

Can genetic factors influence the likelihood of engaging in entrepreneurial activity?

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Abstract

This article offers an argument for how genetic factors may influence the tendency of people to engage in entrepreneurial activity, and describes four mechanisms through which genetic factors could operate. It also explores ways that researchers can use quantitative and molecular genetics to examine entrepreneurship, and discusses the potential implications of a genetic perspective for management research on entrepreneurship.

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1. Executive summary

Entrepreneurship scholars have identified a variety of factors that affect the tendency of people to engage in entrepreneurial activity (Shane, 2003). However, one of the most interesting factors – genetics – has not been examined. In this paper, we provide an argument for how genetic factors might influence the *likelihood* that some individuals pursue entrepreneurial activity. Drawing from the behavioral genetics literature, we propose that genetic factors *may* influence the tendency of people to engage in entrepreneurial activity in four complementary ways. First, genes may affect chemical mechanisms in the brain to increase the likelihood that people will engage in entrepreneurial activity. Second, genes might predispose people to develop individual attributes, such as extraversion and internal locus of control, that affect the tendency of people to engage in entrepreneurial activity. Third, genes may make some people more sensitive than others to environmental stimuli that increase the likelihood of engaging in entrepreneurial activity. Fourth, genes may influence exposure to environments that are more favorable to entrepreneurship.

We also discuss different ways through which the contribution of genetic factors to the tendency of people to engage in entrepreneurial activity may be assessed. The first approach, known as *quantitative genetics*, estimates genetic and

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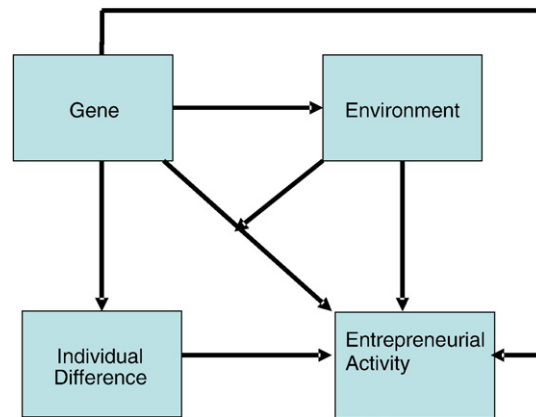


Fig. 1. Mechanisms through which genetic factors influence entrepreneurship.

environmental contributions to phenotypic variance in a population from patterns of genetic relationships among individuals, and usually involves the use of twin and adoption studies (Plomin et al., 2001a,b). The second approach, known as *molecular genetics*, identifies specific genes that contribute to variation between individuals in some social outcome (Ebstein et al., 1996).

Finally, we discuss how research on genetic factors could inform entrepreneurship research. Examples of potential contributions include: informing research on the objectivity or subjectivity of entrepreneurial opportunities, identifying the mechanism through which parental self-employment influences children's propensity to become self-employed (Aldrich and Kim, 2007), and evaluating the validity of the individual differences literature in entrepreneurship (Baron, 2004; White, Thornhill and Hampson, 2006).

2. Introduction

For forty years researchers have examined who becomes an entrepreneur (Gartner, 1988; Bird, 1989; Shane and Venkataraman, 2000; Aldrich and Martinez, 2001; Baron, 2004). While this effort has identified a variety of factors that influence which members of society engage in entrepreneurial activity and which do not (see Shane, 2003, chapters 4 and 5 for a review), one of the most interesting explanations for the tendency of people to engage in entrepreneurial activity – genetic factors – has not been examined. This article seeks to fill this void by introducing an argument for the role of genetic factors into the discussion of who becomes an entrepreneur. Specifically, the article provides a process theoretic explanation for how genes may influence the tendency of people to engage in entrepreneurial activity.

We define a gene as a piece of DNA that is passed from parents to their biological children during reproduction and which influences an observed characteristic of an individual, referred to as a phenotype. Thus, the “genetic factors” that we discuss in this paper are those factors that influence the tendency of people to engage in entrepreneurial activity, which are encoded in DNA and transmitted biologically, as opposed to those factors that influence the tendency of people to engage in entrepreneurial activity, which are not encoded in DNA and are not transmitted biologically.

We propose that genetic factors may influence the tendency of people to engage in entrepreneurial activity in four complementary ways (see Fig. 1). First, genes may affect chemical mechanisms in the brain to increase the likelihood that people will engage in entrepreneurial activity. Second, genes may influence individual differences,² such as extraversion and internal locus of control, that predispose people to engage in entrepreneurial activity. Third, genes may make some people more sensitive than others to environmental stimuli that increase the likelihood of engaging in entrepreneurial activity. Fourth, genes may affect the tendency of people to select into environments that are more favorable to entrepreneurship.

² We use the term “individual differences” to refer to enduring psychological attributes of people in a way consistent with past research on entrepreneurship. This mechanism differs from the first mechanism even though the first mechanism clearly involves differences between individuals because the second mechanism operates through enduring psychological attributes of people and the first does not.

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