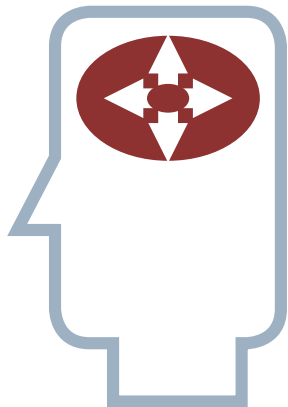


# Mindsets

## are not all the same



### ON THE FOLLY OF ENCOURAGING A GROWTH MINDSET FOR “A”, WHILE HOPING TO GET A GROWTH MINDSET FOR “B”

An individual’s mindsets affect the acceptance of and enthusiasm for developmental initiatives. But knowing what an individual thinks about the possibility of improving general domains such as “intelligence” and “character” is a poor substitute for knowing their mindsets about acquiring specific capabilities. If you want to encourage the adoption of a growth as opposed to a fixed mindset (see “Mindsets” below) in a development program, it is sensible to focus on mindsets about the specific skills being targeted.

#### **Mindsets**

*Someone with a “Growth Mindset” about a skill or attribute believes that it can be improved through effort and hard work. Those with a growth mindset frame difficult tasks as challenges, see them as opportunities to develop and approach them with enthusiasm. They attribute failure, if it occurs, to lack of effort and poor learning strategies.*

*If someone believes the opposite, that is that an individual’s ability is essentially determined at birth, they are said to have a “Fixed Mindset”. Someone with a fixed mindset is likely to believe that the goal in any achievement situation is to demonstrate how smart they are. If the task proposed appears to be difficult, they tend to avoid it. If they fail, their failure is attributed to lack of ability, not to insufficient effort<sup>1</sup>.*

#### **General mindsets are being used as surrogates for mindsets about specific capabilities**

In an attempt to encourage innovative behaviour, one large corporation encouraged its employees to embrace a growth mindset about intelligence – that is, to embrace the belief that intelligence can be improved through hard work. But getting your employees to accept that intelligence can be improved will not necessarily make them open to learning how to be innovative.

In a recent survey<sup>2</sup> (see the Appendix) 178 managers were asked whether they thought that intelligence can be improved (“You can develop your intelligence if you really try”) and, at the same time, whether being innovative is inherited (“The ability to generate innovative ideas and solutions to problems is more likely to be inherent than learnt”). From the survey, the average response to four questions

## MINDSETS ARE NOT ALL THE SAME

about the origin of intelligence and the belief about innovative behaviour had a statistically significant correlation of 0.36 ( $p < 0.001$ ). But the frequencies of responses were:

Innovativeness \ Intelligence	Fixed	Growth	Total
Fixed	42	20	62
Growth	28	55	83
Total	70	75	145

*(Note that the missing 33 responses belong to those whose average on the four items relating to intelligence was between the cutoff points for Fixed and Growth.)*

If an organisation wants to use an employee's mindset about the improvability of intelligence as a surrogate for their belief that innovative behaviour can be learnt, they will be making an unreasonable number of errors. From the table it can be seen that the percentage of respondents who had different mindsets about intelligence and innovativeness was 48/145 or 31%. If all of those with a fixed mindset with respect to intelligence were persuaded to change to a growth mindset about intelligence but their other beliefs remained unchanged, then 70/145 or 48% would still have a fixed mindset with respect to innovative behaviour.

In another organisation a development program was introduced to persuade employees to have a growth mindset about character ("Everyone, no matter who they are, can substantially change their basic characteristics") in order that they would then be open to developing their resilience. Such an approach is based on the unstated assumption that when someone believes that character can be changed they will then also believe that resilience can be learnt, an assumption that the results of the survey show is not valid.

The survey included four questions about the possibility of changing character as well as a single question about resilience ("The ability to be resilient in the face of rejection, setback or resistance is more likely to be dependent on training and experience than on personality").

