

Appendix 1

The *Re-Think* research

STEPHEN STEINHAUS¹ AND NIGEL BARLOW

How do more creative people differ from those who are less creative? What triggers creativity, under what circumstances does it thrive, and how do people foster high levels of innovation? What value and impact does creativity truly have? To find out, we conducted survey research. This provided us with hard data to assess some of the initial hypotheses behind *Re-Think* and explore creativity further.

The web-based survey included 39 multiple-choice questions and nine open-ended questions. Overall, 400 surveys were distributed. Survey respondents included 114 people aged 17–75, living in ten countries, mainly Europe and the USA. The research findings are presented and discussed below.

Given that all of this research is based upon single-source, self-report data, the findings should be investigated in follow-up research. However, many fascinating initial findings and insights did emerge from

¹ Stephen Steinhaus is the principal of HR Alignment Consulting Ltd, a Chicago-based talent management consultancy specializing in HR analytics, process development, assessment and coaching.

the data. This strongly supports the profile of the creative re-thinker described in *Re-Think*.

In accordance with the basic tenets of *Re-Think*, the vast majority of respondents (82 per cent) thought that creativity was highly important in day-to-day work and activities (not merely something for creative 'types' in the arts, research and marketing). However, only 29 per cent had received any formal training or coaching on creativity and creative problem solving. Interestingly, 75 per cent of the survey respondents reported a tendency to rely strongly upon intuition when problem solving.

CORRELATIONS BETWEEN CREATIVITY AND KEY TRAITS

First, we investigated the relationship between different personal traits and creativity. A Creativity Index (CI) was developed by summing responses from four² of the thirty-nine survey questions. The CI was then correlated with responses to other questions on the survey. Statistically significant findings suggested the relationships between creativity and key traits presented in Table A1.³

The magnitude of the correlations strongly suggests that the factors presented in Table A1 distinguish the more creative from the

² The CI was based upon the following questions: [(Compared to others, I often engage in creative problem solving) + (People I work with say compared to others I come up with creative/fresh solutions) + (People outside work say compared to others I often come up with creative solutions) + (I tend to be considerably more creative when solving problems than others)]. Values summed were: 5 = strongly agree; 4 = agree; 3 = somewhat disagree; 2 = disagree; 1 = strongly disagree.

³ The correlations obtained from the survey responses suggest each of the relationships in this table. Correlations greater than 3.5 are listed as exceptionally high, 3.0–3.5 are very high and 2.5–3.0 are high. All were statistically significant.

less creative types. These characteristics of a successful re-thinker are explored in *Re-Think* with practical suggestions for maximizing those tendencies. One of the correlations suggests that more creative people feel there is more opportunity to be creative in their occupations. To some extent, this is indicative of the premise that creativity is not fully used in many jobs. So, there appears to be considerable *headroom* for re-thinking in occupations where it has not conventionally been tapped.

Table A1 Relationship between creativity and key traits

The more creative a person is (as indicated by the CI), the more likely they are to...	Correlations
... encourage others (e.g., co-workers, partners and children) to creatively re-think issues when problem solving	Exceptionally high
... take pride in their ability to generate alternate solutions to problems	
... believe their creative approach significantly enhances solutions in their day-to-day problem solving	
... believe their creative approach impacts their success	
... believe there is a lot of opportunity to be creative in their occupation	
... have a preference for thinking 'Why not?' or 'What if?' rather than 'Yes, but' when they hear an idea that is new to them	Very high
... be very deliberate about setting aside time for thinking and re-thinking issues when problem solving	
... believe they are more successful than the average person in their occupation	
... imagine the worlds of possibilities beyond what they currently believe	
... follow through and act on their big ideas often	
... seek and periodically attain moments of in-depth insight ('eureka' moments) when problem solving	High
... believe there is generally a better way to do things than has been done in the past	
... rely strongly on their intuition when problem solving	

POTENTIAL AND POWER OF CREATIVITY

It is often said that we use a relatively small proportion of our minds in day-to-day activity. The same can be said about the creative side of our minds. Responses to several questions on the survey were very revealing about the potential and power of creativity:

- 99% agreed that people could be significantly more creative in their approach to problem solving;
- 95% agreed that creativity yields successful solutions that would not have been found otherwise;
- 90% agreed that creativity has its place in day-to-day problem solving in fields outside areas such as the arts, research and marketing;
- 89% agreed that creativity significantly enhanced solutions in their day-to-day problem solving;
- 82% agreed that there is generally a better way to do things than what has been done in the past;
- 81% agreed that their creative approach has been a key factor in their success; and
- 73% agreed that there are many 'new things under the sun'.

