

Flourishing through time

Sir Peter Gluckman and Dr Felicia Low

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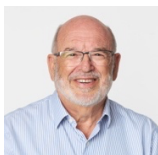
Koi Tū Centre for Informed Futures is an independent, non-partisan, future-focused boundary organisation dedicated to tackling the complex, long-term challenges shaping Aotearoa New Zealand's future.

We provide high-quality, evidence-based insights to address critical national and global issues arising from rapid social, economic, technological, and environmental change.

Our name, Koi Tū, was gifted by Ngāti Whātua Ōrākei. Koi means “the sharp end of an arrow” and “to be bright and clever,” while Tū means “to stand” and conveys resilience. Like our namesake, Koi Tū aims to get to the heart of the most pressing long-term issues.

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Flourishing through time

We all travel through time for longer than most of us realise. Indeed, our lives started in our grandmother's womb, when the egg that ultimately provided half of our genes was formed when our mother was herself but a 7-week-old embryo. And from that moment onwards our destiny became a matter of both our genes and our environment. That environment can be physical, nutritional, social or emotional. Those environments impact on us from the moment that egg formed, and later when our father's sperm formed and we were conceived – and they continue to be impactful through our fetal, infant, childhood adolescence and adult lives. And the interaction between these changing environments and ourselves – mediated first through our mothers and their environments, and then through the broader family and societal experiences after we born – has enormous impacts on our destiny.¹

Every society is made of up individuals, every one of whom has faced a similar journey through time. And as any traveller knows, when things go wrong at the beginning of any journey, the probability of problematic and costly consequences increases. And this is particularly so in the human journey.

Since its inception, one of Koi Tū's major streams of work has focused on the start of the human journey and the consequences of a problematic start. Our choice to focus here was very deliberate. While policy making for this period of life remains somewhat inchoate, the science of a compromised start to life or poor progress through childhood and adolescence is very clear: enormous risks of poor outcomes whether in physical health, emotional health, educational success, relationships, contributions to society, or engagement with the justice system. Indeed, the Dunedin Multidisciplinary study has shown that a poor start to life before the age of 2 contributed an enormous fraction of the costs to the State across health, justice and the welfare system.² James Heckman, a Nobel laureate in Economics, has shown a remarkably high return on investment by targeted focus on the most disadvantaged children in their first two years of life.³ Recent studies in Australia also highlight the multibillion-dollar cost of inadequate early intervention and prevention.⁴

Recently, our work has pointed out that the epidemic of mental health issues confronting young people has in no small part its origin in a poor start to life affecting their brain development in ways that make the child or youth more sensitive to the stresses of a very different adolescent world.⁵ Just restricting social media access will

¹ Poston, L., Godfrey, K. M., Gluckman, P. D., & Hanson, M. A. (Eds.). (2022). *Developmental Origins of Health and Disease* (2nd ed.). Cambridge University Press.

² Caspi, A., Houts, R. M., Belsky, D. W., Harrington, H., Hogan, S. et al. (2017) Childhood forecasting of a small segment of the population with large economic burden. *Nature Human Behaviour*, 1, Article 0007. <https://doi.org/10.1038/s41562-016-0005>

³ Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A., & Yavitz, A. (2010). The rate of return to the HighScope Perry Preschool Program. *Journal of Public Economics*, 94(1), 114-128. <https://doi.org/10.1016/j.jpubeco.2009.11.001>

⁴ O'Connell, M. (2025). The cost of late intervention 2024. *The Front Project*.

⁵ Hanson, M. A. & Gluckman, P. D. (2025) Growing anxious—Are preschoolers matched to their futures? *Science*, 388(6750), 918-919. <https://doi.org/10.1126/science.adp3764>

not remove all those stresses to which young people are now hypersensitised. The issues are much deeper and again argue for a much stronger life course approach.

But when we look through a policy lens, we must be realistic. We must focus on what can be changed. We cannot change our genetic endowment, so we must focus on the environmental exposures across the period from conception to young adulthood if we want to optimise every human's potential. For example, there is growing evidence that the mental health of parents both before and after birth is critically important.^{6,7} The evidence is now very clear that those parts of the brain that control what are technically called executive functions are affected before and after birth, both by maternal stress and the level of interactive attention the infant receives from parents and caregivers in the first two years. Executive functions, which are largely formed in the first four years after conception, are the most important brain pathways determining our success in life. They allow us to pay attention, to plan, to learn, to relate and communicate with others, and to self-regulate our emotions.