The correlation between the responses to this question and the average of the responses relating to character was 0.18 ( $p = 0.015$ ). The frequency table of responses was:

Resilience \ Character	Fixed	Growth	Total
Fixed	28	20	48
Growth	42	45	87
Total	70	65	135

*(Note that the missing 43 responses belong to those whose average on the four items relating to character was between the cutoff points for Fixed and Growth.)*

In this case, the percentage of participants who would be wrongly classified when a mindset about character is used as a surrogate for a belief about the possibility of improving resilience is 62/135 or 46%. If all of those who had a fixed mindset about character were persuaded to shift to a growth mindset with respect to character without work being done to change their view of resilience, there would be 70/135 or 52% who would be likely to resist making an effort to develop their resilience.

Encouraging growth mindsets about broad, general characteristics will be ineffective when what is needed is a commitment to becoming competent in one or more specific capabilities. These two organisations would have been better advised to work with their employees on the mindsets that relate to the specific capabilities they wanted them to develop.

**Encouraging growth mindsets about general characteristics will be ineffective when developing specific skills**

That having been said, mindsets about general characteristics have been shown to be important to students' performance at school. In an experiment<sup>3</sup> to measure the association between implicit theories of intelligence and helpless behaviour in response to failure, 5th Grade students' beliefs about intelligence were first measured. They were then given

three easy puzzles to solve. They were later presented with three similar puzzles that were too difficult to solve in the time allocated. After that they were given an easy puzzle again. The response of the students to the final puzzle was strongly related to their beliefs about intelligence. Those with a fixed mindset with respect to intelligence displayed maladaptive, helpless behaviour. However, while this effect of beliefs may hold in a school setting, it does not hold for adults performing work-related tasks. Mindsets about intelligence do not necessarily predict an individual's performance in learning new, work-related skills.

### **Beliefs about the improvability of intelligence are not good predictors of outcomes on work-related tasks**

A recent study<sup>4</sup> looked at how the mindsets of accounting students about intelligence affected their effort and performance. After self-reporting their beliefs, individuals were exposed to a sequence of financial accounting problems, an easy one first, followed by a very difficult one, followed by an easy one. This design was chosen to mimic the experimental protocol that was used with children in the research mentioned above. The expectation was that those accounting students with a fixed mindset would exert less effort and achieve poorer performance on the third problem compared with those with a growth mindset.

However, neither the amount of effort nor the accuracy of the solutions was different for the two groups of students. This result was replicated when other students were assessed with a difficult auditing exercise. There was no discernible difference between those with different mindsets about intelligence on either their effort (in this case, the total time taken), the accuracy of their work or the confidence they had in their own judgment.

### **One explanation of the above result could be the use of a general rather than a specific mindset to predict performance**

Given the evidence of the responses of school

children to a challenge, how is it possible that mindsets about the nature of intelligence have no discernible relationship to effort or performance on accounting problems? One possible explanation could be that beliefs about intelligence are too general to predict performance on specific work-related tasks.

Dweck, Chui and Hong have pointed out that beliefs are domain-specific<sup>5</sup>, but their interpretation of 'domain' is very broad. Thus, for example, they argue that mindsets about the origin of intelligence will inform attitudes and behaviours within the intellectual domain. What belongs to the intellectual domain is not made clear and it would seem that such a domain is too general to generate predictive power.

Even when the mindsets measured are restricted to more specific, but still quite general, domains of intellectual endeavor such as "mathematics" and "science", there is no evidence of association with outcomes. For example, beliefs about mathematical and scientific abilities did not predict performance in a psychology degree<sup>6</sup>. Beliefs about the origin of mathematical abilities did not predict attitude to and improvement in a university introductory statistics course<sup>7</sup>.

The fact is that mindsets can be very specific. When mindsets are assessed relative to the specific skills being acquired, they predict learning and/or performance. This is true for the generation of creative ideas, for learning from a simulation exercise, for the writing of computer code, for the acquisition of negotiation competence and for the improvement of writing skills.

