What do we know about the role of biology in entrepreneurship? The past decade has unravelled various associations between biological factors, including genetics, hormones, mental conditions and neuroscience, and the tendency of people to engage in entrepreneurial outcomes. Yet, it is unclear how this evidence can be useful for policy-makers and practitioners. In this work, we provide some insights to policy-makers and practitioners from this area of research.

Background

What makes an entrepreneur? The past few years have witnessed a significant increase in research examining the role of biology in entrepreneurship. For instance, evidence shows that the genetic factors explain almost half of the variance in people’s tendencies towards entrepreneurship (Nicolaou, Shane, Cherkas & Spector, 2008). Other research suggests that hormones, such as testosterone and cortisol, affect the propensity of people to become entrepreneurs (Nicolaou, Patel & Wolfe, 2018; Wolfe & Patel, 2017b). Further research argues that entrepreneurs have increased activations in the frontopolar cortex of the brain when engaging in exploration tasks (Laureiro-Martinez et al., 2014). Studies also show that mental conditions, including attention-deficit hyperactivity disorder (Wiklund, Yu, Tucker & Marino, 2017), dyslexia (Logan, 2009), depression (Hessels, Rietveld, Thurik & van der Zwan, 2018), bipolar disorder (Johnson, Madole & Freeman, 2018) and obsessive-compulsive personality disorder (Wolfe & Patel, 2017a), influence the propensity of individuals to engage in entrepreneurial outcomes.

Research has outlined a number of mechanisms through which biological factors may influence entrepreneurship (see Table 1) (Nofal, Nicolaou, Symeonidou & Shane, 2018). First, evidence indicates that biological factors may affect individuals’ propensity to engage in entrepreneurship through psychological
factors such as openness to experience, sensation seeking, creativity, and extraversion and attitudes such as opportunity recognition – a mechanism called “mediation through psychological factors and attitudes” (Shane & Nicolaou, 2015b; Shane, Nicolaou, Cherkas & Spector, 2010). Second, studies demonstrate that biological factors may interact with environmental factors, such as education, to influence the likelihood of becoming an entrepreneur – a mechanism called “biology-environment interaction” (Nicolaou & Shane, 2009; Quaye, Nicolaou, Shane & Harris, 2012). Third, researchers argue that individuals may have biological tendencies towards selecting certain environments that can influence their likelihood of becoming entrepreneurs – a mechanism called “biology-environment correlation” (Nofal, Nicolaou, Symeonidou & Shane, 2017). Fourth, different biological factors can jointly interact to influence entrepreneurship – a mechanism called “interactions between biological strands” (Nofal, Nicolaou, Symeonidou & Shane, 2018).

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**Implications**

It is important to emphasise that biological influences on entrepreneurship are definitely not deterministic and that anyone can become an entrepreneur. For instance, research shows that environmental factors can moderate the effect of biology on the tendency to engage in entrepreneurship. Evidence suggests that changing social environments and education can moderate the relationship between genetic factors and the tendency to become an entrepreneur (Quaye et al., 2012; Zhang, Ilies & Arvey, 2009).

Moreover, evidence suggests that identifying the biological covariance between skills, traits, attitudes and entrepreneurial outcomes can present useful implications. For instance, because evidence shows that biological factors contribute to the covariance between creativity and entrepreneurship more than they contribute to the covariance between sensation-seeking and entrepreneurship, targeting people’s sensation seeking can be more effective than policies targeting creativity to stimulate entrepreneurship (Nofal et al., 2018; Shane & Nicolaou, 2015b).
Research on mental conditions has also presented important implications to policy-makers and practitioners. For instance, prior work has changed beliefs about the role of mental conditions by showing that they positively influence the likelihood of engaging in entrepreneurship (Shane & Nicolaou, 2015a). For example, extant studies argue that dyslexic people tend to engage in entrepreneurship (Logan, 2009). Other evidence shows that people with Attention-Deficit Hyper Activity Disorder (ADHD) do well in entrepreneurial careers (Lerner, Hunt & Verheul, 2018). Recent studies indicate that Obsessive-Compulsive Personality Disorder (OCPD) is positively associated with the propensity of people to become entrepreneurs (Wolfe & Patel, 2017a). Furthermore, extant literature demonstrates that bipolar disorder plays an important role in entrepreneurship (Johnson et al., 2018). Thus, policy-makers may encourage people with ADHD, dyslexia and bipolar disorder to consider an entrepreneurial career and turn what others may have wrongly perceived to be a disadvantage into a great asset.

Summary and Evidence Gaps

The past decade has witnessed an increase in research on the biological foundations of entrepreneurship. Yet, empirical evidence on the role of biology on entrepreneurship is still limited and much more research is needed before we can understand the role that biology plays in it (Nofal et al., 2018). For instance, researchers are urged to further examine the moderating role that some environmental factors, such as education, financial status and public support, can play in the relationship between biology and entrepreneurship (Quaye et al., 2012). Additionally, research linking hormones, such as oxytocin and serotonin, to entrepreneurship is needed (Nofal et al., 2017). In addition, work linking neuroscience to entrepreneurship is encouraged as it has the potential to uncover some explanations with regards to how emotions and cognition relate to entrepreneurship (de Holan, 2013). Finally, research studying the effect of entrepreneurship on individuals’ health more generally is needed, given the increasing evidence on the negative effect that entrepreneurship can have on individuals’ well-being (Stephan, 2018).

Sources

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