reapply their skills, even if they have strong skills in a particular ability.

Intelligence and executive functions are not independent constructs. For instance considering the three-component model of executive functions introduced above, updating predicts performance on intelligence tests (Friedman et al. 2006); there is also a weaker relationship with inhibiting, and weakest of all with shifting (Friedman et al. 2008). Ability to resolve conflict, operationalized using an executive function test where one has to selectively ignore all but particular kinds of item, predicts performance on a test of intelligence (Kane 2003).

How can these theories help people become resilient?

There are individual differences in just about every psychological process; executive functions and intelligence are not exceptions. If these constructs do matter for resilience—and I believe that they do—then how can knowledge of their mechanisms help people to become more resilient?

As a first broad brush analysis, there are three ways, in principle, of achieving the goals of resilience. The first is *self*-dependent resilience, where people have developed the skills necessary to be resilient with little or no other assistance. This would be an idealized situation where someone has sufficient executive functions and intellectual ability to deal with all of the emotional problems of receiving the status of unemployment as well as productively

setting out to change their situation and find work. The second is *peer-dependent* resilience, where, although the individual does not have the necessary skills, they can receive support from peers who do. So perhaps people can help their friends to focus more on productive activities (broadly defined; having a chat could well be one). The third is *authority-dependent* resilience, where the individual relies on support from a professional, e. g., a psychologist, careers counsellor, or social worker. See Figure 2 for a pictorial summary of the types. Each will now be addressed in turn.

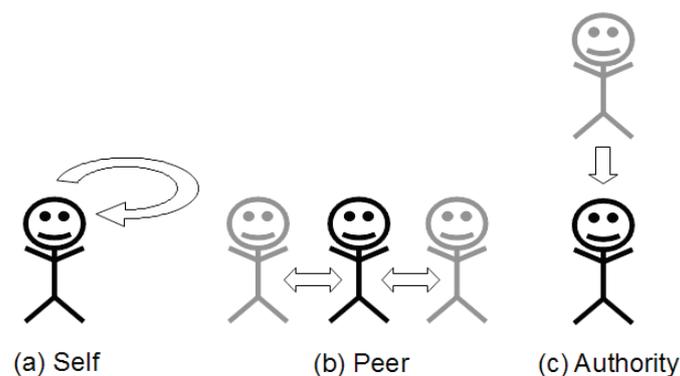


Figure 2: A triad of ways to be resilient.

Training or enabling self-dependent resilience

Can the required skills be trained, or enabled, so that unemployed people achieve self-dependent resilience? Research on how people learn abilities has a long history in psychology. Greene (1937) reports an early example of a study aiming to classify tasks by how large practice effects are. Tests showing the least improvement related to perceptual and motor skills. The next largest effects came from maze and arithmetical tests to which solutions could be found with some work given enough time. Finally the largest effects came from tests where the solutions could simply be remembered between practice sessions. The authors suggested that a subjective assessment of task complexity positively correlates with the training effect magnitude. Abilities which feel to us automatic, like visual perception, are difficult to train, but more complex-feeling tasks, such playing the harp or glassblowing, can be trained.

The pinnacle of practice effects is trying to find transfer to novel tasks. Such transfer would be indicative of an improvement in processes more

general than tested by the trained task, and could concern one of the more general factors of intelligence or of executive functions. Owen et al. (2010) performed one of the largest studies to investigate the general effects of practicing cognitive tasks. With the help of a BBC TV program in the UK, over 10,000 participants were recruited and practiced six web-based tasks for at least 10 minutes over a period of 6 weeks, three times per week. On average participants completed 25 training sessions. Before and after training, 'benchmark' tests, different to the training tests, were used to assess if successful training transferred to untrained tasks. A control group answered obscure questions, using whatever resources they required to find the answers, instead of training. The results were disappointing: although scores on the benchmark tests improved, effect sizes were relatively small and did not differ from those of the control group who did no training, so were interpreted as merely being due to repeating the benchmark tests.

As with all empirical studies, there are possible limitations to this one. The training took place in people's homes and was unmonitored by experimenters, so it is impossible to tell how seriously it was taken. However this possible criticism can be countered by the evidence of practice effects within-tasks. Perhaps the duration of the study was too short, after all people need more than 25 ten-minute training sessions to learn anything substantial on school or university courses, and improving general cognitive functions is likely to count as substantial. It is also possible that the control task of finding answers to obscure questions acted as a training task, i. e., wasn't really a control task, so the improvement of benchmark scores, though small, might still be meaningful.

Although there was no evidence of transfer between tasks, the results did show substantive training of the individual tasks. Measured using Cohen's *d* standardized effect size, the effects ranged from .7 to 1.6. Anything over .8 is considered large, so these results are very impressive indeed. It is not clear if such training relates to the meta-cognitive functions perhaps necessary to achieve self-dependent resilience, though it might mean it is possible to improve specific function required for a new job.

