

Spring 2015

# Liquid Unhappiness: the Story of an Alcoholic's Son

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## *THESIS ABSTRACT*

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Major: Biochemistry

Liquid Unhappiness: The Story of an Alcoholic's Son

Advisor's Name: Dr. Stacy Chamberlin

Reader's Name: Dr. Nick Kallan

Alcohol consumption has been a persisting event for much of recent human history. The prevalence of alcohol consumption has continued to rise with no signs of slowing anytime soon. In the United States, 86.8% of people over the age of 18 willingly admit to having consumed alcohol at some point in their lives. 70.7% of which admit having consumed alcohol in the past year, and over 50% of which have consumed it in the past month. Also rising in prevalence, is the amount of households where a child is being raised with at least one parent that has an alcohol related issue (10%).

Recognizing the prevalence of alcohol consumption world-wide in company with being raised by an alcoholic personally, this thesis aims to answer personal questions of identity while looking at the chemistry of alcoholism. This thesis in particular, is the author's personal narrative intertwined with an in depth look at what it means to be an alcoholic. Rigorous research and reflection sheds light on alcohol's role in society, and its impact on not only its consumers. In doing so, this thesis provides meaning as to how alcoholic's and those who are affected may respond adequately.

*Liquid Unhappiness: The Story of an Alcoholic's Son*

*A thesis submitted to*

*Regis College*

*The Honors Program*

*in partial fulfillment of the requirements*

*for Graduation with Honors*

*by*

*Stephan A. Kelley III*

*May 2015*

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## *PREFACE*

Constantly in today's society we are surrounded by alcohol consumption. There are numerous ads on TV for the plethora of products, many liquor stores appear every few miles, and nearly all restaurants sell alcohol as well. I grew up in a house hold where my father was an alcoholic. My thesis is an attempt to make sense of what it means to be raised by an alcoholic. In addition to my personal transformation, the biochemistry of alcohol metabolism better allows us to understand such a mysterious drink. I also, explore recovery strategies for alcoholics in hope to truly understand what my father had gone through many years ago when I was merely 13 years-old.

The number of people that I wish to acknowledge for their help with this project is tremendous. First off, my advisors Dr. Stacy Chamberlin and Dr. Nick Kallan were key contributors to my success with this project. Also, members of the Honors program including: Dr. Thomas Bowie, Dr. J. Thomas Howe, and Mr. Martin Garner all played a vital role in keeping my project moving despite my desire to call it quits. Finally, my peers in the honors program are worth noting in that they have truly opened my eyes to a grander horizons these past four years



## *I. My Hero*

I was no different than most young boys – my hero was my dad. He is the happiest person I know, and his mere presence seems to brighten up any room he enters. He is kind and generous to everyone that he comes in contact with, which is another reason why I look up to him with great admiration. Although he travels a lot, the smaller amount of time that we do spend together is even more meaningful. Every day when he leaves the house for work I yell out my window, “I love you Dad!” and without hesitation he responds, “I love you too, Stevie!” Being a family man is only the beginning. His professionalism is desired by many. He is a sales representative for a company covering the Eastern half of the United States. People all over the country have told me what a great man my Dad is, and I believe them. Being honest and relatable are skills that he practices in business, and my dad used to tell me: “People do business with people they like, remember that, Stevie.” I will never forget.

### Memory One: Softball Country

Since my father was constantly traveling for work, the time we spent together meant the world to me. Basically, I wanted to be part of anything he did. If he loved the University of Southern California, then gosh darn-it so would I! Just being with him brought me great joy.

My father loved softball. He would play as many nights a week as he could. Naturally, I loved softball, too! Every day my Dad had softball I would continually beg my Mom if I could go with him that night. She would claim that I was too young to be out that late, but if I took a nap during the day I could go! Resisting, I would pretend to take a nap for an hour, and then walk out of my room rubbing my eyes roughly tricking my Mom into thinking that I had been asleep for the past hour. She finally would cave in and give me permission to go with my Dad to softball that night. The truth was, while I would normally have loved a nap, I just could not sleep in my room thinking about getting to go to Softball Country that night with my Dad.

Softball Country was a rough place. It was five softball fields conveniently stuffed on 64<sup>th</sup> between Pecos and Federal (if you are familiar with the North Denver area). The parking lot was not paved, and the outfields consisted of green carpet squares telling players where to stand mixed with the patchy grass. The infields had more dips and holes than a three year olds sandbox. To me, however, Softball Country was heaven. There was a concession stand selling all of the food and drink that my Mom never allowed me to have, and my Dad just handed me money whenever I asked. Watching my Dad do well night in and night out added to the aura of Softball Country, and it became a place that I associated with happiness. It was also a place that no matter how bad my day was, I was happy going there with my Dad.

As soon as we got there my Dad and I would hit in the cages. This was my favorite part. He would laugh and smile as he would watch me swing at the slow 45

m.p.h. bright yellow “baseballs.” He would count how many I was able to hit into fair-territory (he was the umpire, of course). I loved this game and looked forward to it each time we went to Softball Country. Next, we went inside and grabbed food and drinks. My Dad’s signature drink was a \$2.75 32 oz. Coors Light. He would usually drink two of these or more as he played. I was partial to the Air Heads and Pixie Sticks, myself; the sugar rush provided me untapped energy throughout the night. We would then go play catch together in preparation for his game. When the game started I would sit and watch from the bench admiring his athleticism and grace. When a foul ball was hit I was the one to chase it down and bring it back to the dugout. Perhaps I should have taken my mother’s advice about not staying out too late, as I would often fall asleep on the steel dugout benches at 11 o’clock at night. Guys on the team would cover me with their jackets as blankets. Even more memorable was the fact that everyone at Softball Country seemed to know my dad and wanted to talk to him and have him play on their team. I felt extremely proud of this in particular.

#### Memory Two: Rose Bowl 2006

My Dad and I are both avid University of Southern California fans. My Dad grew up in Southern California and passed his passion for the team and school onto me. In the 2005-2006 college football season, USC had a magnificent football team. My Dad and I sat week in and week out watching the team bulldoze the competition. Young men like Matt Lienert, Reggie Bush, Dwayne Jarret, Steve Smith, Taylor Mays, and Colorado’s very own Lendale White became heroes in the Kelley household come Saturday

afternoons. My Mom would usually lock herself in her room attempting to read and watch her alma mater CSU play. Her success was usually overshadowed by the loud cheers and the boisterous yells from the two of us.

At a dinner in November my Dad asked me if I thought USC was going to win the National Championship. I certainly thought they would, as long as they could beat an extremely talented Texas team led by Vince Young. His follow-up question, however, completely caught me off-guard: he asked if I wanted to go the game that year! Of course I wanted to go watch the team I had grown to love, with the person I loved most, play for the National Championship. If you are familiar with college football, then you are probably aware that in 2006 the National Championship game was decided by a committee, and my Dad promised that if USC made it to the game we would get tickets.

The last three football games USC played that year were the most nerve racking games I can remember. Beating two, top-25 ranked opponents in their last three games, the Trojans had sealed their fate to play in the Rose Bowl for the 2006 National Championship game. I looked at my Dad and reminded him of his promise (as if he had forgotten). That next week he purchased four tickets at face value for \$275.00 apiece! My cousin lived in Pasadena California at the time, and he knew a California congressman who was able to get us the tickets. My Dad's good friend whom he did business with and his son were also going with us, and my Dad's work was considering it a business trip. Although their family members were Texas fans, it was still an enjoyable rivalry to have on the trip.

On December 30, 2006 my Dad's friend Mark and his son David flew into Denver. From there we were on a road trip to Pasadena, California, but not without a few stops along the way. As it turned out, our first stop after eleven hours in the car was Sin City: Las Vegas, Nevada. I had never been to Las Vegas before, and the magical bright lights enhanced the mystical experience the trip seemed to already have. We stayed at the Luxor, which I happened to think was the nicest hotel because it was a glass pyramid. I remember playing in the arcade, swimming, and then going to bed early because I knew we continued on to California the next day. My dad and his friend Mark decided they were going to approach their night a little differently... by gambling and drinking until sunrise.