### **Beliefs about the acquisition of specific skills do indeed predict performance**

Mindsets have been shown to predict learning and/or performance on a work-related task only when the mindset measured is specific to the task. This is demonstrated in a number of studies that directly compare the relationship between performance and a growth mindset about intelligence with the relationship between performance and a growth mindset

**Specific mindsets predict learning and/or performance on work-related tasks**

for a specific attribute.

For example, in an experiment<sup>8</sup> to determine the consequences of believing that creativity is an inherited

attribute, self-reports of participants' mindsets about whether intelligence and creativity can be learnt were collected. Though the two mindset scales were correlated ( $r = 0.5$ ,  $n=233$ ,  $p < 0.001$ ), they related differently to the creative outcome variables measured. The beliefs about the origin of creativity were significantly correlated with a participant's stated interest in acting creatively and with their (externally assessed) creative problem solving skills. The mindsets about intelligence, on the other hand, were not significantly correlated with these measures.

Another study looked at the relationship between mindsets and performance on a 'serious' game, similar to those used in business simulation exercises. The participants reported their beliefs about intelligence as measured on a four-item scale<sup>9</sup>, as well as their beliefs about the possibility of learning gaming skills. When those participants with a fixed mindset about intelligence were compared with those who had a growth mindset, there was no difference between the groups on any of five outcome variables. On the other hand, gaming mindset was a significant predictor for positive affect and performance. The authors state<sup>10</sup>: "These results support the use of domain-specific mindset measurements over general mindset measurements".

A further study<sup>11</sup> looked for predictors of the amount of practice (a surrogate for effort) students completed in a computer programming course. Beliefs about the improvability of intelligence were measured by five items taken from one of Dweck's instruments<sup>9</sup>. They also recorded beliefs about programming aptitude, measured by adapting the five items to this specific domain. While the two scales were significantly correlated ( $r = 0.25$ ,  $n = 73$ ,  $p = 0.034$ ), the beliefs about programming aptitude were much more effective in predicting the amount of practice reported. The authors note that, despite

the high correlation between the two belief systems, when individuals were assigned to fixed or growth mindsets in the two domains, 33% of them had discordant results.

The value of knowing beliefs about the acquisition of specific skills is confirmed in other studies that did not include an explicit measure of growth mindset with respect to intelligence. For example, performance in negotiation exercises, measured in terms of creating and capturing value, is higher when the negotiator holds a growth view of negotiation ability<sup>12</sup>. After attending a training program the improvement in the quality of a child's writing was higher when the strength of their belief in the possibility of learning writing skills was stronger<sup>13</sup>.

**Developmental initiatives can be made more effective by taking mindsets into account**

Mindsets can affect the way someone approaches a developmental opportunity, both for good and for bad. If someone believes that the capabilities that are the focus of the program can be developed, they are likely to expend more effort and to persist when there are difficulties. If someone believes that the capabilities are inherent and cannot be learnt, they are unlikely to be enthusiastic about the program, to devote the time and effort to it that is required and to persist when the going gets tough<sup>14</sup>.

Using knowledge of mindsets in advance of a development program so that they can be addressed and changed when necessary will result in more engaged participants and better

**Addressing mindsets before development will result in better engagement and outcomes**

outcomes. But do not think that there is a magic instrument that will inform about all mindsets at the one time. Mindsets are not all the same.

Furthermore, it is straightforward to probe the mindsets of participants about the specific capabilities they are expected to develop. A pre-program intervention can then be designed to

change mindsets if and when necessary. To get the most out of any program an organisation needs to segment the potential participants on the basis of their mindsets and be willing to spend time before the program to change the beliefs of those participants for whom it is appropriate.

**A warning: Knowing someone’s mindset is only the beginning**

Finding out an individual’s mindset about acquiring competence in a specific capability is only the first step. Those with a fixed mindset need to be persuaded that it is indeed possible to learn the capability in question, though this is not as simple as some would have you believe. Simply using a combination of lectures and texts provides no significant change to previously held beliefs<sup>15</sup>. Even the online training program developed by Dweck,

“Brainology”, showed a short-term but no long-term change in mindset when tested experimentally<sup>16</sup>. However, one way that beliefs can be changed is through the use of counter-attitudinal advocacy, which is neither a simple nor a fast process<sup>17</sup>.

