COMMENTARY

'Block-Change': Exploring Change Management Principles to Overcome Challenges in Blockchain Adoption

[1]Gintare Geleziunaite, [2]Sean Manion
[1]Department for International Trade, UK
[2]Equideum Health, USA

Correspondence: stmanion@gmail.com

Abstract

Blockchain technology has attracted significant interest and investment over the past decade across multiple industries. While the research and development has been robust and there has been no shortage of attempts at implementation, successful implementations at scale have been somewhat limited. Evaluations of this limited success have often focused solely on the technology or isolated economic assessment of the business use cases. Individual users and the networks they create are another critical component of a successful blockchain implementation at scale. Change management is the approach of preparing, supporting, and guiding a group of people towards an organisational or network goal. This paper looks at change management as a critical component of successfully building a network for scaled adoption and implementation of blockchain use across industries. We explore what makes individuals resistant to change, offer solutions from the established fields of change strategy and change management, and consider how these can be applied to increase success in blockchain adoption and implementation. Crucial elements include identifying principal stakeholder groups and users, asking key questions and gathering input and feedback from these stakeholders, incorporating this information into the governance structure and consensus mechanisms of the blockchain use, demonstrating and describing value of use to the stakeholders, and aligning these components for successful adoption. We end with impactful recommendations for developers, business leaders, administrators, subject matter experts, advisors, and end users to consider to better incorporate successful change management principles into their blockchain projects.

Keywords: *blockchain, distributed ledger, change management, technology, human centered design, adoption, implementation*

JEL Classifications: *G40, G41*

1   Introduction

It is estimated that projects utilising blockchain technology have a failure rate 'as high as 92%' [1] whilst the technology industry average is at 56%. In a nutshell, more than half of technology-powered transformational initiatives will fail to deliver anticipated value. We can't help but pose a question – where do we go wrong and what can we do differently to deliver technology-powered value?

Research suggests that even technology that is effectively closing a market or functionality gap often fails the adoption challenge. Not because people don't need it, but because they choose to resist it anyway. Humans choose to resist change.

There is a wealth of valuable lessons to be learned from previous technological transformations to inform blockchain's adoption journey and how we manage people through this change. People's readiness for the 'block-change' will be a crucial determinant of whether we get to enjoy at least some of the promises of decentralisation, security, and transparency delivered to us by the 'machine for building trust' [2].

This article is aimed at a non-technical audience – the senior leaders, project directors and managers, and product owners who are considering or implementing blockchain technology to transform their organisations and environments. Therefore, we will begin with the definitions:

1. '**Blockchain** is a distributed ledger, or database, shared across a public or private computing network. Each computer node in the network holds a copy of a shared ledger of data events (e.g., financial transactions), so there is no single point of failure. Every piece of information is mathematically encrypted and added as a new "block" to the chain of historical records. Various consensus protocols are used to validate a new block in tandem with other participants before it can be added to the chain. This prevents fraud or double spending without requiring a central authority. The ledger can also be programmed with "smart contracts," a set of conditions recorded on the blockchain, so that transactions automatically trigger when the conditions are met. For example, smart contracts could be used to automate insurance-claim pay-outs.

Blockchain's core advantages are decentralisation, cryptographic security, transparency, and immutability. It allows information to be verified and value to be exchanged without having to rely on a third-party authority, in effect becoming a computationally validated trust layer. Rather than there being a singular form of blockchain, the technology can be configured in multiple ways to meet the objectives and commercial requirements of a particular use case' [3].

2. **Change management** is the process of ensuring that people that are affected by proposed changes are ready, willing, and able to adopt them. Change management plays a crucial role in enabling adoption of the products and outcomes of projects, resulting in the realisation of anticipated benefits. Change management deals with the 'people side' of projects, by identifying and removing emotional and capability barriers and resistance to change at both an individual and organisational level.

Every change initiative – technological or not – presents adoption challenges, a key one being 'resistance'. Neuroscience explains that resistance to change isn't a conscious act. Instead, we resist change because of our evolutionary survival instinct and, as humans, we are inherently cautious about change. As soon as we encounter anything new or unexpected, the brain automatically assesses whether it presents a threat to our survival or a potential reward. This deeply rooted process happens at a subconscious level, and in less than a split second — we have no conscious idea that it is happening [4]. Whilst we cannot remove this natural reaction to change, we can certainly manage it by employing change management techniques and processes.