The next day we were up and on our way bright and early, and Mark's son David was driving because our Dads were too "tired". I preferred this because now my Dad and I sat in the back of his Tahoe watching movies for the remainder of the road trip.

On New Year's Eve, we camped out with my cousins on the side walk to ensure our spot for the Rose Parade. I remember being so cold sitting up in my chair, wrapped tightly in a blanket after we had already celebrated bringing in the New Year. Next thing I know, I woke up, it was morning, and the floats were starting to come by! The floats were incredible to see in person, handmade using thousands of roses. This was yet another one of those mystical moments on a trip with my Dad that I thought was simply enchanting.

The next day was January 2<sup>nd</sup>, my birthday. I had never celebrated a birthday with my Dad's side of the family, since they lived in California. Boy, did they show me a good time. My cousin invited the entire family to her small home in Pasadena and cooked lasagna. It was pleasant getting to see this side of my family, as I often only saw my Mother's side, and it was meaningful and memorable getting to celebrate that night with the aunts, uncles, and cousins I usually am separated by 1,000 or so miles.

Finally, January 4<sup>th</sup>, 2006, the day of the National Championship game. I was terribly excited, and I barely slept the night before. My Dad, however, slumbered with ease – no doubt with a little help from Coors Light and Jack Daniels mixed with Coke. Early the next morning I shot out of bed; sleep was not going to keep me from experiencing this great day. I went to the pre-game ESPN tailgating party with my Dad, where Big and Rich would be performing (we got those passes from the congressman, as well). It was an incredible day with my Dad. Smiles, laughs, pictures, nothing could ruin a day like this.

As it turned out, USC lost to Texas 38-41, but to my surprise, I was not heartbroken at all. My Dad and I decided to walk the mile from the stadium to my cousin's home in Pasadena. The walk was filled with laughs and awe, as we were both amazed at what we had just been part of. I had just witnessed arguably one of the greatest college football games ever played, and I felt nothing but grateful for experiencing such an awesome event. To this day, my memory of that week-long road trip with my Dad is one of the best of my life.

### Memory Three: Basketball Practice

My Dad and I both loved sports. It didn't matter what the name of the game was, if it was a sport we enjoyed it. My favorite sport of them all ended up being basketball. My Dad never played basketball growing up, so he was new to the sport, as was I. Like father like son, we both dove right in. I began playing the sport in the 4<sup>th</sup> grade in a recreational setting, and I had the time of my life! I simply fell in love with sport overnight. I began to play more competitive basketball each winter, and my Dad was always the taxi that took me to practice.

I always recognized how others were drawn to my Dad, and this proved to be true even in around my basketball games.. Parents, kids, players, coaches - they all enjoyed having him around. He discussed business and politics with other parents. He conversed with the coaches about drills we could do and improvements I could make. Kids would even lobby for his attention (usually because he always carried Jolly Ranchers in his coat pocket).

As the level of competition rose, so did my need for the taxi service. Without hesitation my dad drove me to Golden on Tuesdays and Thursdays, and to the high school Mondays, Wednesdays, and Fridays. Saturdays we went to a private gym, and he helped me work on drills, rebounding, and other skills to hone my game. Even in 9<sup>th</sup> grade when I was unable to drive, he drove a friend and me to practice every single day. He wasn't allowed to stay and watch practice, though, because this was now high school basketball, but when he would come back into the gym near the end of practice the whole

team would yell, “STEVE!!!” as he entered. As always, people were just drawn to my dad, and he made a strong connection with each player on the team. Basketball reminded me of how I admired my Dad’s connection with others.

Memory Four: September 17<sup>th</sup>, 2007

September 17<sup>th</sup>, 2007 was not a happy day. Although I do not have many visual recollections of this day, I vividly recall a poignant conversation with my dad. He uttered a four-word sentence that turned my world upside down:

“I am an alcoholic.”

-Steve Kelley Jr.

He didn’t hesitate, he didn’t stutter, he simply said it. To this day, I have no idea what I felt in that moment, or even what to feel about it now. From that moment forward nothing was the same.

For some people, it may not come as a surprise when a loved one first admits to being an alcoholic; but when my Father told me, it was a complete surprise. I was confused. I was hurt. I was mad. Alcoholics were bad people. They love the bottle above all. How could I have been tricked by him so easily? How could he do this to me? Needless to say, as a young boy, my strong emotions overflowed.

One has to remember that as a kid you don’t think the same as an adult, and the unknown world is very complex to comprehend. I never thought my Dad had a drinking problem. I thought everyone’s Dad drank at night when they finished work; drank three



32 oz beers at Softball Country; had their sons pour them two or three Vodka-Sprites (80% Vodka/ 20% Sprite, of course) a night. I had no idea that this wasn't normal. On 9-17-07, when he told me "I am an alcoholic," he followed it with "I have taken my last drink." The second part was true. He has not had a drop of alcohol since then. As a kid, though, it didn't matter. I felt tricked and betrayed, and that was beyond redemption. That part has taken me a lifetime to overcome.

To me, when my father claimed to be an alcoholic, it meant that he loved alcohol more than me. Even worse, I thought that it was my fault. From that day forward I began pushing him away, saying things such as, "You aren't my Dad, you are just a friend to me." I continued to refer to him as just a "friend" for years. After feeling so betrayed I did not want to have to answer to him as a father. If he was not my Dad, then I was not forced to obey his word. The way I saw it, he tricked me. I had loved so deeply what he was to me and the man he was to others, that when I learned he was drunk the entire time, I felt he was a fake; as if it wasn't him that the people loved, but the alcohol. He tricked all of us.

#### Memory Five: High School

Throughout the rest of my time in high school, my relationship with my father weakened significantly. After barely being able to keep away from him as a child, we seemed to grow further apart as I grew up. However, I didn't lose my love for him altogether. My dad was an open book after he quit drinking. Whatever I asked him, no matter how difficult the question, he would do his best to attempt to answer it. In fact, our

open discussion about drugs led to my dream of wanting to become an anesthesiologist.

One day at home we sat down and he gave me the rundown of his life.

It began at the age of ten, he said, when his parents encouraged him to smoke pot for the first time at home with them in California. Naturally, looking up to his Dad the way I looked up to him, he took the joint and smoked it. This led to him starting to skip class more frequently to get high with his friends. He expanded his thirst for drugs at the age of 16: cocaine. He described that cocaine “made you feel like superman,” and that it made you feel like you could do anything. His parents had a rough divorce, as his mother was a nasty drunk. He said he knew how not to act from watching her, and that is why he was such a high functioning alcoholic. At age 19, he was regularly drove from California to Evergreen, Colorado (his new home now) to smuggle cocaine. He made very good money doing this, and he described it as the easiest money he ever made, claiming that once you make that easy, dirty money, it is difficult to quit. Sheer luck steered him away from selling drugs. One day he was extremely strung out, just returning with a shipment of cocaine. He began growing more paranoid that the cops were on to him. The feeling grew so great, that he began flushing kilograms of cocaine down the toilet. He never returned to California for the next shipment.

In his early twenties, my Dad did return to California, and his new vice: methamphetamine. He was homeless for three years, often sleeping at his older sister’s house sharing a room with his niece. Eventually, he moved back to Evergreen, where he met my mom. In three words: she saved him. And he has been off hard drugs ever since

they met when he was 26. His drinking, however, didn't stop. While my dad's alcohol use was partly just the result of a guy who had too much fun, he could never say no to a party. And when he began working at home, the drinking got worse. He would conduct an important sales call potentially worth hundreds of thousands of dollars, and he needed to slip some vodka in his orange juice while my mom was in the shower because his shakes were so bad.

Things came to a head on September 17<sup>th</sup>, 2007. My dad got laid off, and he thought it was because of his drinking. In hindsight, the economy was going into a tailspin, and his layoff was probably more a result of the general downturn. Nevertheless, he quit cold turkey that very day. He had promised himself that he would never become like his mother. By that, I mean he would never let drinking interfere with his everyday life. On this day he saw that drinking had become a larger part of his everyday life than he could have ever predicted.