In fact, changing mindset is not, in and of itself, the ultimate goal when preparing for a developmental program. Even when an individual has changed from a fixed to a growth mindset with respect to some attribute, what is really needed is a personal belief that they themselves can develop the attribute. Once someone believes that they can learn they will then have to be motivated to do so, to want to undertake development and to spend the time and effort that will be needed. Only then will they be ready to develop. This is illustrated for the example of Resilience in Figure 1.

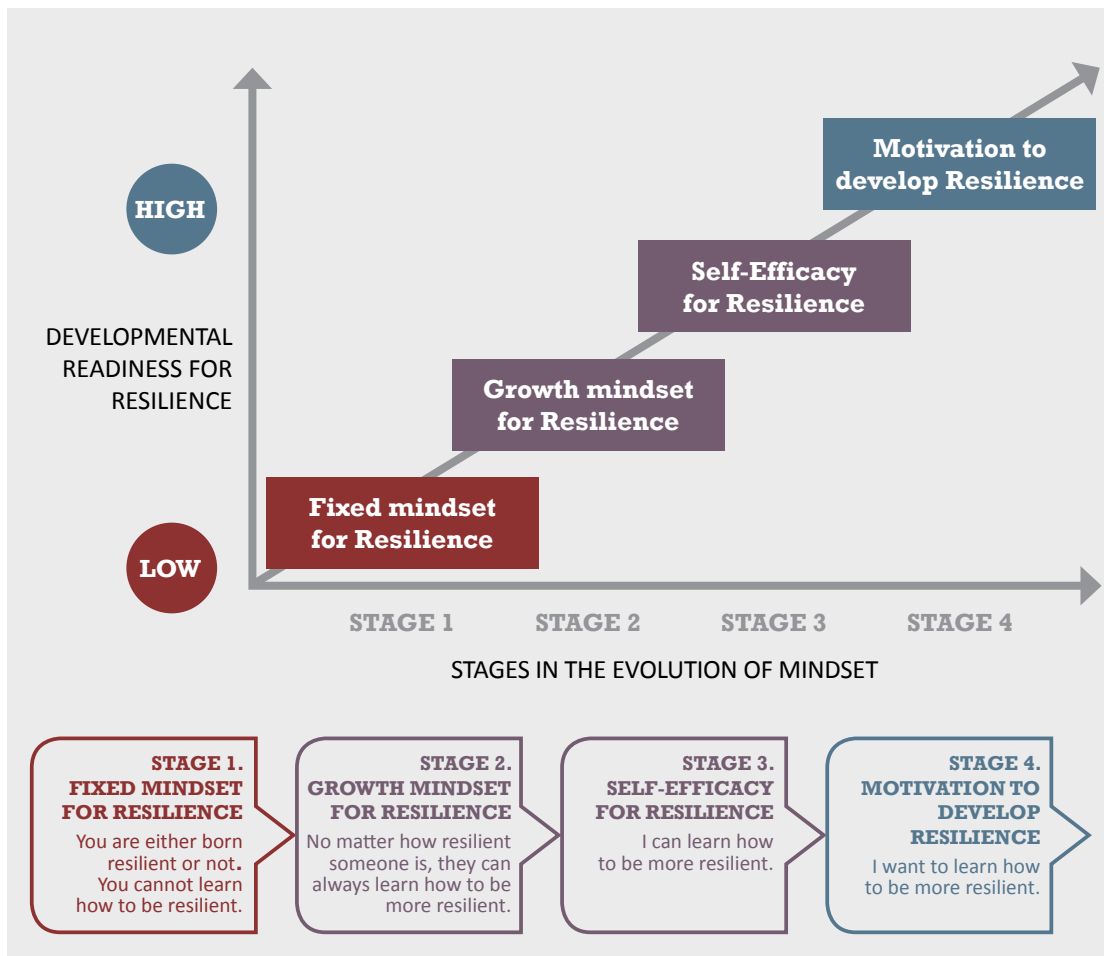


Figure 1. Four stages on the path to developmental readiness (illustrated for resilience training).