The purpose of this article is to consider common reasons for resistance to change, how those obstacles manifest in blockchain projects (i.e., initiatives to incorporate blockchain solutions into enterprises), and the impact that an effective change management approach could have on the likelihood of successful adoption of blockchain technology.

2 Why do people resist change and more specifically – 'block-change'?

We have already established that blockchain projects' failure rates are high. This, no doubt, can be partially attributed to the fact that the technology is still in its early stages, is subject to the whims of a speculative market in the eyes of the public, and the fact that no digital transformation goes without technical challenges. However, the human side of the transformation – awareness, willingness, capability, and attitudes – presents, arguably, the greatest challenge to both individual projects and the likelihood of the mass adoption of blockchain-powered change.

In the following section, we will undertake a root cause analysis of why people resist change and how these common reasons might manifest specifically in blockchain projects. This analysis is essential in understanding the reasons for resistance and enables the mitigation research outlined in the next section of this article.

Reasons for resistance to change	Implications for the 'block-change'
Lack of vision and excess uncertainty 'If change feels like walking off a cliff blindfolded, then people will reject it. People will often prefer to remain mired in misery than to head toward an unknown. To overcome inertia requires a sense of safety as well as an inspiring vision. Leaders should create certainty of process, with clear, simple steps and timetables' [5]. If there is no clear and compelling vision that is communicated frequently and with authenticity, then the decisions may feel like they are imposed on people suddenly, with no time to prepare for the future. Change will be heavily resisted or even sabotaged from within.	To date, far too many blockchain projects (some of which could be truly disruptive and game changing) are seen to be 'leading with the "how and what" of their initiatives … and every other technology buzz word imaginable, rather than … with "why" and the outcomes' [1]. In short, little thought goes into crafting a compelling vision and story, as well as clearly articulating why everyone involved should care. People are unlikely to embrace change if it is not immediately clear what's in it for them. Blockchain technology truly offers appealing opportunities and benefits to a wide variety of audiences; however, lack of investment in relevant resources and effort to communicate those results in lack of buy-in and interest. For example, Capgemini, a French consultancy, estimates that consumers could save up to \$16 billion in banking and insurance fees each year through blockchain-based applications in the US and EU alone [6]. Powerful statements like this, arguing that blockchain could make \$16 billion per annum available for more equitable distribution amongst participants, create excellent awareness and a buy-in opportunity, but are underutilised. Another underutilised message is that blockchain stands to make business and government operations more accurate, efficient, secure, and cheap with fewer middlemen. Projects must become better at utilising positive messaging and the benefits of technology to build their visions that people can rally behind.

Reputation and past experiences

By definition, 'change is a departure from the past. Those people associated with the last version — the one that didn't work, or the one that's being superseded — are likely to be defensive about it' [5].

And then there is also the we-have-tried-this-before argument. 'The ghosts of the past are always lying-in wait to haunt us. As long as everything is in a steady state, they remain out of sight. But the minute you need cooperation for something new or different, the ghosts spring into action. Old wounds reopen, historic resentments are remembered — sometimes going back many generations' [5].

Blockchain technology represents a major change, via disintermediation, a threat even, to many people and organisations that have created the modern state of things. For the last century, academics and business leaders have been shaping the practice of modern management. 'The main theories, tenets, and behaviours have enabled managers to build corporations, which have largely been hierarchical, insular, and vertically integrated. Blockchain technology could have profound effects on the nature of companies: how they are funded and managed, how they create value, and how they perform basic functions such as marketing, accounting, and incentivizing people. In some cases, software will eliminate the need for many management functions' [7]. Without surprise, the blockchain potential to disrupt organisations in this way is particularly threatening to the management cohort. Especially if it is unclear where they might fit in the new structure and what this means for their power and influence in the organisation. Care must be taken when communicating this message to prevent resistance and even the attempts to sabotage change.

As for the ghost of the past, blockchain technology is not an exception as it has already made its first appearance in the form of cryptocurrencies and the speculative market that is attached to it. You only get to make a first impression once they say – and the crypto market has not done the technology many favours with stories on fraudulent tactics, plagiarised documents, and fake executive teams appearing across the media outlets on a regular basis. We, of course, know that blockchain is not a synonym for speculation, but efforts are needed to spread this message far and wide. Within this maelstrom of speculative digital assets that explode and implode in value sit several innovative protocols with battle-tested code and proven efficacy.