After learning about the events and darker side of my dad's life, it sparked my interest in science. More precisely, I was interested in medicine and drugs, and from that day on in 11<sup>th</sup> grade, I decided that I wanted to be a doctor/anesthesiologist. I knew this a long time ago, but I never realized why I wanted to do those things until recently.

#### Memory Six: The Struggle

This entire section is titled "My Hero," and it's a hard day in anyone's life when you watch your hero cry. My Dad was done drinking, but he wasn't the same. It had taken the life right out of him. The happiest, most fun, most outgoing guy I knew was no

more. The alcohol had used his body to host one hell of a party and then left with a vengeance. The struggle to quit was substantial, and I still see him fight it today.

Aside from the shakes and physical weakness that alcohol withdrawal left my Father, the first time I ever saw my Dad cry was a rough day. A week or so after he had quit drinking I came home from school, and he was sitting in his office. His office symbolized success for me. I recall countless hours of him working, selling on the phone as his voice rumbled confidently throughout our house. His head was buried in his hands as he cried. I don't think I have ever felt as sad as I did that day. I went into his office and hugged him. We cried together. Listening to him cry over "what could have been" if it weren't for drugs and alcohol was a hard thing to swallow. My hero was weak. Now I needed to be the hero. I turned to science in the hope that I could understand the wonder of drugs and redeem my father's worst downfall.

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## II. *Alcohol Metabolism*

At this point, my thesis will begin discussing the broader scope of alcohol consumption. To do this I will use the article “Alcoholism: A Systems Approach From Molecular Physiology to Addictive Behavior” by Rainer Spanagel. Alcohol has been and will continue to be consumed by humans worldwide (Spanagel 2009). In Europe, 100 billion euros is spent annually on alcoholic beverages. Furthermore, this translates to 10 liters of pure ethanol ingested per capita. Notably, Luxemburg then has the highest ethanol consumption per capita at 13 liters! In North America the average amount of alcohol consumed annually is 8.5 liters of pure ethanol (Spanagel 2009). However, interestingly enough, humans are not the only creatures on earth that consume alcohol. Pentailed tree shrews are mammals that closely resemble today’s modern primates who lived more than 50 million years ago (Spanagel 2009). Pentailed tree shrews’ main source of food was nectar from the bertam palm *Eugeissona trists*. This plant contains alcohol concentrations of roughly 3.8%, which is comparable to a modern beer (Spanagel 2009). The shrews then were consuming intoxicating amounts of alcohol daily, and they most likely had developed metabolic tolerance, without suffering from negative consequences (Spanagel 2009). This may provide support for the point of view that consuming alcohol is an evolutionary trait embedded deep in our DNA and resembles normal behavior for humans today. Zooming back out, 10-20% of alcohol consumers suffer from chronic alcohol use and abuse, which contributes to damaged organs and immune functions (Spanagel 2009). Alcohol consumption in adolescence is also a problem, affecting roughly 30% of adolescents in

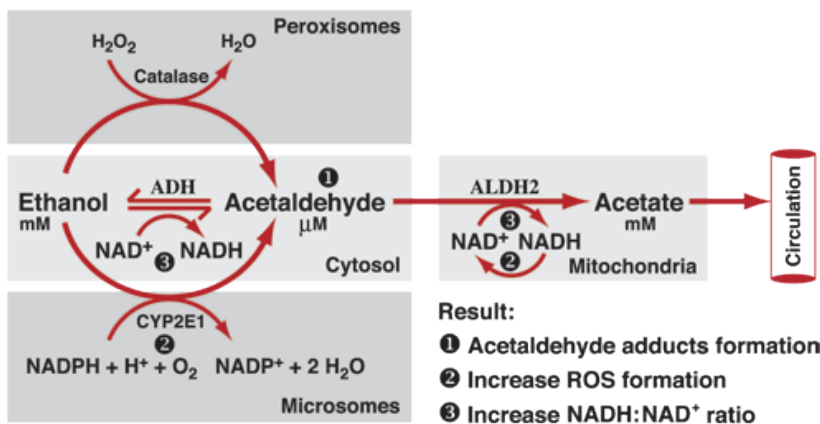
various European countries (Spanagel 2009). The trouble with adolescent binge drinking is that it increases the susceptibility to stress-induced alcohol consumption and alcohol addiction in adulthood (Spanagel 2009). In fact, alcohol-related deaths are estimated at 3.2% of all deaths worldwide (Spanagel 2009). Furthermore, people often use alcohol as self-medication for other psychiatric disorders, like anxiety and depression. This commonly leads to alcohol addiction, in which alcohol use pervades all life activities of the user (Spanagel 2009). Despite all of the cons to alcohol consumption there are some pros. Moderate alcohol consumption can lead to reduced risk of coronary heart disease, type 2 diabetes, and some types of cancer (Spanagel 2009).

Next I will discuss genetics. To do this I will be using the Eighth Edition Genetics Analysis of Genes and Genomes by Daniel Hartl and Maryellen Ruvolo. DNA is the code for who we are as people. I will use the text to discuss the biology of genetics. First DNA is unwound and transcribed to RNA. From there the RNA can be translated into proteins (Hartl & Ruvolo 2012). Two proteins in particular are specific to alcohol consumption: alcohol dehydrogenase and aldehyde dehydrogenase. These are the enzymes that allow us to metabolize the ethanol we ingest.

In his paper "*Genetic and Environmental Influences on Alcohol Metabolism in Humans*," Ting-Kai Li wrote that discusses how both genetics and our environment affect alcohol consumption. For example, ethanol absorption from the stomach varies with varying concentration of alcohol from beverage to beverage. Another effect is the food you consume prior to ingesting ethanol (Li 2001). Both body height and weight also effect alcohol metabolism. In addition, our DNA contains genes that code for varying levels of the enzymes

responsible for metabolizing ethanol (Li 2001). Finally, the ratio of NAD<sup>+</sup> to NADH is important in that they are cofactors during ethanol metabolism; thus being in the fed or fasted state will affect the rate of metabolism (Li 2001). NAD<sup>+</sup> and NADH are important cofactors in many metabolic pathways, which means that alcohol metabolism will have an effect on other metabolism in the body, as well. For example, in glycolysis and gluconeogenesis, NAD<sup>+</sup> and NADH are both needed by the enzyme glyceraldehyde 3-phosphate dehydrogenase to take glyceraldehyde 3-phosphate to 1,3-bisphosphoglycerate. The citric acid cycle also uses NAD<sup>+</sup> as a cofactor for enzymes such as isocitrate dehydrogenase and  $\alpha$ -ketoglutarate dehydrogenase. In oxidative phosphorylation, NADH is used by complex I to help produce energy for the cell. All of these pathways overlap and communicate with one another through cofactors and product regulation. What do these pathways say to one another one might ask? Well, in fact, they say a lot. Now consider someone who has been drinking. Alcohol dehydrogenase and aldehyde dehydrogenase are going to be working hard to metabolize the ethanol in your body. In doing so these enzymes are going to be consuming a large amount of NAD<sup>+</sup> taking it away from other metabolic pathways. First, glycolysis will slow tremendously as NAD<sup>+</sup> is nowhere to be found and is being consumed mainly for alcohol metabolism. Pyruvate is one of the end products of

glycolysis and the starting material for gluconeogenesis. However, you aren't going through glycolysis efficiently and the little bit of pyruvate you are creating is not going to gluconeogenesis. Instead, it is going from pyruvate to lactate, a process that uses NADH and spits out NAD<sup>+</sup>. It does this so it can create even more NAD<sup>+</sup> for the metabolism of alcohol (reference Figure 1). With the liver unable to go through gluconeogenesis, it will be unable to



maintain you blood glucose homeostasis. This is bad because when your liver cannot deliver glucose to the blood ketobodies are released to help out. Ketobodies work, but they damage cells and cause impaired function in the brain.