Sometimes transfer between tests is successful. Jaeggi/Buschkuhl/Jonides/Perrig (2008) investigated the effects of training on a challenging memory task, the *n*-back task, which is thought to test an executive function (Jaeggi/Buschkuhl/Perrig/Meier 2010). The task presents a sequential stream of stimuli, for this variant two stimuli simultaneously: one visual and one auditory. The participant has to decide whether the current stimulus matches one shown *n* positions back. The value of *n* was increased or decreased individually for each participant to ensure the task was demanding but still possible without making more than 3 errors. Two difficult tasks, known to load highly

on the general factor of intelligence, *g* (Raven's Advanced Progressive Matrices test and the Bochumer Matrizen-Test) were used for benchmarking. As for the study by Owen et al. (2010), training improved performance on the trained task, as inferred from the automatically adjusted difficulty rising from a mean of 3-back performance on the first training session to around 5-back by the 19th.² By the end, this increase transferred to the tests of , showing a reliable mean gain of nearly 5 points on the benchmark tests. The study also showed evidence that the training effect was 'dose dependent', with a roughly linear increase in the transferred score as a function of the number of training sessions and (by the 19th trial) no levelling off.

Interventions to improve performance on tasks need not involve long training. A study by Houdé et al. (2000) investigated the effects of a simple verbal instruction to help people overcome a perceptual bias on a reasoning task. The task allowed two qualitatively different styles of responding to be detected, so the analysis went beyond a simple score improvement. Participants were informed of a typical mistake people make, and were warned not to fall into the trap. This simple instruction shifted people towards the correct answer. In a study of uncertain reasoning where people seemingly succumb to a similar perceptual bias with the effect that an 'if' is interpreted as if it were an 'and', it was demonstrated that simply giving participants a long series of items, without any feedback, enabled some spontaneously to shift away from a perceptual-bias driven answer to the correct answer (Fugard/Pfeifer/Mayerhofer/Kleiter 2011). Both studies involve kinds of inhibition, an executive function. Here it seems that participants already knew how to solve the tasks (though perhaps they didn't initially know that they knew, meta-cognitively); they just needed a hint or some time to inhibit an automatic and wrong (though systematic) response.

A pleasant intervention has been found to improve a range of executive functions requiring no trip to the experimental lab: taking a 50 minute walk in tree-lined nature away from traffic and from people (Berman/Jonides/Kaplan, 2008). Compared to participants who were asked to walk down a busy street filled with traffic, those who walked in nature performed better on a test of memory (remembering digits in reverse order) and on an executive function task requiring participants to report the direction of an arrow in the presence of distracting incongruent arrows. Again, rather than training, this intervention appears to have had the effect of enabling available cognitive function.

2. Not all participants performed 19 training trials: see the original paper for the gory details.

Other results relevant to the issue of how to enable people's cognitive abilities suggest that how people think about problems might affect how successful they are at finding solutions. For instance rumination, thinking obsessively about a problem and feelings about the problem, can make it difficult to take the active steps necessary to solve the problem (Nolen-Hoeksema/Wisco/Lyubomirsky 2008). Often difficult problems require insight, a sudden feeling of knowing how to solve a problem usually preceded by a period of impasse (Bowden/Jung-Beeman/Fleck/Kounios 2005). A good way to encourage insight is simply to go to bed and get a good sleep (Wagner/Gais/Haider/Verleger/Born 2004). One explanation is that sleep facilitates the reorganization of knowledge (Stickgold 2005).

When self-dependent resilience isn't possible: peer-dependent resilience

As discussed above, processes supporting executive and intellectual functions are highly heterogeneous, suggesting that even if the common aspects are not helped by training (though the jury is still out on this issue) that does not rule out the possibility that training on individual components would be helpful. Peaks in intelligence, commonly studied in clinical conditions such as autism, show that people can have very strong abilities in particular domains and looking only at general, averaged, abilities is misleading. However it could well be that the general components, which are less easy to train, matter most for resilience. How can those who lack self-dependent resilience still achieve the goals of resilience?

We are all deeply dependent on one another. Social interaction influences the brain, and thus cognitive processes, to such a degree that Kusch (1999: 359) suggests some states of the brain are actually social states: 'real artefacts of our culture, [...] they predispose us to differ in the intensity, quality, and duration of some of our sensations.' Just about everything has a neural correlate, so concepts seen as cognitive might be strongly social in origin. In terms of causal chains, the social and the cognitive are difficult to separate. This is of clear importance for supporting peer-dependent resilience.