Accessibility and competence challenges

Change that makes people feel inadequate or incompetent will be resisted. People might express scepticism about whether the new solution will work, whether the outcomes of the project will deliver real benefits and improvements, but in reality, they are worried that their skills will no longer be relevant.

The result of this is often the unfounded rumours and statements about the change that emerge to discredit it.

Project teams are guilty of inflaming this fear through using inaccessible language to not only describe the future state but the technology itself. This is particularly relevant for the technology-driven change projects which use technical jargon, acronyms, etc. extensively.

Additionally, research found that 28–58% of people perceive introduction of workplace technology to be an additional burden to their workload and that 9–20% of people see new technology as a job security concern [8].

Applications that utilise blockchain technology will arguably allow organisations to perform better, faster, and smarter decisions 'with the inclusion of everyone in an organisational context such as employees, partners, customers, and other stakeholders' [9]. Whilst this is altogether a positive message, it is easy to see how it could be worry-inducing for impacted stakeholders and employees leading to the emergence of questions, such as:

Will my skills and competence, as an employee, still be relevant to my organisation?
Will there be a job for me?
Will I be able to keep up with demands?
Will I have training opportunities?

Unless early communication features proactive answers to all the above questions, projects will fail to even begin to bring their stakeholders on a journey and prevent them from trying to discredit the initiative through rumours and other actions.

Loudly voiced environmental concerns around blockchain technology (which are too complex and nuanced to cover here) are a potential example of resistance to change hidden behind the banner of sustainability.

Not all blockchains are equal and some are more environmentally friendly than others (and that is without analysing the cost versus benefit of blockchains that utilise a higher energy consumption). For example, the Polkadot network, according to the CCRI rating, 'consumes 6.6 times the annual value of electricity used by an average U.S. family' [10]. This is significantly less than a physical 'brick and mortar' business of a similar size. The second largest public blockchain, Ethereum, has as of September 2022 reduced its energy consumption by 99.98% by changing its validation model [11].

McKinsey's report reinforces the argument more generally. 'The misconception that blockchain is not viable at scale due to its energy consumption and transaction speed is a conflation of Bitcoin with blockchain. In reality, the technical configurations are a series of design choices in which the levers on speed (size of block), security (consensus protocol), and storage (number of notaries) can be selected to make most use cases

3

	commercially viable. As an example, health records in Estonia are still in databases "off chain" (meaning not stored on blockchain), but blockchain is used to identify, connect, and monitor these health records as well as who can access and alter them' [3]. We touched on the leadership challenges earlier, but it is worth mentioning that this fundamental lack of awareness, understanding, and capability is also true for many leaders that are expected to lead blockchain-powered transformation in their organisations. Let alone the array of emerging technologies that intersect [1].
Organisational culture and behaviours 'Organization's culture comprises an interlocking set of goals, roles, processes, values, communications practices, attitudes and assumptions' [12]. In short, culture is how we do things around here. Building an effective organisational culture is one of the most difficult challenges that leadership will encounter, let alone changing it. To put the complexity of the task into perspective, in 2017 a study by Deloitte found that 87% of organisations cite culture and engagement as one of their top challenges [13]. Any change being implemented in an organisation will be affected by that organisation's culture and might also require for the culture to change in order to enable the adoption of the outputs. The latter is a significant undertaking and should be (though rarely is) recognised as such and managed carefully.	The promises of blockchain – decentralisation, transparency, accountability, and greater prosperity for all – is more challenging to the status quo of organisational cultures than we may think. It's arguably an anathema to learned human behaviour and norms. And so new behaviours must be introduced and fostered – and that takes desire, effort, and resource. One of the greatest challenges to existing cultures in many organisations is that blockchain represents the emergence of cross-organisational collaboration and 'coopetition'. This requires a total mentality shift because the only way benefits are realised is by working in a consortium setting, often with your fiercest competitors. It is difficult to manage a project in an organisation, let alone one that spans across different organisations. All the usual things a project would do, such as aligning stakeholder interests, onboarding leadership, identifying problem statements and scoping, are more challenging due to multiple agendas and cultures. The likelihood of successful completion relies on making partnerships strong enough to outlive the initiative itself – and that requires a significant shift in the culture and behaviours across those organisations. Including the need to build a common set of values of how we do things around here together. Blockchain presents unprecedented opportunities to affect behavioural change in organisations due to its incentivisation capability. Unfortunately, behavioural change initiatives don't yield instant results, and so are not always perceived as worthy of investment of time and effort. We are yet to see many organisations use blockchain for the purpose of internal organisational development, but this may not be far off.