Figure 1. Basic alcohol metabolism that occurs in the liver upon consumption of ethanol, or alcohol.

Adapted From: <http://www.hamsnetwork.org/images/threeenzymes.gif>

Another pathway effected is the citric acid cycle. The citric acid cycle will not be able to run as it needs NAD<sup>+</sup> to create energy for the cell. The oxidative phosphorylation pathway on the other hand uses NADH and spits out NAD<sup>+</sup>. This pathway is most likely working, but the NAD<sup>+</sup> does not go to the metabolic pathways we want it go. It too, produces NAD<sup>+</sup> for further alcohol metabolism. This interconnected web of metabolism it what makes alcohol consumption so dangerous. If enough alcohol is consumed the body will eventually just shut down whether that be your conventional passing out or alcohol poisoning.



Let's take a closer look at the two major enzymes responsible for alcohol metabolism: alcohol dehydrogenase (Figure 2) and aldehyde dehydrogenase (Figure 3). First, ethanol is ingested through various alcoholic beverages where it can be absorbed into the blood. To metabolize this ethanol undergoes a reaction with alcohol dehydrogenase which is the enzyme responsible for oxidizing ethanol to acetaldehyde. The chemical reaction to do this can be

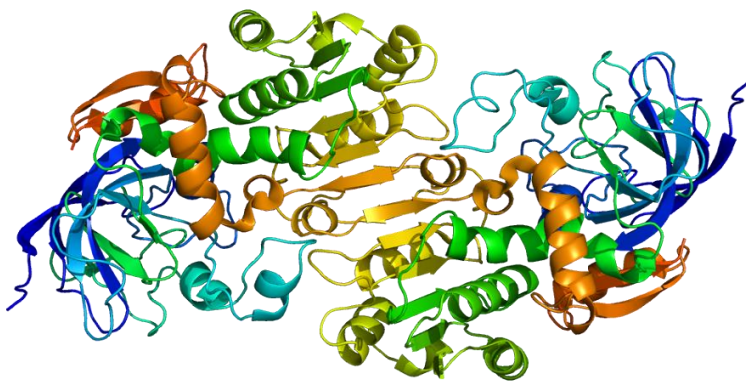


Figure 2. X-ray crystallography of alcohol dehydrogenase. This is the first enzyme in alcohol metabolism.

Adapted From:

[http://upload.wikimedia.org/wikipedia/commons/a/a5/Protein\\_ADH5\\_PD\\_B\\_1m6h.png](http://upload.wikimedia.org/wikipedia/commons/a/a5/Protein_ADH5_PD_B_1m6h.png)

categorized as an oxidation reaction (Hoog 1992). The active site of alcohol dehydrogenase contains a threonine important to the reaction in that it is able to perform low barrier hydrogen bonding with ethanol leading to the deprotonation of the

hydroxyl group (Hoog 1992). This leads to the formation of a carbonyl which kicks off a hydride which is accepted by  $\text{NAD}^+$  which is an excellent oxidizing agent (Hoog 1992). To prove that Thr was important and participating in the active site of alcohol dehydrogenase an experiment was done mutate Thr48 into first a serine, and second an alanine (Hoog 1992). The results showed that the enzyme mutated to Ser still had enzymatic activity. That is because Ser has the ability to also perform low barrier hydrogen bonding with ethanol leading to deprotonation (Hoog 1992). The mutation of Thr to Ala lead to no enzymatic activity because Ala is unable to perform low barrier hydrogen bonding with ethanol (Hoog 1992). This proved

that Thr and its ability to perform low barrier hydrogen bonds is vital to the mechanism of oxidizing ethanol to acetaldehyde.

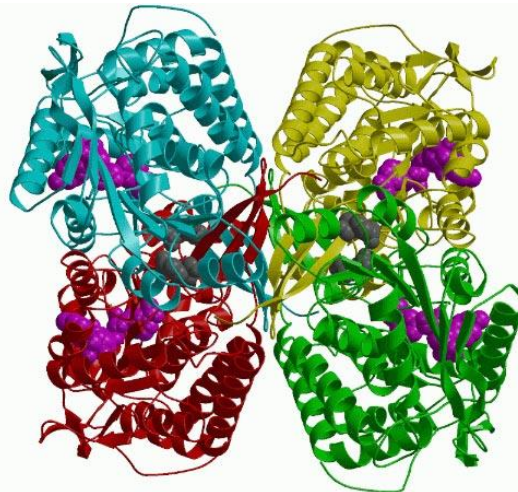
Alcohol dehydrogenase exists in multiple isozymes that differ in their kinetic properties (Ehlers 2012). Polymorphisms within the genes that encode for these isozymes vary in allele frequency between ethnic groups meaning that certain groups may have increased risk of alcohol dependence (Ehlers 2012). The study they did looked at Mexican and Native Americans. The results showed that polymorphisms in ADH1B are protective against alcoholism in both populations. However this does not explain that high alcoholic rate of these populations (Ehlers 2012). This may provide evidence that the environment triumphs genetic factors, well at least for this particular case.

Next there is aldehyde dehydrogenase (Figure 3) which is the enzyme responsible for oxidizing acetaldehyde to acetate. The active site of aldehyde dehydrogenase has two main

Figure 3. X-ray crystallography of aldehyde dehydrogenase. This is the second enzyme involved in alcohol metabolism taking acetaldehyde to acetate.

Adapted from:

<http://www.farmlandbirds.net/sites/default/files/xray-4%5B1%5D.jpg?1357673760>



important residues. The first important residue is cysteine and the second is glutamate. As

acetaldehyde enters the active site it does so, like alcohol dehydrogenase, with NAD<sup>+</sup> as a cofactor. First the deprotonated thiol from Cys attacks the carbonyl carbon of acetaldehyde.

After, a resonance shift and reposition, a hydride leaves and accepted by NAD<sup>+</sup> generating NADH. Then Glu attacks a proton from a water molecule which then attacks the carbonyl carbon of the enzyme-substrate complex. Again, there is a resonance shift and reposition which results in deprotonation of the final hydroxyl proton regenerating the thiol on Cys and forming acetate simultaneously (Tsybovsky 2011). To study which residue is responsible for binding the coenzyme to the enzyme, a mutation was made. Glu673 was mutated to an alanine which resulted in an irreversible binding of the coenzyme (Tsybovsky 2011). This showed that the binding affinity of the coenzyme is from glutamate. Now when Cys707 was mutated to alanine, the enzyme would bind either NAD<sup>+</sup> or NADH proving that Cys707 is responsible as a sensor for the coenzyme's redox state (Tsybovsky 2011).

It has been noticed that different ethnic groups metabolize alcohol at different rates. In addition, scientists have noticed that Asians tend to metabolize alcohol slower than other ethnic groups. Roughly half of Chinese, Japanese, and Korean persons have a deficiency of the low-K<sub>m</sub> mitochondrial aldehyde dehydrogenase (ALDH2) (Wall 1997). The deficiency of ALDH2 is inherited in the ALDH2\*2 allele (Wall 1997). This is a dominant allele that when expressed either fully or partially results in less active mitochondrial aldehyde dehydrogenase. The problem this introduces is that you are unable to convert acetaldehyde to acetate; there will be a buildup of acetaldehyde and ethanol in the body which are harmful to the cells and functionality of the body. Homozygotes with this mutation are extremely sensitive to alcohol consumption. They have tachycardia, hypotension, and vomiting after ingesting a moderate amount of alcohol. Heterozygotes are also sensitive to alcohol consumption, but not as sensitive as homozygotes (Wall 1997). And of all alcoholic Asians only 12% of them possess this mutant whether it is

heterozygote or homozygote (Wall 1997). This evidence then shows that genetics can play a large role in our lives in regards to alcohol consumption (despite Mexican and Native American polymorphisms seen prior).

An interesting thing to note at this point is that NAD<sup>+</sup> is a cofactor in alcohol metabolism. This means it will affect other metabolic processes such as glycolysis and gluconeogenesis.