Human development continues until the third decade of life. But each step builds on what preceded it and so it is inevitable that the biggest returns come from early investment. If a child reaches school with inadequate capacity to learn, it is very hard to repair the deficit and ensure a good educational outcome. Likewise, if the familial, educational and social experiences in childhood are less than optimal; then the impact on the transition to adulthood is likely to be greater.

When a tree is pruned badly as a seedling it is less likely to form well as a mature tree. When the foundations of a house are weak, it is more likely to be damaged in an earthquake. Similarly, we know that executive functions that are poorly developed in the early years are very difficult to repair and leave the child vulnerable to broad range of problematic outcomes. These include poorer attention span, language development, responses to others (including teachers), capacity to learn and plan, and psychosocial emotional regulation including stress management.

The consequences are obvious – poor early year environments lead to impaired ability to learn with all the ramifications for educational achievement and lifelong productivity.⁸ Impaired emotional control makes mental health concerns more likely. Impaired interpersonal skills and eusociality mean the individual is more likely to take a path involving poorer relationship development and interactions with the criminal justice system.

⁶ Low, F., Gluckman, P., & Poulton, R. (2021). Intergenerational disadvantage: Why maternal mental health matters. Kōi Tū: The Centre for Informed Futures. <https://doi.org/10.17608/k6.auckland.14616969.v1>

⁷ Wilkinson, C., Low, F., & Gluckman, P. (2022). Beyond genes: How fathers play a biological role in the health of future generations. Kōi Tū: The Centre for Informed Futures. <https://doi.org/10.17608/k6.auckland.20335161.v1>

⁸ Low, F., Gluckman, P., & Poulton, R. (2021). Executive functions: A crucial but overlooked factor for lifelong wellbeing. Kōi Tū: The Centre for Informed Futures. <https://doi.org/10.17608/k6.auckland.16946011.v1>

We have known this for many years, but the policy responses have often been siloed and transactional rather than integrated and strategic.⁹ And here we have a truly 'wicked problem'. We need a much more joined up approach both for prevention and intervention. And while much of this commentary has focused on the first two years of life, the issues continue until early adulthood – they just get harder to remedy as one gets older.

Whānau and communities have central roles to play, particularly with regards prevention. We also cannot ignore the reality that too many children are born into material deprivation, which itself is often associated with severe intergenerational disadvantage. But beyond that we are seeing tolerance of unacceptable levels of family violence and child abuse, and inappropriate exposures of young children to drugs and alcohol. The State has an enormous role to play but is struggling because of the multiple highly siloed components in play: when should an issue sit with health, with education, with the justice sector, with social welfare, with housing, or with Oranga Tamariki? The reality is that a holistic approach is needed, and here the Social Investment Agency is a welcome initiative that may allow for a more integrated and targeted approach. But government does not have sole responsibility as there will always be a limit to what it can do. Clearly, family and whānau have a critical role as they comprise the most immediate environment for the growing infant. But there also needs to be further consideration of the role of the voluntary and philanthropic sectors.

How do we coordinate? Whether the issues emerge as child abuse, mental health issues, youth homelessness, family violence, youth crime, unemployment or physical health issues, they become a large and growing burden on the whole community and the State. There are partial answers: ensuring high quality antenatal care, promoting parental mental health, improved community engagement in supporting parents and children, promoting everyday actions that support children's social, emotional and cognitive development, supporting families in need in the education system from early childhood through to secondary school, and improving the health system especially promotion of mental wellbeing.¹⁰

Koi Tū's primary role is as a boundary organisation – helping synthesise and translate the evidence so that decision makers can be better informed. We take a holistic and pluralistic view, and in doing so we hope we can help the State and other stakeholders develop a much more effective and coordinated approach to human flourishing. For advancing and optimising our human capital is the most promising way to a more cohesive, productive and satisfying future for our country. The science is clear – the challenge is now how best to use it.

⁹ Sridhar, H., Low, F., & Gluckman, P. (In press). Systems thinking, foresight and wicked problems: Implications for policymaking. Koi Tū Centre for Informed Futures.

¹⁰ Morreau, J. & Low, F. (2023). Early investment: A key to reversing intergenerational disadvantage and inequity in Aotearoa New Zealand. Koi Tū: The Centre for Informed Futures.
<https://doi.org/10.17608/k6.auckland.24750327.v1>



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