

Finding Your Purpose

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My great academic interest in life has been biology. I am not certain if it stems from my love of the outdoors or the fact that I was raised as one of ten children in a house teeming with life.

There are many big questions encompassed by the study of biology. For example:

What exactly is life?

How do living things function?

How was the great diversity of life created and how is it evolving?

With the challenge of the great diversity of life, how do we classify life?

I love each of these questions, but my favorite question is a combination of them: What is the unique role of each diverse form of life? I believe that every species has an important role to play on our planet.

In All of Their Variety

The diversity of life is astounding. One measure of diversity on our planet, referred to as the species number, is estimated at about 11 million species of cellular life (life that is composed of cells). We have begun to catalog and understand only a small fraction of these species, and there is

life beyond cellular life. The most abundant biological entities on the earth are viruses, estimated to be greater than ten to the power of thirty-one! In fact, Costa P. Georgopoulos, a virologist at the University of Utah, compared the mass of all viruses on the planet with the mass of all humans. Although viruses are microscopic, if we were to pile them up on a giant scale, viruses would weigh more than all of the 8 billion humans on the planet, even if we were all sumo wrestlers.

The abundance and diversity of life means that biologists will always have something to do. It also means that in order to succeed on the planet, a species must have a purpose and place—much like trying to find a place at the family dinner table amid nine hungry siblings.

There are many examples of the unique and essential function that a single species plays and its ecological impact. For example, several studies show that removing the sea otter from a habitat may lead to an increase in sea urchins and a corresponding disappearance of kelp beds. This alters

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wave action and siltation, having dramatic impacts on the species present in the habitat. In these studies the effect the sea otter had on the ecology was more substantial than what was expected from their sheer number.

I study bacteriophages, which are viruses that can infect and kill bacteria. The word *bacteriophage* literally means “to eat bacteria.” Most people think of a virus as something bad or something that makes them sick, but viruses also contribute to the health of our planet by regulating the levels of bacteria in an ecological system. In addition, viruses have useful purposes. They have recently saved the lives of individuals infected with antibiotic-resistant bacteria. In these cases the viruses could infect and kill bacteria that are resistant to antibiotics, providing an alternative form of treatment when there are no other treatment options.

In fact, some of the viruses isolated by students here at BYU are being used to treat a sea turtle, Shelly, who has an antibiotic-resistant bacterial infection. Viruses can be very specific for the type of bacteria they kill, seeking out the bacterial pathogen and leaving the rest of our body full of other bacteria that are actually helping us—and Shelly. And there are a lot of those “good” bacteria. Research shows that we have as many bacterial cells in us and on us as we have human cells. This is referred to as our microbiome. Our microbiome is essential to our health.

Thus both viruses and bacteria—which most people have thought of as bad for so many years—have an important place in our individual health as well as in the ecological health of our planet. This interrelated nature of life is complex and highly variable, as are the individual and essential roles that each form of life plays.

A Unique Role

I have taught biology at BYU for eleven years now, interacting with hundreds of students each year. What has impacted me the most are these same truths: each student has an individual and unique role to play and each student has unique talents and gifts that are not quite the same in any other person. A well-known but beautiful example of this is found in the life of Anne Frank.

On a recent trip to Amsterdam, I was able to visit the secret annex in which Anne’s family hid for more than two years. Although I had read Anne’s diary in school when I was young, there were many aspects of her story that I had never heard about before. These aspects display how Anne came to recognize the role she could play through the use of her talents.

Anne’s family lived in Germany and fled to the Netherlands in 1933, due to the threatening political climate. As the Nazi army moved toward Amsterdam, Anne’s father, Otto Frank, built a small annex in the back of his shop in which the family would live for more than two years, along with the van Pels family and Fritz Pfeffer. The eight of them had to rely on the bravery and generosity of six other individuals who risked their lives to help the family hide and to bring them food rations. These individuals were their friends Johan and Bep Voskuijl, Miep and Jan Gies, Victor Kugler, and Johannes Kleiman.