Glycolysis takes glucose and through a multistep mechanism creates pyruvate and ATP.

Pyruvate then has many fates, one of which it becomes lactate. Lactate is not very useful to the cell so often it reverses to go to pyruvate in which gluconeogenesis is started. Gluconeogenesis is the process of going from pyruvate to create glucose to be released in the blood. However, NAD<sup>+</sup> is a cofactor of this reaction. NAD<sup>+</sup> meanwhile is being used up by alcohol and aldehyde dehydrogenase. This then does not allow for gluconeogenesis as lactate is unable to be made into pyruvate resulting in hypoglycemia (low blood sugar).

At this point in my thesis I want to shift away from all of the biochemistry of alcohol metabolism. I think an excellent transition from alcohol metabolism to sociologic effects on teenagers would be to discuss the dangers of underage drinking. I could discuss how the brain has not fully developed and the ketonebodies that your brain runs on while intoxicated, kills cells and stunts future growth of the brain. Now, I want to focus on growing up in a world where we are surrounded by alcohol consumption. I want to focus on adolescences and the effect that an alcohol driven world has on them. I still have not completely narrowed down what this part of my thesis will look like, but I have some strong focuses. I just want to read different studies on how teens are affected by alcohol. When do they begin to drink? Why do they begin to drink?

Does this make the more likely to be heavy drinkers later? Does being raised by an alcoholic affect your view of alcohol? If so, for better or worse?

Studies have shown that creating alcohol specific rules during adolescences prevents early and heavy drinking (Mares 2012). The study goes further and says over time parent's alcohol specific rules become weaker over time leading to more alcohol consumption by adolescence (Mares 2012). I thought this article could be used to discuss the importance of strict parenting during difficult social aspects of growing up, like the first time drinking alcohol. Parents have a difficult job in raising their children because they want to give them freedom to grow, but at the same time they need to have their children's best interest in mind. It may be difficult to be strict and demanding of your child, but necessary none the less.

There was then another study on the role that family plays in alcohol consumption by adolescences. They found that adolescent disclosure, family activities and parental knowledge all had a significant effect on substance use (Jimenez-Iglesias 2013). They also found that substance use increased with age (Jimenez-Iglesias 2013). Maternal variables were shown to be slightly more relevant than paternal variables when measuring use of alcohol (Jimenez-Iglesias 2013).

Finally, I want to just read my thesis and reflect. I want to reflect on my own adolescent experience of having such a strong relationship with an alcoholic, my father. He quit drinking in 2007 when I was 14 years old. I think this shaped the way I lived my life and the way I live my life today. His openness with being an alcoholic and him relaying those experiences and feelings

to me gave me a wonderful grasp on what it means to drink responsibly. I did not have my first drink until I was 21 and in this day and age, I am proud of that. It was hard as I always hung around the “in” crowd. The “in” crowd was always drinking, partying, having a good time and I just want to reflect on how everything shaped me into the man I am today. I hope that this section of my thesis is extremely relatable for any reader that has had experience with alcoholics. I believe that as of now alcoholism has been seen as a condition that can destroy or at least strongly impact the abusers life. I hope that my reflection will provide useful commentary on the way an alcoholic effects the greater amount of people they come in contact with. Even for my father who was a terrific, happy, high-functioning alcoholic, his mother was quite opposite the alcoholic. She was mean, some even described her vulgar hurtful language as nasty. My father had observed this and he claims that is why he was such a happy, high-functioning alcoholic.

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### *III. What does an alcoholic look like?*

As I began to try and understand the struggles my Dad has gone through, I figured there would be no better place to start than the 12-step recovery plan that has helped more alcoholics than any other recovery plan to this day. The book is *Alcoholics Anonymous*; their mission is to help other alcoholics recover from the disease of alcoholism through a support group built of other alcoholics. The section headings below outline the corresponding sections in the book, which I'll describe and comment on.

#### FOREWORDS

The preface describes the history of the Alcoholics Anonymous (AA) organization as well as the history of the book. I read the third edition of the AA book, which was written in 1976. I was initially worried that I may be missing out on some of the new portions of the book, but it turns out the book has not changed since 1939 when it was originally created. The first foreword begins “We of Alcoholics Anonymous, are more than one hundred men and women” (AA, xiii). These were the original settlers of the group that helped create a guide to recovery that has touched the lives of over 1,000,000 people with 28,000 groups, and in over 90 countries (AA, xxii). Now remember this was from 1976, so the number of lives affected by this work of literature has substantially increased. The goal of the organization is best summarized in a section from the second foreword, which states:

“It was thought that no alcoholic man or woman could be excluded from our Society; that our leaders might serve but never govern; that each group was to be autonomous and there was to be no professional class of therapy. There were to be no fees or dues; our expenses were to be met by our own voluntary contributions. There was to be the least possible organization, even in our service centers. Our public relations were to be based upon attraction rather than promotion. It was decided that all members ought to be anonymous at the level of press, radio, TV, and films. And in no circumstances should we give endorsements, make alliances, or enter public controversies.” (AA, xix)

At this point their mission was clear to me: help alcoholics recover by way of a support group built of other recovering alcoholics – that’s it. They want to be anonymous because of the social stigma that comes with being an “alcoholic.” They want each member to feel like he/she is coming to a safe place for help. It’s also a non-profit organization that was created to help the diseased that need it. They do not reveal any of the information at their meetings, as that would violate the code of “being anonymous at the level of press, radio, TV, and film”. And finally, they want to be removed from “endorsements... alliances... and public controversies.” A group dealing with such delicate individuals, alcoholics, could potentially provide a large swing in thought with these vulnerable people. Additionally, it is important that AA not try and persuade their members, especially as it has grown so large.

#### THE DOCTOR’S OPINION

The book begins with a letter sent to the original members of AA who put this book together. He was a “chief physician at a nationally prominent hospital specializing in alcoholic and drug addiction” (AA, xxiii). As he saw it, alcoholics are first drawn in with the physical cravings of alcohol. However, it was the mental piece that was



detrimental to the health of alcoholics. “These men were not drinking to escape; they were drinking to overcome a craving beyond their mental control” is something Dr. Silkworth wrote in his letter (AA, xxviii).

## BILL’S STORY

Now anyone who has dealt with, or even been close to, the disease of alcoholism is able to read the next chapter of the book “Bill’s Story” and relate to it in many ways. Bill was a man just trying to live peacefully and comfortably. He finally reached a point where “for the next few years fortune threw money and applause my way. I had arrived” (AA, 3). Many alcoholics are or have been successful in life. Success does not mean one can escape the lures of alcohol. Bill then said he began golfing a lot, which gives anyone the excuse to drink. He describes waking up in the morning feeling “jittery.” Bill’s situation progressed as it does in most cases until he writes that “liquor ceased to be a luxury; it became a necessity” (AA, 5). Like Dr. Silkworth wrote in his letter, alcoholics have a physiological craving for alcohol. It is no longer something they want to enjoy; it is something their mind tells them that they need to enjoy. Bill continued on his downward spiral, crashing into what I thought would be his “rock-bottom.” Finally, Bill had a friend whom he understood to also be an alcoholic. Well, his friend had quit drinking, and he began to tell Bill the ways by which he found new light. Through observing his friend’s success in something he thought to be impossible, to quit drinking, Bill’s eyes were opened at that very moment to a world of more (Magis?). His friend talked about Jesus Christ playing a strong role in his journey to quit drinking. This piece

was offsetting to Bill at first, but his friend asks the best directing question that I would give to anyone put off by the idea of God: “Why don’t you choose your own conception of God?” (AA, 12). Being agnostic myself, I loved the message his friend was telling him. He was saying you don’t need to believe in MY God to make yourself better; you just need to believe in a God.