Overall, the vast majority of respondents agreed that creative energy is a powerful force that drives solutions and success. In addition, there appears to be substantial potential for tapping our creativity considerably more than we do.

THINKING ABOUT CREATIVITY – THE QUALITATIVE SURVEY

The answers to open-ended questions on the survey provided rich qualitative information. This essentially provided us with an opportunity to open up and peer into the minds of survey participants to clarify:

- (a) criteria for being a creativity master
- (b) noteworthy creative leaps
- (c) creativity triggers
- (d) energizing creative contexts
- (e) creativity kick-starters
- (f) pinnacles of creative endeavour
- (g) support from others
- (h) the ultimate value of creativity

Here is the qualitative data from each open-ended question in the survey.

Criteria for being a creativity master

When you think of creativity, who are the first two people, famous or otherwise, who come to mind?

The clear ‘winners’ in this section were Albert Einstein and Leonardo da Vinci, who were each mentioned over 15 times. Richard Branson, Steve Jobs, Isaac Newton, Edward de Bono were next, each being mentioned five times. Additionally, five respondents mentioned their mothers, and another five mentioned other family members.

Some of the reasons why ‘the most creative people’ were mentioned are provided in Table A2. These points are very telling about the criteria people use to identify the most creative people they are aware of. It

appears that the more these criteria are present, the more opportunities there are for highly creative solutions to emerge.

Table A2 Traits of creative people identified by survey respondents

Extraordinary: Developed theories in dimensions nobody could have thought of (Einstein). Asked 'what if?' and 'why?' (Einstein)		
Resourceful: Made rice stretch (mother)	Vision and guts: Great vision, guts and intuition (Kamprad, founder of Ikea)	
Going out on a limb: Achieved so much when all could have gone horribly wrong (Woodroffe, founder of YO! Sushi). Did what was sometimes impossible (Gates)	Provocative: Was thought-provoking, stimulating, dangerous, exciting and challenging (Lennon and Dylan)	
Perspective: Saw the world the way no one else did and explained it to others (Einstein). Saw art from a different perspective (Picasso). Saw and illustrated the absurdity of otherwise ignorable solutions (Gallagher, comedian)		
Expression: Conveyed emotion through abstract concept (Kandinsky)	Entertaining: Turned the practical into fun (Philippe Starck)	Radical: Changed the world with his theories (Einstein)
Simplicity: Entertaining and single-minded in terms of communicating (Volkswagen ad). Took simplistic and good ideas (de Bono)	Perseverance: Articulated the absurd and challenged preconceived thinking (Heath Robinson). Refused to let go of ideas even against opposition (Einstein). Kept his belief and persevered (Dyson)	
Commercial: Has a different philosophy towards business and ideas (Jobs). Understands what people want and gives it to them (Madonna)		
Imagination: Created an alternate world from nothing (Disney)	Visionary: Was centuries ahead of his time (da Vinci)	
Out-of-the-box: Started from scratch and saw all opportunities (Kamprad). Thought of out-of-the-box, un-orthodox solutions and was unique and visionary (numerous)	Rigour: Applied rigour to finding new ideas and solutions (Einstein and Michelangelo)	

In some cases, the criteria mentioned apply only to a few of the creative thinkers mentioned (e.g., entertaining, commercial, etc.). However, in most cases the criteria mentioned for one of the great creators are also common to others. Common characteristics among these great creators include a dramatically different way of looking at the world, seeing out-of-the-box alternatives, developing a unique vision for the future, challenging the status quo, and going out on a limb to try something that was previously thought impossible.

The research supports the idea behind *Re-Think* that we all have the capacity to be creative. This is reflected by many people identifying colleagues or relatives in their list of most creative people. We particularly like the response, ‘My mother and Bill Gates’, and were touched by this one: ‘My mother first. We had a big family with little income and she managed to feed, clothe, and mentor us all. In her words, she could always “make rice stretch”.’ There’s a re-think!

Noteworthy creative leaps

What’s the most striking example you can think of – personal or famous – of someone making a creative leap through intuition?