On Anne’s thirteenth birthday she was given a notebook that she immediately began using as a diary. During the two years of hiding in the cramped space, Anne’s outlet was writing. She wrote many things, including her thoughts, feelings, poems, and tales. While in hiding, the Frank family also listened quietly to the radio for news and plotted the path of the Allied forces as they moved toward Amsterdam. In 1944, while listening to the radio, Anne heard the following advice given by the Dutch cabinet minister Gerrit Bolkestein:

History cannot be written on the basis of official decisions and documents alone. If our descendants are to understand fully what we as a nation have had to endure and overcome during these years, then what we really need are ordinary documents—a diary, letters from a worker in Germany, a collection of sermons given by a parson or a priest. Not until we succeed in bringing together vast quantities of this simple, everyday material will the picture of our struggle for freedom be painted in its full depth and glory.¹

Anne immediately had a purpose. She was inspired to rewrite her diary into a book that she

hoped to share with the world. Over the next four months she worked tirelessly to abridge the last two years of her writings. She rewrote her diary for clarity and replaced real names with pseudonyms for publication. Anne expressed to her family her purpose: after the war, her book on the experience of living in the annex would be published, giving the world a piece of the story of World War II.

Somehow, through pathways still unknown today, the police became aware of the family's hiding place in August 1944. All eight of the individuals in the secret annex were sent to concentration camps. All of the items from the annex were also confiscated. However, Otto Frank's secretary, Miep Gies, visited the annex shortly after the family's capture and was able to retrieve Anne's diary.

Of the eight people in the secret annex, only Anne's father, Otto, survived the concentration camps. After the war he returned to Amsterdam to look for his family, and Miep Gies gave him Anne's diary. Anne's father worked hard to get it published. He was rejected several times, and it took him two years to get it published, but he never gave up. Today millions of people have read the diary. It has inspired countless individuals, including survivors of similar unimaginable difficulties.

I am inspired by Anne's story, her writings, and her belief that one person can make a difference. But I also know that it is not just her story. It is the story of her family, including her father, who worked to keep the family safe for so many years and who, after so much sorrow, was blessed to fulfill his daughter's wishes and to publish Anne's diary. It is the story of the six other individuals who risked their lives to hide the family in the annex, including Victor Kugler and Johannes Kleiman, who were also taken captive by the police. It is the story of one person's great talents—Anne's—interacting with many other great talents.

Our Own Individuality

The big question of life is this: How do we find our own individual talents and purpose in life? During my time at BYU I have spoken with many students who feel unsure of their future and the

path that they should take. Too often we compare ourselves to the one person who seems sure of their path rather than to the twenty who, like us, are searching for their path. What I do know is that in all cases our ability to utilize our time, energy, and talents is completely dependent upon our Father in Heaven and on our Lord and Savior, Jesus Christ.

Not only are we dependent on Them to become our best selves, but this is Their greatest desire for us. They have literally done everything that can be done in order to help us succeed in this life and in the next. Our Savior has given His life in the single most powerful act of love to ever occur: the Atonement. Through the Atonement each of us can find the best use for our talents and develop those talents beyond what we would ever be capable of alone. I believe that there is no greater gift than to help someone develop to the fullest of their potential, to become the person they want to be, and to use their talents to the fullest extent.

I bear my testimony to you that our Father in Heaven cares for each of the students at BYU as individuals and that He will help you find your place in life. Some of the greatest spiritual experiences of my life have come from praying for students who have discussed a problem with me. I would like to share an example with you.

On three separate occasions I was searching for funds to enable a student to be trained in scientific research. Each one of these students had approached me with a unique position as well as a great desire to be trained and to use their talents. However, in each case I did not have the funding to accept another student. Knowing that each student needed the funds immediately and considering that it usually takes six to twelve months for me to get grant funding, I turned to prayer.

On each of these rare occasions, a funding opportunity came to me out of the blue with little effort on my part and within a few days of my praying for these students. Let me tell you that this does not happen! Nor is it likely to happen to me again, unless the Lord is moving mountains on a student's behalf. Scientific research funding is exceptionally difficult to come by. Normally

I spend several months and many long hours searching out appropriate grants, writing proposals, and obtaining the necessary preliminary data for funding. I know that it was the Lord’s hand in each of these three instances and that when the students and I had done all we could, doors were opened to allow the students to develop their talents. These remarkable experiences and several others have given me a strong testimony of our Savior’s great love and personal interest in each of you.