This chapter was powerful because I was young when my Dad was going through these things as an alcoholic, and this helped provide some meaning. and this helped provide some meaning. I remember him describing the jitters in the morning as something that impaired his function in life, so he would slip a shot of vodka into his orange juice so his nerves would relax for his morning conference call. He went through the typical downward spiral that many alcoholics go through being devastated by one final blow (being laid off at work) reaching rock-bottom. Unlike Bill, my father decided to quit drinking that very day with no outside influence. He had heard about AA meetings and how many others had sworn by their effectiveness. He went to one and never returned because he felt like they pushed the God subject very hard. Unfortunately, he never read the book, otherwise he might realize that the book was talking about a God that works for YOU. In many ways I would argue that he has used God in his seven and a half years of recovery. He has used the God of love. This is a term we use a lot in the Kelley household, and all it means is spreading love to each and every person you come by. This gave my Dad a sense of something bigger than himself. He wants to live a long life (and to enjoy the rest of mine). He wants to be there for me and be a part of his

grandchildren's lives. These thoughts alone have allowed him to quit drinking cold turkey and stay sober ever since.

## THERE IS A SOLUTION

If you are reading this you must understand that I believe alcoholism to be an illness. It is first an illness of the body, but it is very much so an illness of the mind, as well. AA describes it as an illness that brings "misunderstanding, fierce resentment, financial insecurity, disgusted friends and employers, warped lives of blameless children, sad wives and parents" (AA, 18). If you are an alcoholic this illness can devastate your entire life and, so often forgotten, everyone in your life, as well. Now of course there are several types of drinkers: for example we have moderate drinkers and hard drinkers, but an alcoholic doesn't fall into either category. An alcoholic is someone who cannot control their liquor consumption following the first drink (AA, 21). The logical question to follow would be why doesn't he just control it? Why can't he stay on the water wagon? Alcoholics Anonymous argues that "the main problem of the alcoholic centers in his mind, rather than in his body" (AA, 23). It is interesting that if you try and bring this to the eyes of an alcoholic you know, they laugh it off or simply don't want to discuss it any further. However, the authors of the book claim there is a solution:

*"There is a solution. Almost none of us liked the self-searching, the leveling of our pride, the confession of shortcomings which the process requires for its successful consummation. But we saw that it really worked in others, and we had come to believe in the hopelessness and futility of life as we had been living it."* (AA, 25)

The solution outlined above is a hard one for anyone. It takes a tremendous amount of courage and strength to self-search, level pride, or confess shortcomings. The best insight

gained from this chapter was the fact that alcoholics seeing other alcoholics having success in this program gave them the necessary courage and strength to take the same steps. This relates directly to what it means to suffer, and furthermore what it means to suffer with others. Alcoholics know that the only other people in this world that understand their struggles are other alcoholics. Realizing this gives them hope when they see others succeed with this program. It allows them to buy-in and believe in the process of recovery. I think seeing others succeed in itself opens the eyes of many alcoholics that they too can get help for their illness. It ultimately gives them such hope that the strength needed to self-search, level pride, and confess shortcomings, no longer seems unobtainable. AA groups in general provide strong evidence that supports the idea that suffering with others seems more manageable than suffering alone.

#### MORE ABOUT ALCOHOLISM

“Most of us have been unwilling to admit we were real alcoholics. No person likes to think he is bodily and mentally different from his fellows” (AA, 30). Feeling alienated from our peers is a hard thing to deal with, and alcoholics are no different. They are in constant denial trying to convince themselves that they can control their drinking like others around them. This is never the case for an alcoholic. In fact, “no real alcoholic *ever* recovers control” (AA, 30). If someone is a true alcoholic they will never be able to “control” their drinking like the average member of society. One may state, “I was able to control my drinking early in my drinking career, therefore I can regress to that stage.” Wrong; there is “no such thing as making a normal drinker out of an alcoholic” (AA, 31).

Where alcoholics get into trouble is not accepting themselves for who they are. They so desperately want to fit and be a “normal” drinker that they are in denial of their true illness. They don’t want to have an issue being addicted to alcohol, so they pretend they aren’t. A simple comparison comes to mind. If someone is allergic to anything we help them avoid it. In some ways alcoholics are allergic to alcohol in that they are mentally weak against its allure. In turn, we need to become more informed, accepting and helpful for alcoholics, rather than misunderstanding these challenges. They need to feel comfortable in their attempt to avoid alcohol. At this time, I believe that as a society, we are far too judgmental for alcoholics to feel this comfort and security yet.

The Alcoholics Anonymous group does point to some cases where alcoholism is caught early. “We have heard of a few instances where people, who showed definite signs of alcoholism, were able to stop for a long period because of an overpowering desire to do so” (AA, 32). At this point the man went back to drinking much later in his life. The onset of alcoholism occurred again rather quickly, but how could this be? A man could not control his drinking after many years of sobriety? My only answer comes from AA: “Once an alcoholic, always an alcoholic” (AA, 33). The illness of alcoholics does not go away with time. It is a disease that will be fought daily for the rest of one’s life. There’s a story of a man who maintained sobriety for many years until he finds himself in a hotel bar ordering a glass of milk and whiskey. He had convinced himself that simply mixing his milk and whiskey would help him control his drinking. This just further reiterates the mental illness portion that is often overlooked by those who have not experienced alcoholism in some form or another. This man was perfectly aware of his

alcoholism, but he mistakenly tried to convince himself that after all this time, he could maintain control. The people of AA believe this to be “insanity” asking, “How can such a lack of proportion, of the ability to think straight, be called anything else?” (AA, 37).

While some may believe this to be an extreme characterization of alcoholics, the people of AA don't think it is that far of a stretch. I must emphasize that anything stated about the alcoholic does not have any implications, negative or positive. I am simply outlining what it means to be an alcoholic, and when it comes to convincing oneself of control, an alcoholic is insane to think that he can maintain control when having even one drink.

In this chapter of the AA book it discusses “the fight against the first drink”. For many this is not difficult to do. I have school tomorrow, or work, or whatever it may be. We understand that we have reason not to drink, and we have the capacity to turn down the drink. Many can have two drinks with dinner and then stop and go to bed. An alcoholic, however, will convince him or herself that the first drink is harmless, knowing very well what follows. They are still unable to fight the first drink. The brain is convinced that the first drink isn't a bad idea at all. After that first drink, all alcoholics lose control. Alcoholics don't stop after the first drink, which means they must defend themselves against the first drink.

The chapter ends with this:

“The alcoholic at certain times has no effective mental defense against the first drink. Except in a few rare cases, neither he nor any other human being can provide such a defense. His defense must come from a Higher Power.” (AA, 43)

I was struck by a pattern that it takes a sense of something more to help an alcoholic. Again, I believe that the “Higher Power” is something of their choice, and whatever it is, it must be something that gives their lives meaning!

## WE AGNOSTICS

It is important that as the reader you understand where I am coming from. I was raised in a house without religion. Both of my parents are somewhat atheistic, though I do not believe either of them to be practicing atheism. They just have never bought in to the idea of a creator or mass controller. When reading this section I could have been easily put off. The chapter is constantly discussing “God” and a “Higher Power.” Rather than getting upset by the words of AA in what may initially look like an attempt at conversion, I tried to understand their words as they have worked for countless individuals before my time.

The chapter begins describing the “willingness to believe in a Power greater than ourselves” as a key to recovery (AA, 46). When I see “Power” with a capital “P” I quickly am thinking of God. After rereading this part of the book, I am leaning more toward the idea that the “Power” AA wants us to see is of our choosing. God may be some greater being or beings in the heavens that look down upon our earth. Or God could be some sense of interconnectedness we as humans may have. Whatever it is to YOU, that is the sense of “Power” AA wishes for its member to be aware of. I further stand by my interpretation of “Power greater than ourselves” when I came across, “therefore, we speak to you of God, we mean your own conception of God... Do not let any prejudice

you may have against spiritual terms deter you from honestly asking yourself what they mean to you” (AA, 47). It was clear now that the members of AA are supposed to search for some kind of spiritual entity that speaks to them. All that is being encouraged is to find some sense of spirituality that is “greater than ourselves” and that results in a more happy you.