Fitzsimons/Finkel (2010) review evidence of various positive ways social interaction can initiate, control the operation of, and allow monitoring of cognitive processes for goal pursuit. To provide some illustrative examples, people automatically infer goals others are trying to achieve from their actions, and activate and pursue these goals themselves; treating a romantic partner as if they already possess a desired trait makes them more likely to acquire that trait; and reminding people that their romantic partner believes in their ability to achieve a desired goal can also improve performance. This can be taken as evidence that elements of executive functions are external-

ized and deeply dependent on peers. It also leads to the warning that who unemployed people are surrounded by will have a deep cognitive impact on how they cope with their situation.

To illustrate the positive benefits of social interaction and a feeling of connectedness, Baumeister/DeWall/Ciarocco/Twenge (2005) induced a feeling of social exclusion by asking participants to fill in a questionnaire and then later telling participants (falsely) that the results predicted they would probably end up alone in life. After the manipulation, a number of processes were affected, for instance making people persevere for a shorter time on a frustrating and unsolvable puzzle (mean of around 20 minutes versus nearly 30 minutes for control conditions). It also affected performance on a test of attention requiring participant to listen to two different speech streams in left and right headphones and write down words mentioned on the left stream containing an 'm' or a 'p' (mean of 36 correct answers versus around 42 for the control conditions). If inducing a belief in later aloneness has such an effect, then actual solitude is likely to have severe implications on cognitive processing. Conversely, feeling socially connected seems to have much benefit for cognition.

Towards a healthy conceptualization of authority-dependent resilience

For some, experts need to be called to enable authority-dependent resilience. To make sense of the role of experts, authorities on various subjects, it might help to turn to someone who is suspicious of authority. Bakunin (1916: 32 f.), one such individual, argues that we all need, temporarily, to 'bow before the authority of special [people]' because of our inherent inability to grasp all knowledge. He emphasizes the reciprocal nature of authority, 'Each directs and is directed in his [or her] turn'. The same need to turn to authorities implies their inability to know all truths: '[...] there is no universal [person], no [person] capable of grasping in that wealth of detail, without which the application of science to life is impossible, all the sciences, all the branches of social life.'

Cognitive psychology (as opposed to social psychology) has little to say about authority, but some studies of seemingly pure cognitive tasks have detected the influence of social factors related to authority. For instance Stenning and van Lambalgen (2004) investigated performance on an abstract reasoning task in which participants were asked to assume certain facts are true, but then one piece of information was presented as being either true or false and they had to decide how to determine which. They observed that there was a tendency for some participants to assume, in the context of other assumed truths, that this piece of information must also have been

true, without needing any evidence. Or at least, they felt it would be impolite to doubt the truthfulness of the experimental psychologist, in this case a bespectacled professor. This problem must arise in all situations in which someone receives advice from an expert. One strand of resilience must surely be to help people avoid falling prey to such biases. How is it possible to do this but simultaneously to enable authority-dependent resilience?

Studying those who are resilient might give clues for how to help others become resilient. Peer support might then be possible, removing the need to call in professional experts. The idea here is that analogously to how autistic people are authorities on visuospatial cognition, people who are unresilient may have various peaks of performance in certain domains. Some people are also authorities on resilience. The challenge is to arrange conversations between the unemployed and the resilient person in such a way that the person seeking help does not feel, and is not, completely dependent on the help-giver. A speculative idea is that it is possible to overcome the breeding of top-down authoritarian dependence by encouraging instead mutual dependence, finding ways such that those who are unemployed and seeking work can truly and honestly make a contribution to those who are helping them to be more resilient.

Finally, another instance of authority-dependent resilience comes from research, such as that reported in this paper purporting to delimit the possibility of training. The gold standard for trusting the soundness and utility of research is to run and replicate empirical studies, pushing the authority away from experts towards results which as objectively as possible demonstrate the efficacy of interventions. An analogy here can be drawn with what happens in logic classes. Although students rely on the authority of the teacher to learn how to perform logical derivations, they can always turn to a formal calculus, independently of the teacher, to verify that they are doing the right thing. Empirical science does not provide the certainties of proofs inside a formal logic, and data requires interpretation, but evidence provides assurances beyond blind trust in an expert, as does open debate of the interpretations of evidence, facilitated by the media.

Conclusions

I argued that the concepts of executive functions and intelligence are important for deepening our understanding of how unemployed people can become resilient. Admitting that people might be unable to achieve all of the goals of resilience alone, I pointed to the need to investigate in what sense social and cognitive functions are intertwined. Just as cognitive theories con-

tributed to cognitive behaviour therapy, which has much empirical support for its efficacy, perhaps social and cognitive theories can contribute to helping unemployed people become more resilient.³

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