Having said this, I don’t want to mislead you by saying that life will be easy or that all of our prayers will immediately be answered in such an obvious way. But what I do know is that when we rely on our Savior and ask for His help, He *will* help us, and we can have our “peace [be] as a river, and [our] righteousness as the waves of the sea” (Isaiah 48:18). Recently I have noticed the choice of words used in this scripture. It does not say our peace will be as a still pond. I believe this is on purpose. I believe that if we are trying to develop and use our talents, we will have help from our Savior but will still encounter difficulties.

In addition, we are not perfect and we make mistakes. This is perhaps the flowing of the river of which Isaiah spoke. If we are continually moving forward—over all of the rocks and through the twists and turns—and relying on the Savior, He will be there for us to help us and guide us. I bear my testimony of this. The Holy Ghost has warned me away from poor decisions. He has warned me from pathways that lead to sin and unhappiness. Our Heavenly Father is most generous, forgiving, and merciful. He will help us to overcome our weaknesses. They are never too great, and it is never too late, but we need to seek Him.

The Effort of Seeking

A few years ago I was in the grocery store when I felt a little bit of pressure on the side of my pant leg. It was a young child of two or three who had obviously gotten my pant leg mixed up with his own mother’s. He had instead grabbed my leg and was walking by my side. When I stopped and looked down, the young child of course looked up. I could see the moment in his expression

when he recognized his error, and he immediately panicked. Just like this young child, we too can be deceived and lose our way. We need our Heavenly Father, Jesus Christ, and the Spirit of the Holy Ghost. Jesus Christ is the “author and the finisher of [our] faith” (Moroni 6:4). Only by the Spirit will any of us receive confirmation of the truth of any matter, including our individual worth and the love that our Father has for us. Our Father is no respecter of persons; He loves each and every one of us. He knows our potential and unique talents better than anyone. There is no substitute pant leg.

Seeking out truth through the scientific method of observation, hypothesis, and experiment is what biologists do. I leave everyone, including myself, with the admonition of Alma to experiment upon the word—or, in other words, to ask the Lord about our individual worth, our talents, and the pathways that we should go on to become our best selves. I challenge us to plant a seed, to nourish it, and to let it grow.

But if ye will nourish the word, yea, nourish the tree as it beginneth to grow, by your faith with great diligence, and with patience, looking forward to the fruit thereof, it shall take root; and behold it shall be a tree springing up unto everlasting life.

And because of your diligence and your faith and your patience with the word in nourishing it, that it may take root in you, behold, by and by ye shall pluck the fruit thereof, which is most precious, which is sweet above all that is sweet, and which is white above all that is white, yea, and pure above all that is pure; and ye shall feast upon this fruit even until ye are filled, that ye hunger not, neither shall ye thirst.

Then, my brethren, ye shall reap the rewards of your faith, and your diligence, and patience, and long-suffering, waiting for the tree to bring forth fruit unto you. [Alma 32:41–43]

Notice how many times Alma entreated us to have patience. If you find yourself struggling at times, or if you are in the midst of your long-suffering, take heart and have faith. Believe that you have a divine purpose. Believe that you have unique talents that are unmatched in the world. Work hard and pray. The Lord will help. He will

direct you to your best self—to your own ecological niche. He will open doors for you. You will find what He wants you to do, and you will bless countless others in doing it. In the name of Jesus Christ, amen.

Notes

1. Gerrit Bolkestein, radio address, Radio Oranje, 28 March 1944; quoted in *The Diary of Anne Frank: The Critical Edition*, ed. David Barnouw and Gerrold van der Stroom, trans. Arnold J. Pomerans and B. M. Mooyaart-Doubleday (New York: Doubleday, 1989), 59.

Suggested Reading

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Karl W. Kenyon, *The Sea Otter in the Eastern Pacific Ocean* (Washington, DC: U.S. Bureau of Sport Fisheries and Wildlife, 1970).

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