A diverse group of creative endeavours emerged, from DNA to Velcro! PC computing (including iPod and the Internet) and Columbus’ discovery of a round earth each came up numerous times. Other key examples cited included the discoveries of: (1) the wheel, (2) the DNA model, (3) splitting the atom, (4) theory of relativity, (5) space travel, (6) piston rings, (7) video recording algorithms, (8) Walkman, (9) Post-its, (10) Velcro, (11) Google, (12) e-Bay, (13) stomach bacteria causing ulcers, (14) wealth creation, and (15) alternatives to traditional airlines. This list clearly shows that creativity and re-think have places in all aspects of our lives and endeavours.

One respondent said, ‘Columbus knew that he would find something beyond the horizon, contrary to all “knowledge” at the time.’ It is this

confidence of something beyond the horizon that can motivate many of us towards incredible discovery beyond our everyday perspective.

Creativity triggers

What factors have you found to be most effective in triggering your creativity?

It is often said that ‘necessity is the mother of invention.’ Some of the survey respondents wrote that this was, indeed, what was behind creativity. Table A3 provides the variety of creativity triggers mentioned and the general themes that emerged.

Table A3 Creativity triggers

Necessity: Failure of existing solutions	Pressure: Stress, urgency, chaos
Dealing with the unknown: Having to do something completely different without knowing the pathway, situation without an obvious solution, asking ‘What if?’ and thinking beyond what has worked before	
Blue Sky: No rules, being allowed to come up with the most stupid idea and then to run with it	Teamwork: Encouragement, rapid brainstorming, borrowing ideas, like-minded individuals
Intuition: Childlike approach, not caring what others think, simplification, curiosity	Tension: Fighting with people
New experience: Multiple experiences, openness, exposure to new cultures	Passion and vision: Stimulating problems, passion about subject matter, feeling that there must be a better way, helping others
Perspective: Seeing things from other sides, upside-down thinking	Targets: Challenging targets, lack of targets
Quiet Time: Meditation, peace, first impression, beautiful environment	Humour and attitude: Fun, laughing, being silly about possibilities
Input from others: Reading, conferences, interviewing, writing, presentations, research	Drive: Being in the zone, desire to succeed

As we found in other areas, Table A3 shows that we all have different triggers, some of which are contrary. For instance, some people prefer a quiet and peaceful space, while others prefer pressure and chaos. Some need tension, while others prefer a more harmonious and supportive teamwork. Some take a blue-sky approach, while others prefer structure. Many creativity triggers are common across most, if not all, people (e.g., necessity, new experiences, input from others). The important thing here is that each person identifies and optimizes the triggers they find most relevant and motivating.

Energizing creative contexts

Where are you when you get your best ideas?

There is a widely accepted notion that creativity requires the context of the *three B's* – the bus, the bed and the bathroom. Einstein awoke from his sleep to discover the theory of relativity. Archimedes recognized the theory of displacement while taking a bath – and ran through the streets yelling ‘Eureka, I’ve got it.’ Similarly, many of our survey respondents said that they got their best ideas:

- *In the bus.* Car, plane, travelling, walking home in a tree-lined street on a cool night with no traffic.
- *In the bed.* Drifting to sleep, sleeping, trying to fall back asleep at 3:00 a.m.
- *In the bath.* Shower, washing, bathing.
- *In the kitchen.* Peeling potatoes, cooking, washing dishes, early in the morning with a cup of coffee.

- *Through recreation.* In the gym, gardening, horseback riding, walking, jogging, mowing the grass, cycling, camping.
- *Through other relaxing activities.* Drinking wine, reading, playing solitaire, watching TV, on holiday, at the pub.
- *During mentally engaging events.* At meetings, seminars, workshops, hearing other creative types, in discussions with others, building on others ideas, with an engaging colleague.

A few of our respondents said 'at my desk'. However, the vast majority said 'anywhere but at work', with many specifying *not* 'at my desk' or 'in the office'. Having some distance from the problem being mulled over seems to help and is captured by the response: 'Anywhere, but not trying to generate ideas.' It is intriguing that there is an unexpected value in boredom, as observed by the professional who said she gets many of her good ideas 'in boring internal meetings'.

Creativity kick-starters

What are the three most important things you do when you solve problems creatively?

Our respondents offered a variety of different approaches they use to generate creative approaches and solutions. This shows that people are often quite deliberate about ways of releasing their creativity. How they achieve this is summarized in Table A4.

In many cases, what enables creativity is the knowledge of how to unlock the door and kick-start creativity into action. People who are not typically creative often simply do not know how to get the process started. As the table below indicates, there are numerous ways to get creativity flowing. Once it starts to flow, as evidenced in many groups we work with, it can be almost impossible to turn off – stopping it can be like trying to cap an erupting volcano.

