BLACK BOX THINKING

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Failure

"A failure to learn from mistakes has been one of the single greatest obstacles to human progress."

"A progressive attitude to failure turns out to be a cornerstone of success for any institution."

"Society, as a whole, has a deeply contradictory attitude to failure. Even as we find excuses for our own failings, we are quick to blame others who mess up."

"It is partly because we are so willing to blame others for their mistakes that we are so keen to conceal our own. We anticipate, with remarkable clarity, how people will react, how they will point the finger, how little time they will take to put themselves in the tough, high-pressure situation in which the error occurred. The net effect is simple: it obliterates openness and spawns cover-ups. It destroys the vital information we need in order to learn."

"Only by redefining failure will we unleash progress, creativity and resilience."

Open Loop Feedback

"So, just to re-emphasize, for our purposes a closed loop is where failure doesn't lead to progress because information on errors and weaknesses is misinterpreted or ignored; an open loop does lead to progress because the feedback is rationally acted upon."

Cognitive Dissonance

"When people don't interrogate errors, they sometimes don't even know they have made one (even if they suspect they may have)."

"When we are confronted with evidence that challenges our deeply held beliefs we are more likely to reframe the evidence than we are to alter our beliefs. We simply invent new reasons, new justifications, new explanations. Sometimes we ignore the evidence altogether."

"Cognitive dissonance occurs when mistakes are too threatening to admit to, so they are reframed or ignored. This can be thought of as the internal fear of failure: how we struggle to admit mistakes to ourselves."

„The relationship between the ambiguity of our failures and cognitive dissonance: When a plane has crashed, it's difficult to pretend the system worked just fine. The failure is too stark, too dramatic. This is what engineers call a red flag: a feature of the physical world that says 'you are going wrong'. It is like driving to a friend's house, taking a wrong turn, and hitting a dead end. You have to turn around. Most failure is not like that. Most failure can be given a makeover. You can latch on to any number of justifications: 'it was a one-off', 'it was a unique case', 'we did everything we could'. You can selectively cite statistics that justify your case, while ignoring the statistics that don't. You can find new

justifications that did not even occur to you at the time, and which you would probably have dismissed until they – thankfully, conveniently – came to your rescue."

P.A.C.E.

"The mnemonic which has been used to improve the assertiveness of junior members of the crew in aviation is called P.A.C.E. (Probe, Alert, Challenge, Emergency)."

Learn From Errors

"It [Black Box Thinking] is about creating systems and cultures that enable organizations to learn from errors, rather than being threatened by them."

"In effect, practice is about harnessing the benefits of learning from failure while reducing its cost. It is better to fail in practice in preparation for the big stage than on the big stage itself. This is true of organizations, too, which conduct pilot schemes (and in the case of aviation and other safety critical industries test ideas in simulators) in order to learn, before rolling out new ideas or procedures."

Marginal Gains

"Marginal gains is not about making small changes and hoping they fly. Rather, it is about breaking down a big problem into small parts in order to rigorously establish what works and what doesn't."

„But a willingness to test assumptions is ultimately about a mindset. Marginal gains is a strategy of local optimisation: it takes you to the summit of the first hill. But once you are there, taking little steps, however well tested, runs out of traction. To have stayed ahead of the competition, Blockbuster would have needed to move into an entirely new space, leveraging new technology and fresh insights."

„If insight is about the big picture, development is about the small picture. The trick is to sustain both perspectives at the same time."

„We learn not just by being correct, but also by being wrong. It is when we fail that we learn new things, push the boundaries, and become more creative."