## Passage 3　A neuroscientist reveals how to think differently

In the last decade a revolution （　　）has occurred（　　） in the way that scientists think about the brain. We now know that the decisions humans make can be traced to（　　） the firing patterns（　　） of neurons in specific parts of the brain. These discoveries have led to the field known as *neuroeconomics*, which studies the brain's secrets to success in an economic environment that demands innovation and being able to do things differently from competitors. A brain that can do this is an iconoclastic（　　） one. Briefly（　　）, an iconoclast（　　） is a person who does something that others say can't be done.

This definition（　　） implies（　　） that iconoclasts are different from other people, but more precisely, it is their brains that are different in three distinct ways: perception（　　）, fear（　　） response, and social intelligence（　　）. Each of these three functions utilizes（　　） a different circuit（　　） in the brain Naysayers（　　） might suggest that the brain is irrelevant（　　）, that thinking in an original, even revolutionary, way is more a matter of personality than brain function. But the field of neuroeconomics was born out of the realization that the physical workings of the brain place limitations on the way we make decisions. By understanding these constraints（　　）, we begin to understand why some people march（　　）to a different drumbeat（　　）.

The first thing to realize is that the brain suffers from limited resources. It has a fixed（　　） energy budget, about the same as a 40 watt（　　） light bulb（　　）, so it has evolved to work as efficiently as possible. This is where most people are impeded（　　） from being an iconoclast. For example, when confronted（　　） with information streaming（　　） from the eyes, the brain will interpret（　　） this information in the quickest way possible. Thus it will draw on（　　） both past experience and any other source of information, such as what other people say, to make sense of what it is seeing. This happens all the time. The brain takes shortcuts（　　） that work so well we are hardly（　　） ever aware of them. We think our perceptions of the world are real, but they are only biological and electrical rumblings. Perception is not simply a product of what your eyes or ears transmit to your brain. More than the physical reality（　　） of photons（　　） or sound waves, perception is a product of the brain.

Perception is central to iconoclasm. Iconoclasts（　　） see things differently to other people. Their brains do not fall into efficiency pitfalls（　　） as much as the average person’s brain Iconoclasts, either because they were born that way or through learning, have found ways to work around the perceptual（　　） shortcuts that plague（　　） most people. Perception is not something that is hardwired（　　） into the brain. It is a learned process, which is both a curse（　　） and an opportunity for change. The brain faces the fundamental（　　） problem of interpreting physical stimuli（　　） from the senses（　　）. Everything the

brain sees, hears, or touches has multiple（ ） interpretations（ ）. The one that is ultimately chosen is simply the brains best theory. In technical terms （ ）, these conjectures （ ） have their basis in the statistical （ ） likelihood of one interpretation over another and are heavily influenced by past experience and, importantly for potential iconoclasts, what other people say.

The best way to see things differently to other people is to bombard （ ） the brain with things it has never encountered （ ） before. Novelty （ ） releases （ ） the perceptual process from the chains of past experience and forces the brain to make new judgments. Successful iconoclasts have an extraordinary （ ） willingness （ ） to be exposed to what is fresh and different. Observation of iconoclasts shows that they embrace （ ） novelty while most people avoid （ ） things that are different.

The problem with novelty, however, is that it tends to trigger（ ） the brains fear system. Fear is a major impediment（ ） to thinking like an iconoclast and stops the average person in his tracks （ ）. There are many types of fear, but the two that inhibit（ ） iconoclastic thinking and people generally find difficult to deal with are fear of uncertainty （ ） and fear of public ridicule （ ）. These may seem like trivial （ ） phobias （ ）. But fear of public speaking, which everyone must do from time to time, afflicts （ ） one-third of the population. This makes it too common to be considered a mental disorder （ ）. It is simply a common variant （ ） of human nature （ ）, one which iconoclasts do not let inhibit their reactions.

Finally, to be successful iconoclasts, individuals must sell their ideas to other people. This is where social intelligence comes in. Social intelligence is the ability to understand and manage people in a business setting（ ）. In the last decade there has been an explosion （ ） of knowledge about the social brain and how the brain works when groups coordinate （ ） decision making Neuroscience （ ） has revealed （ ） which brain circuits are responsible for functions like understanding what other people think, empathy （ ）, fairness （ ）, and social identity （ ）. These brain regions play key roles in whether people convince （ ） others of their ideas. Perception is important in social cognition too. The perception of someone’s enthusiasm, or reputation （ ）, can make or break a deal. Understanding how perception becomes intertwined（ ） with social decision making shows why successful iconoclasts are so rare.

Iconoclasts create new opportunities in every area from artistic expression （ ） to technology to business. They supply creativity and innovation not easily accomplished by committees（ ）. Rules aren’t important to them. Iconoclasts face alienation （ ） and failure, but can also be a major asset to any organization （ ）. It is crucial for success in any field to understand how the

iconoclastic mind works.