Table A4 Creativity kick-starters

Research: Determine information needed, design methodology, look at best practices		Analyse: Find the real cause and deep roots, define the essence, evaluate pros and cons, don't make judgements, look for synergies
Find Time: Calendar time, free up time for mundane activity	Stay positive: Think positive, 'no' is forbidden, get energized, laugh, have fun	Outcome focused: Visualize the outcome, go beyond short-term fixes, imagine what success looks like
Incubate: Take time out, relax, focus the mind, think, write, draw, envision, sleep on it, keep turning it over in mind, put mind in free-flow		Imagine: Dream, know that there is the right solution waiting to be discovered, stay open, imagine the best solution, look at the edges and why it works sometimes, ask what ifs
Pressure: See the issue as a problem, get worried about the problem, think quick, panic for a while, work under pressure		Alternatives: Challenge assumptions, map out options, seek a range of answers, focus on one or two pieces of information, evaluate upside and downside
Involve others: Brainstorm, share ideas, listen, speak to someone you trust, 'get someone to challenge and tear my idea to shreds so I can rebuild it', use a winning team		

Pinnacles of creativity

What is your favourite example of someone re-thinking their life or a problem and successfully pursuing their solutions?

The common themes for major re-thinks that emerged were: (1) responding to tough times, (2) intense focus, (3) challenging the status quo, (4) incredible courage, and (5) dramatic reinvention. Famous examples included Nelson Mandela, Bishop Desmond Tutu, Gorbachev, Gandhi, Apollo 13 engineers, George Soros, Miles Davis, Charles Handy, Leonardo da Vinci, Gauguin, Cokie Roberts, Bill Gates, Steve Jobs, Colonel Sanders, and Ray Kroc (who founded McDonald's at age 55).

As with responses to earlier questions, there were many examples of family members, colleagues and other associates. Examples of major

life transitions included: an army officer who became a carpenter, a teacher who became a ticket collector, an IT manager who started a cleaning business, someone who left business to be a gardener, and a prostitute who became a career coach!

One person said that major re-thinkers are people who challenge previous thinking. Another commented, 'the guy who turned Toyota upside down thought differently and had the strength of character to battle the entrenched resistance to change.' Someone else said big re-thinkers include 'anyone who has experienced grief and learned to live their life in a different way and used their grief to enhance their life.' The person who mentioned Gorbachev referenced his personal courage, willingness to re-think and take on huge risks.

A need to change, the courage to overcome resistance, the openness to seek alternatives, and the vision to see a completely new way have led many to the pinnacles of creativity. While these are the features of extraordinary men and women, their attitude and behaviour can be adopted by many to re-think the world around them and the degree to which they use their latent creativity.

Support for others in creativity

Think of a time when another person has helped you re-think an important issue. Indicate what led up to the situation, what prompted their support and how things worked out.

Spouses and bosses were mentioned most frequently. Also noted were grandparents, parents, peers, coaches, mentors and business partners. Types of support included bolstering confidence and self-belief, instilling a drive to succeed, encouragement to face reality, emotional support, providing different perspectives and reframing, providing advice and guidance, challenging assumptions, inspiring and mapping out alternatives. *The most common support mentioned was the role others had in listening and asking the right questions.*

While the most creative people by nature do a lot of internal work to come up with innovations, we are not in this world alone and most creators obtain substantial support from those around them. If we had the opportunity to add people like Bill Gates, Albert Einstein and Leonardo da Vinci to our survey, probably we would have found that other people influenced and supported them in their creative endeavours. It appears to be of great value for creators to reach out and obtain the support they need.

The value of creativity

What would it mean for you to be more creative?

The last question on the survey had to do with the real value of creativity in people's everyday lives. Respondents were very positive about what it would mean to be more creative. Responses included being more successful in life and business, having more fun, improved quality of life, gaining more time, better appreciation for the arts, following up more big ideas, greater fulfilment, new friends, new hobbies, improved business performance, more risk taking, increasing life potential, enhanced self-confidence, more energy, more courage and greater connections with children and family.

These responses are exactly what this book and the practice of re-thinking are intended to achieve. Unlocking the doors of creativity and re-thinking the world around us can only accelerate our accomplishments, fulfilment and ultimate quality of life.

The *Re-Think* team is doing on-going research – and pro-search – about what enables us to become more creative re-thinkers. For further information about this, and if you would like to be included in future surveys (people usually find just doing the survey extremely stimulating), then email nigel@nigelbarlow.com or look at our website nigelbarlow.com.