3 Managing 'block-change'

McKinsey is adamant that '70% of digital transformation initiatives fail to achieve their goals, largely due to resistance to change' [14] and lack of change management efforts. The goal of change management is to ensure that every stakeholder affected by the change is ready, willing, and able to excel in the new ways of working.

In the previous section of this article, we have identified some of the reasons why blockchain-powered change initiatives might be resisted, and in the next section, we will explore what projects need to consider and implement to overcome the resistance to change.

3.1 Vision and leadership

We have established the importance of having a clear vision for the initiative that leadership lives by and that everyone can get behind. A clear vision provides a direction for the business and helps everyone in the organisation make the right decisions. It also acts as a motivator to complete difficult tasks and inspires innovative action to achieve the desired end goal.

It is equally as important to be able to bring that vision to life through a story that is centred around what value the technology will add to the end users and stakeholders' lives.

In the case of blockchain technology, it 'holds the potential to decrease transaction costs, improve privacy and redesign social interactions' [15], amongst other positive outcomes. And whilst there is certainly a positive what's in it for me story to tell, the challenge is having suitably skilled leadership that is able to tell that story in a compelling way. Therefore, it is argued that projects should allocate sufficient time and resources to develop a robust vision and case for change, closely follow change comms best practice principles and invest heavily in preparing the leadership team for the change leadership work.

3.2 Accessibility and competence

To be considered accessible, the technology must be perceived as having a positive risk versus usefulness ratio as well as medium to low ease of use. In fact, ease of understanding and using the technology is quoted as the greatest barrier to adoption [15]. Esoteric terms and jargon used by technical teams, with little importance placed on diversifying these teams to include professionals equipped to decipher the messaging and making it more appealing to wider stakeholder groups, remain an issue. The view that the technology transformation is something that can and should be managed by tech teams alone must be eradicated.

To further remove technology accessibility and competence barriers, projects should consider:

- Including education initiatives as part of every project (for the stakeholders and the end users),
- Incorporating human-centred design involving stakeholder representatives whenever possible, and
- Building and utilising internal networks of innovators and early adopters (or change champions) that would facilitate the onboarding of the critical mass required.

The diffusion theory developed by E.M. Rogers in the 1960s [16] explicitly models the dynamic process of technology adoption every individual will pass through as part of a social system. Diffusion theory distinguishes human stereotypes (Adopter Types) by their innovativeness. The first to adopt are the 'Innovators' and they serve as gatekeepers for a technology's diffusion and inspire the 'Early Adopters', who are often the local opinion leaders. Then the 'Early Majority' follows. The advantage of building and utilising these internal networks is due to these individuals already having trust across the organisation which is difficult to build at pace for the project team.

Feeling competent and in possession of required knowledge, capability, and skills to perform post-transition is another key enabler of increased adoption and likelihood of the use of the technology. Particular attention must be reserved for the learning needs' analysis and crafting learning material that is suitable for the needs of all segments of the audience. Although we are focusing on technological transformation, the learning needs extend beyond the direct technical capability and will include other skills, attitudes, and behaviours.

3.3 Culture and behaviours

The most desirable change-ready organisational culture traits (which also happen to be the most difficult to achieve for any organisation) are organisational trust, desire for experimentation, and uncertainty tolerance. These traits are crucially important for any organisation that is looking to embark on blockchain-powered transformation. It might feel counterintuitive, but the development of technological transformation should start with the development of relevant values and culture in the organisation. This will enable the users to trust that system aligns with their values and ensure use of the network.

Colonel John Boyd, USAF, noted that organisations should focus on 'People, ideas, and things, in that order', and this holds true with blockchain. The network of users' needs to have buy-in on the shared governance that is built into any particular blockchain configuration [17]. The sweet spot for an effective blockchain use is where the technology and business case overlap with this network of users. Having a 'minimally viable network' of users is critical for the successful implementation of any blockchain use case. Without the network of users, any application of blockchain becomes an academic exercise [18].