Keeping in mind that the words of this book have been only slightly altered since 1939, a few sentences may rub an agnostic or atheist in the wrong way. This makes sense knowing that our religious acceptance in 1939 was far less than it is today. The group claims, “People of faith have a logical idea of what life is all about” (AA, 49). This is a strong statement in that it seems the authors are saying anyone without faith (agnostics and atheists) could not possibly understand the meaning of life. Initially insulted, I would revise this by saying, “People with *spirituality* have a logical idea of what life is about.” The idea of faith is strongly tied to the idea of God. However, by using “spirituality” I would argue that it opens the door to many others who may be pushed away by the constant discussion of faith and God.

Putting aside the religious language of the book, the authors of the book were very much onto something. Spirituality is an essential piece of life that even I was unaware of until recently. Describing what convinced them to put effort towards faith:

“When we saw others solve their problems by a simple reliance upon the Spirit of the Universe, we had to stop doubting the power of God. Our ideas did not work. But the God idea did.” (AA, 52)



It was not a single point revelation that caused these alcoholics to begin searching for the “Spirit of the Universe,” it was rather “when we saw others solve their problems” this way. As humans it is our nature to see the success of others and copy it if we too want that same success. As alcoholics began to see the power of both God and spirituality, they realized that they could finally defend themselves from the first drink. The tables have turned in the battle with alcohol. Now, alcoholics were finding a successful way to fight back against a disease that was devastating their lives.

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IV. *How does an alcoholic respond?*

Now that the alcoholic has been described in terms of what he/she looks like, how he/she might act, and how he/she might think, the Alcoholic Anonymous book shifts directions and outlines a plan for action. As far as I know, it has been the most effective plan of action to treat alcoholism. This treatment gives recovering alcoholics a framework to avoid relapse. Here are the Twelve Steps:

**1. We admitted we were powerless over alcohol—that our lives had become unmanageable.** You may hear someone say the first step to recovery from anything is admitting you have a problem. This first step in fighting alcoholism is no different. One must admit to him/herself that they have a problem. Without accepting this first point, one cannot recover from alcoholism. **2. Came to believe that a Power greater than ourselves could restore us to sanity.** In this step, the alcoholic must find some other meaning greater than themselves for whom to live and for whom to refrain from drinking. I know that my father stopped drinking for his family – something outside of himself and something he valued. **3. Made a decision to turn our will and our lives over to the care of God as we understood Him.** From this step, I must truly emphasize “God as we understood him.” Not all of us believe in God or even one God. For those people it is whatever God is for you. I happen to believe in a God that is love connecting each and every one of us. In that respect I can turn my life over to that belief, living my life in accordance with those good ways.

The next step is a little less clear than the first three: **4. Made a searching and fearless moral inventory of ourselves.** It is explained best in the chapter of indexing all our moral imperfections. It is looking at our lies and our deceits in life, and thinking about the actions of which we are not proud. **5. Admitted to God, to ourselves and to another human being the exact nature of our wrongs.** Continuing off the last step we now must face whatever God we believe in, ourselves, and usually a special acquaintance like a spouse, in sharing the wrongs we have done and suffered because of alcoholism. Maybe we are in debt for credit cards we shouldn't have used. Or perhaps we have been dishonest in our relationships. No matter the issue we must share them in order to continue down the path of recovery. **6. Were entirely ready to have God remove all these defects of character.** For me where God is not an almighty being, I still buy into this step. I think these "defects of character" can be fixed by holding fast to whatever spirituality you may believe in. If you have decided to quit drinking for the love of your family, fix the "defects in your character" with that same love. Gandhi said, "Be the change you wish to see in the world." **7. Humbly asked Him to remove our shortcomings.** Again, you can ask God, or you can respond in your own way. If you are in debt, make a change and a budget to get yourself out of that hole. If you believe in a single God, ask for his help in removing these shortcomings. I argue that a person with any belief system can use these steps, and for this step in particular, you have to ask for help (from something higher).

The next steps suggested by the book are steps of action. They call the ill alcoholic to make an attempt to fix issues he/she sees within his/her life. **8. Made a list of**

**all persons we had harmed, and became willing to make amends to them all.** In thinking about it, this step is challenging, as I imagine creating such a list of people that may have been damaged by your drinking would stir up many emotions and dark thoughts from the past. It may have been your kids who were not receiving as much attention as they deserved because drinking was a priority. It could possibly be a colleague who you treated poorly because you associated working with them as a reason you could not be drinking. I also presume that having as exhaustive a list as possible is vital, so no matter the person, friend or foe, make a list if they may have been negatively affected by your drinking. **9. Made direct amends to such people wherever possible, except when to do so would injure them or others.** This step involves action to fix broken relationships with the people on the list made in step 8. One must try and make amends to those whom they have hurt with their drinking. This is the appropriate point to fix a damaged relationship with a spouse or children who did not receive the attention they deserved. I would interject that the recovering alcoholic should recognize that it may not be possible to salvage all of the fragmented relationships, but the effort is what is important. **10. Continued to take personal inventory and when we were wrong promptly admit.** In a way, this is a reiteration of step 4, recognizing that the entire recovery process an ongoing practice. The steps make an attempt to get the alcoholic into the right mindset of constantly analyzing his/her own behavior in order to attain a strong moral code. If one continually self-assesses in a constructive way, he will remain grow and remain true to himself. If one stops practicing the process, however, it is very easy to discontinue analyzing your moral fiber, which in turn can make it easier to forget the

reasons that stopped him from drinking in the first place. Relapse can happen more easily at this step because many people think they are in the clear once they have made it this far. Unfortunately, this false sense of security (or false sense of success in the process) may lead to the next first drink. **11. Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out.** This step adds to the process of recovery through introspection, reflection, and seeking to build upon a spirituality, as one needs constant reminders as to why they stopped drinking and how to endure the struggles to stay sober. If God is that being that helps one reflect on himself, then so be it. If it is another mechanism like love, that works to. Whatever your “God” is, remain in contact with that entity, as it will help give you strength to avoid the first drink in your life-long battle against alcohol. **12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs.** Finally, once one has mastered these steps (insofar as mastering them is possible), it is his duty to go and help others if possible and to show other alcoholics a way to defeat alcoholism. If one has the ability through experience to help save an alcoholic from an endless, life-threatening addiction, that person is called to do so. I find it rather interesting that this step ends with “to practice these principles in all our affairs,” because this list of steps could easily apply to anyone trying to lead a “good” life. **(All quotes from AA, 59)**

After reading the 12 Step recovery plan outlined by the book I realized a common thread among the steps. Each step seems to be an attempt to help someone live a

spiritually rich life. The book says, “We claim a spiritual progress rather than spiritual perfection” (AA, 60). The steps seem to lead one through a spiritual practice that is always ongoing. I would argue this is the most effective treatment to date for alcoholics, it may suggest that many alcoholics are spiritually ill rather than physically or even mentally ill. I have seen evidence of this in my own story with alcoholism. My father grew up in a house without religion. Say what you want, but someone growing up in a house without religion is put at a spiritual disadvantage by placing more emphasis and weight on parenting. In my dad’s case, his family life wasn’t the best; a father who was always working, and a mother who was an alcoholic herself. I can see how a child in this environment may lose touch with the spiritual influence on what gives meaning to life.

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## V. *My Final Thoughts*

Eight months ago I began on the arduous journey that has become my thesis. After an eight-month process of inquiry, one could presume that I found some gratifying answers. Although I hoped to gain some higher level of understanding of this disease and how it affected me and my family, I have ultimately found that the issue of alcoholism is far more complex than I thought. Alcoholism creates a unique pain for individuals and those around them that many around the world experience. To this ongoing, worldwide conversation, I can only offer my experiences and analysis of the recovery process.