If someone is already displaying resilient behaviour but does not believe their resilience can be improved, this is generally not an issue. Provided they are resilient enough to satisfy the organisation's requirements, they do not need to undertake training. Doing so would be a waste of time for them and a waste of resources. But, it will be an issue if the individual concerned is a manager who is expected to take responsibility for the development of their subordinates.

If a manager doubts the value of resilience training, they are unlikely to recommend and support it for their team. Because of this, it is important to change that manager's mindset so that they believe that resilience can be improved even if they believe that they themselves do not need to improve their resilience.

### **Note that general mindsets are important when managing (as opposed to being developed)**

We have argued that when developing individuals their mindset about specific capabilities should be measured and, when necessary, addressed. This does not mean that mindsets about general domains (intelligence, character) have no place in organisations. It is important for managers to have a growth mindset about these. A growth mindset about intelligence will predispose a manager to invest time, effort and money in the development of their subordinates. A growth mindset about character will enhance a manager's capacity to notice behavioural change<sup>17</sup>. It will also increase the likelihood that the performance appraisal process they use will be seen as procedurally fair<sup>18</sup> and that they will be perceived as effective coaches<sup>19</sup>.

*Geoff Eagleson can share these and other insights with innovative organisations as they design their own performance development initiatives.*

### Appendix

#### **A recent survey showed that beliefs about capability development are strongly dependent on the capability**

A survey was constructed that asked respondents for their beliefs about the possibility of learning some 27 specific leadership capabilities. The capabilities were representatives of four well-established categories: Personal Leadership, People Leadership, Results Leadership and Business Leadership. For each of the capabilities a statement was written that claimed either that it can be acquired or that it depends solely on genetics. In this way, a total of 27 statements were generated stating either that a capability can be learnt (“Being a good judge of people is more likely to be a result of past development initiatives and experience than a reflection of personality”) or is innate (“The ability to think strategically is more likely to be inherent than learnt”)<sup>2</sup>.

Respondents were asked to indicate how strongly they agreed or disagreed with each of the 27 statements on a 6-point Likert scale. The answers to each question were reverse-scored where necessary and coded from 1 to 6 before being analysed. A high score (greater than or equal to 4) indicates a belief that a particular capability can be learnt; a low score (less than or equal to 3) indicates a belief that one’s potential for that capability is essentially fixed at birth, that it is more likely to be a consequence of genetics than of effort.

In the first trial of the survey a total of 178 responses were obtained. The respondents came from two groups: 138 senior managers, belonging to the same multinational corporation, who had been chosen to attend a leadership development program in 2014 and 40 managers from a variety of other organisations.

The data collected from the survey confirm that an individual’s beliefs about leadership capabilities can be different for different capabilities. Also, the capabilities that were assessed differed in the extent to which they were considered difficult to acquire. As a rough rule, those relating to the leadership of ‘self’ were thought to be more likely to be innate. For example, only 50% of the respondents thought that it was possible to learn self-awareness. On the other hand, the capabilities thought to be most able to be learnt were those relating to the achievement of results: for example, the identification of drivers of performance (100%), the setting of clear goals (97%), and holding subordinates accountable (96%).

As part of the survey a four-item instrument that measures mindset about intelligence as well as a four-item instrument that measures mindset about character<sup>9</sup> were included. Using the algorithm described by Dweck, Chui and Hong<sup>5</sup> any respondent with an average score on the four statements about intelligence (character) less than or equal to 3 was deemed to have a fixed mindset with respect to intelligence (character). If their score was greater than or equal to 4, they were deemed to have a growth mindset.

In the case of specific capabilities, the only possible responses were one, two, three, four, five or six. If someone scored three or less, they were considered to have a fixed mindset with respect to that capability. If they scored four or more, they were considered to have a growth mindset. Thus the survey allows an individual’s beliefs about intelligence (character) to be compared with their beliefs about the possibility of learning specific leadership capabilities.

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