4 Conclusion

It is argued that in the short term, blockchain technology will predominantly create value by reducing costs before creating transformative business models [3]. Mass adoption of the internet has set a valid precedent for this thinking; because whilst the potential of the internet was prophesied many decades before, it didn't become mainstream until the 1990s. Web 3.0, powered by blockchain technology, is arguably on a similar path. It can also be argued that in both instances – it is not the technology readiness that is responsible for the prolonged route to mass adoption, but rather the mentality shift that is required to prepare us and our stakeholders for the commercial and organisational disruption that this transformation will entail.

In this article, we have explored the common adoption and people change challenges relevant to blockchain-powered transformation (or 'block-change'), as well as ways for overcoming them. Fundamentally, it all boils down to the fact that there is no such thing as change without emotion. Organisational (even industrial) change happens at an individual level and affects us all differently. To successfully manage the change at hand, we must be able to view it from the angle of each stakeholder group and tailor the change to make it as easy and appealing as possible for all. Finally, we must also remember that we are not starting from a clean slate either – taking into account organisation's history, culture, and norms and how they fit with the proposed transformation is the first step in a change management journey.

There are effective frameworks to help us manage the human response to change, but there is no one-size-fits-all approach. To manage change effectively significant commitment and effort are required. The upside, however, is successful adoption of the technology and the ability to realise the business value and benefits offered by it.

5 Recommendations

- Look to broader industry and cross-industry consortia and partnerships for opportunities for

transformational change incorporating business model innovation.

- Begin the development of technological transformation with the development of relevant values and culture in the organisation to ensure that the change is sustained.
- Assess your project's roadmap recognising that the technology readiness is only one of many aspects required for successful adoption.
- Resource the project with non-technical professionals equipped to implement change management frameworks, decipher the technical jargon, and communicate effectively to help you manage the human response to change.
- Clearly articulate the case for and benefits of your project. Successful projects lead with the 'why' and not 'what' and appeal to both logic and emotion.
- Identify people's mentality, capability, and cultural shifts that will be required to prepare your stakeholders for the commercial and organisational disruption that technological transformation will entail.
- Deliver education on technical and non-technical aspects of blockchain to various stakeholders to help them better understand the opportunities and challenges the technology brings and how it compares with existing options.

6 Further research: blockchain and organisational culture development

The scope of this article is limited to managing 'block-change' effectively. However, there is an undeniable link between effective organisational culture and the impact it has on our efforts to land change. In earlier sections, we have explored the most important traits of effective organisational cultures, and the authors strongly believe that further research is required to explore how blockchain technology could facilitate the development of these crucial traits in organisations – in particular, and somewhat paradoxically given a central thrust of the technologies promise – trust.

We have already established that building and maintaining trust within organisations is critical. There is a clear link between trust and corporate performance. 'If people trust each other and their leaders, they'll be able to work through disagreements. They'll take smarter risks. They'll work harder, stay with the company longer, contribute better ideas, and dig deeper than anyone has a right to ask' [19].

Blockchain technology carries the promise of transparency, which is a key enabler of trust, as well as a mechanism to motivate and reward the behaviours to build this crucial trait in organisations. Operant Conditioning theory developed by B. F. Skinner in the 1930s [20] proved that providing a reward for adopting targeted behaviours is the most effective learning approach. And now we have a technology with the promise to implement this at scale. The impact on Organisational Culture is a key outcome of the digital era and Organisational Culture development should be firmly considered as an early non-technical use case of blockchain technology.

References

[1] D. A. Disparte, "Why enterprise blockchain projects fail." Forbes. [online]. Available at: https://www.forbes.com/sites/dantedisparte/2019/05/20/why-enterprise-blockchain-projects-fail/?sh=681e814a4b96 [Accessed 14 Dec. 2022].

[2] The Economist, "The trust machine," *The Economist*, 2015. [online]. Available at: https://www.economist.com/leaders/2015/10/31/the-trust-machine [Accessed 14 Dec. 2022].

[3] McKinsey & Company, "Blockchain beyond the hype: What is the strategic business value?" [online]. Available at: https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value. [Accessed 14 Dec. 2022].