You're probably curious about the relationship between my father and me today. I'm pleased to tell you it is a wonderful and strong relationship. I must further explain that since my exploration into 'what it means to be an alcoholic,' our relationship has grown even stronger. My dad has now given up all of his reality-bending drugs and drinks and has been sober since September 17<sup>th</sup>, 2007. Now, he prefers to get high on life. We enjoy golfing with the three generations of Steves on Sunday. We even surf (yes in Colorado!) in the summers to stay cool. One of my favorite activities I get to enjoy with my dad today is playing softball. We have created a summer tournament team together where most of the guys are in their early twenties, but the life and energy of the team is my fifty year old father. Just remembering all the special times I spent with him on school nights at softball games makes playing with him today that much more enjoyable.

I must also confess that in the process of trying to discover the best way to recover from alcoholism I learned there is no single way to respond to this illness. Everyone's experience and battle with alcohol is an individual account. There is no blanket solution that can be laid down to heal all alcoholics. I detailed above the most successful way to battle alcoholism historically, but the twelve steps are not the ONLY way of ridding your life of alcohol. For example, my dad's recovery was much different than the traditional twelve steps. He attended an Alcoholics Anonymous group with a family friend that swore by its effectiveness. My Father sat at the meeting all night listening to people tell their stories of tragedy and the newly found "God" in their lives. The environment was very off-putting to my father. He felt as if religion was being forced upon the members and pushed further by other members. Also, you must also realize that my father is a salesman of over 25 years. That being said, he feeds off the energy of others. Listening to devastating stories for hours was not helping his mental fight with alcoholism. It instead was depressing him and causing him to think about drinking even more. My father never went to another AA meeting and has yet to relapse. This just further shows how all encounters with alcohol are not the same.

The Twelve Steps program, when taken at face value like my father did, is arguably pushing religion as an escape from the death hold of alcohol. In my deeper reading of the steps, it seems that the steps don't think "God" is necessarily the most important part of the equation, but that believing in SOMETHING is. It is vital to believe in something greater than yourself when battling alcohol. For many people, God is something bigger than ourselves that is easy to follow. To others like my dad, that idea



may not work. Instead, my father believed in the love of his family. He wanted to enjoy the life that alcohol seemed to be ruining with a growing young man in the house. While not accepting of the idea of God, he chose his own thing to believe in – his own “God” to believe in. It is simply vital that a recovering alcoholic believe in living for something greater than himself.

It would be foolish to write an entire thesis about a man’s battle with alcoholism and not mention one of the strongest pieces of support that he had: my mom. Throughout the whole timeline of my dad’s drunkenness, my mom displayed incredible patience, compassion, and understanding. When many wives would have quit on the man who just gambled away their son’s college fund my Mother never gave up. She admirably helped my Dad from the days of his drinking until now, always with love in her heart. She emphasized the importance of our father-son relationship, urging us to spend important – and for me unforgettable – time together. It is important to recognize the role a support system plays in the battle with alcoholism. The stronger your support group, the better your chances for recovery. My Mother courageously stuck by my dad’s side through sickness and health, and my Father and I both have a lot to be grateful for in that regard.

Another insight gained from Alcoholics Anonymous’s Twelve Steps is the idea that the steps seem to be a guide to build a solid spiritual foundation. This makes one consider the possibility that maybe alcoholism in fact is a spiritual illness, even more than it is a mental or physical illness. Relating back to my own closest experience, I would have definitely described a younger version of my Father as spiritually ill. Despite your

views on religion, that is a place many go to connect to a meaning greater than one's self, even though we never went to church as a family. My dad grew up in a house where he despised his mother, also an alcoholic, and it doesn't seem that he was brought up to express his feelings or emotions well. Putting all this together you would ask why on earth this man would want to raise a child. Quite contrary, he was a deeply generous and loving man who was never taught an acceptable way to express the emotions of fear or guilt. My mother similarly never really took to church well and hasn't gone for many years. However, she remains extremely spiritual and constantly in touch with her emotional well-being. She believes that "God is love" and love for one another is the meaning of life.

These two seemingly opposite-spectrum individuals decided to have a child (me, of course), and you may wonder how they planned to raise him and what values they planned to instill in him? Well, I believe that my moral compass is firm, and my way of living (aka spirituality) is decent, although I recognize that it's a constant work in progress. I have always been raised by my mother to be a loving person, I strive to be kind and accepting of others. and I really do not have an issue with expressing my emotions. Being self-critical, however, I must admit an unintended spiritual hiccup. Growing up, I was continually searching for my father's approval and acceptance. As it turned out, his acceptance and love were always there, but his inability to express his emotions influenced me in ways that I'm only realizing now. I have difficulty with commitment and a fear of abandonment as a result of constantly seeking out my father's affection, which is something that I continue to work on in my life today. I thus want to

emphasize that one must recognize the importance of parental action. When raising children, they are constantly aware and being shaped in intentional (and even unintentional) ways.

Looking at the problem of addiction and young people through the lens of my experiences above, a related issue that comes up in raising a child in today's society is the fact that teens will be exposed to drugs and alcohol before legal age. There are many approaches in teaching children about the harm and responsibility that comes with such substances. In our household, the door to conversation on the topic was wide-open; meaning there was *nothing* I couldn't ask my parents about drugs and alcohol that they wouldn't truthfully try and answer. From a young age (probably around the age of 9), my parents warned me about the harm of alcohol and drugs, and as I grew older, the discussions became less trivial and more about the decision to drink. As I found myself around drugs and alcohol more and more in high school, our discussions evolved once again. I constantly found myself asking questions about what certain drugs made you feel like or how they affected your state of mind. Being the drug expert he was, my dad was able to provide me with vivid stories of what it was like being high under certain substances or drunk off certain alcohols. Our discussions did not end with the feeling the substances gave you, however. My dad was living proof of the aftermath that a life filled with drugs and alcohol had lasting effects. My father was a straight A student until he began experimenting with drugs and alcohol at a young age. His life is now plagued by many things that are related to his lifelong use of drugs and alcohol, including attention issues, organizational issues, and even issues with things such as composing a simple

email. He wasn't afraid to reveal his flaws to me. Ultimately, he left the decision up to me as to when I wanted to drink for the first time or use my first drug, but he always reminded me of the experiences he had shared with me. As it turns out, despite being surrounded by drinking and drugs in the "in crowd" in high school, I did not have my first drink or use my first drug until I was 21. I may be biased in the way my parents brought me up, but I believe many parents could learn something from the open honesty my dad shared with me.

Going further, parents often believe that telling kids "not to drink" or "not to do drugs" is enough. However, kids are curious by nature, and chances are they will want to experience things for themselves. I believe that if parents are more honest and open about their experiences with drugs and alcohol, it will be more helpful. Parents aren't perfect, nor should they be. If a parent is worried his child will judge or interpret them differently based on mistakes made in his younger years, I must inform you that you're incorrect. As kids, we look up to our parents and observe their actions. So by telling us to simply not drink, and then drinking yourself sends the message that it is okay to drink based on your actions. Rather than simply demanding a child not drink, attempt to explain why drinking is a bad idea at a young age. Describe the dangerous effects that alcohol has on a matured brain, let alone the even greater and more dangerous effects of drinking with a developing brain. One must not be ashamed of his past, either, especially in front of your child. Share with them your experiences with alcohol and drug use. If you started earlier than you should have and didn't end up as far in life as you had hoped, that's alright; just share it with them. Your child will not judge you as a failure; on the contrary, they will

respect the open truthfulness of your stories. When your children are offered that first drink, they will think twice about the dangers and hardships it has brought into your life. It will teach greater drug and alcohol responsibility to the young who seem to be exposed to both earlier and earlier in life.

Finally, I found it rather interesting how my perception of my father has shifted from the time when he was an alcoholic until now. On one hand, my view of my father as a whole person hasn't changed all that much. He is still seen by many to be the fun, energetic salesman that he always was. As a child I thought of my father in many of the same ways – he was fun, without a care in the world. To me, he was invincible. As I've grown older and experience has softened me, I realize that that he is another human trying to find his way in a confusing world. He is a man that is trying to find a solution to his suffering. He is a man that pays his bills every month and taxes every year. More importantly, I have realized that he is a man that has continually loved and supported me. He is my dad, and I am thankful that I finally understand what that means.

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