[4] G. Freitas, PeopleTalk Online, "Neuroscience behind why employees resist change," 2019 [online]. Available at: https://peopletalkonline.ca/organizational-change-the-neuroscience-behind-why-we-resist-change/ [Accessed 14 Dec. 2022].

[5] R. M. Kanter, "Ten reasons people resist change," *Harvard Business Review*, 2012. [online]. Available at: https://hbr.org/2012/09/ten-reasons-people-resist-chang. [Accessed 14 Dec. 2022].

[6] Capgemini UK, "Consumers set to save up to sixteen billion dollars on banking and insurance fees thanks to blockchain-based smart contracts," [online]. Available at: https://www.capgemini.com/gb-en/news/press-releases/consumers-set-to-save-up-to-sixteen-billion-dollars-on-banking-and-insurance-fees-thanks-to/ [Accessed 14 Dec. 2022].

[7] Cognitive World, "Digital transformation debts post-Covid-19," n.d. [online]. Available at: https://

cognitiveworld.com/articles/blockchain-organizational-culture-part-i [Accessed 14 Dec. 2022].

[8]   HR Magazine, "HR Magazine - Technology increasing stress at work," n.d. [online]. Available at: https://www.hrmagazine.co.uk/content/news/technology-increasing-stress-at-work) [Accessed 14 Dec. 2022].

[9]   Baslangic Noktasi, "How will blockchain reshape organizational culture on the edge of future of work?" 2019 [online]. Available at: https://baslangicnoktasi.org/en/how-will-blockchain-reshape-organizational-culture-on-the-edge-of-future-of-work/. [Accessed 14 Dec. 2022].

[10]   Techtelegraph, "Polkadot electricity consumption is less than solana, bitcoin, and ethereum," 17 Feb. 2022. [online]. Available at: https://techtelegraph.co.uk/polkadot-electricity-consumption-is-less-than-solana-bitcoin-and-ethereum/ [Accessed 14 Dec. 2022].

[11]   E. Kapengut and B. Mizrach, "An event study of the ethereum transition to proof-of-stake." arXiv:2210.13655 [q-fin.TR]. [online]. https://doi.org/10.48550/arXiv.2210.13655 [Accessed 20 Dec. 2022].

[12]   S. Denning, "How do you change an organizational culture?" Forbes, 12 Nov. 2012. [online]. Available at: https://www.forbes.com/sites/stevedenning/2011/07/23/how-do-you-change-an-organizational-culture/ [Accessed 14 Dec. 2022].

[13]   J. Flynn and A. H. Mazor, "The employee experience: Culture, engagement, and beyond," *Deloitte Insights*, 2017. [online]. Available at: https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2017/improving-the-employee-experience-culture-engagement.html [Accessed 14 Dec. 2022].

[14]   B. Ewenstein, W. Smith, and A. Sologar, "Changing change management." McKinsey & Company, 2015. [online]. Available at: https://www.mckinsey.com/featured-insights/leadership/changing-change-management [Accessed 14 Dec. 2022].

[15]   F. Knauer and A. Mann, "What is in It for me? Identifying drivers of blockchain acceptance among German consumers," *The Journal of the British Blockchain Association*, vol. 3, no. 1, pp. 1–16, 2020, doi:10.31585/jbba-3-1-(1)2020.

[16]   E. M. Rogers, "Diffusion of preventive innovations," *Addictive Behaviors*, vol. 27, no. 3 6, pp. 989–993, 2003, doi:10.1016/s0306-4603(02)00300-3.

[17]   S. Manion and Y. Bizouati-Kennedy, *Blockchain for Medical Research: Accelerating Trust in Healthcare*. CRC Press, 2020. ISBN: 0367347466

[18]   J. Bass, "The truth about blockchain and its application to health care." Healthcare Financial Management Association, 28 Jan. 2019. [online]. Available at: https://www.hfma.org/topics/hfm/2019/february/63125.html [Accessed 20 Dec. 2022].

[19]   R. M. Galford and A. S. Drapeau, "The Enemies of Trust," *Harvard Business Review*, 2003. [online]. Available at: https://hbr.org/2003/02/the-enemies-of-trust [Accessed 14 Dec. 2022].

[20]   J. E. R. Staddon and D. T. Cerutti, "Operant conditioning," *Annual Review of Psychology*, vol. 54, no. 1, pp. 115–144, 2003. [online], doi:10.1146/annurev.psych.54.101601.145124.