Birth Order

Definition
Birth order is the chronological order of sibling births in a family.

Description
Alfred Adler (1870–1937) was a pioneer in the study of birth order. His research suggested that the position a child had by the order of birth significantly affected the child's growth and personality. Research in the late twentieth century and early twenty-first century shows even greater influence, contributing to intelligence, career choice, and, to a certain degree, success in adulthood.

Being born first, last, or somewhere in the middle of itself is not of significance. What matters is how that birth order affects how a child is treated by parents and other siblings and how that child feels about it. Other factors also influence the child's socialization and the parents' expectations.

Birth spacing, gender, physical attributes, and being a twin also affect personality formation and the interpretation of birth order and behavior. These factors influence how parents treat children and how each child is viewed by the other siblings.

Birth spacing changes the dynamics of strict birth order, too. If there is a gap of five or more years between children, each child may be treated as an only child or as a firstborn. If there is a large gap between groups of children in a large family, each group may be treated as a separate birth order family. For example, if child 1, 2, and 3 are three years apart and there is a gap of six years before child 4 is born and child 5 and 6 follow in two year intervals, then child 1, 2, and 3 form a birth order grouping of firstborn, middle, and last, and child 4, 5, and 6 form another grouping of first, middle, and lastborn.

Gender also has a major impact on how a child is treated within the birth order arrangement. The firstborn of either gender, no matter where in the sibling order the child falls, will often be treated as a firstborn. For example if a family has two daughters then has two sons, the first daughter and the first son will be treated as firstborns. The daughter is the true firstborn, but the first son is the first child in the household to be treated with what the family perceives as maleness. Historically, this held true and usually contributed to older sisters not having a claim to inheritance because of their gender.

In addition, if there is only one daughter in a family of three boys, the daughter will often be treated as a first born no matter where in the birth order she is born. The simple fact that she is the only one of her sex allows her to take on the characteristics of a firstborn and be treated as such. This obviously also applies to one son in a household of daughters.

That sense of specialness also applies to children's physical attributes and conditions. If a child of any birth order has a serious medical problem or a physical or mental disability, that child rises either to firstborn status or lastborn status because parental attention is placed on this special child. Robust health and beauty can also skew birth order expectations. For example, if there are two sons and the younger is bigger and more athletic, the younger may be treated as a firstborn because parental favor and expectations are higher for this child. Likewise, if the younger of two daughters is extremely pretty and her older sister is plain, the younger may either be treated as a favored lastborn or as a high-achieving firstborn.

Twins and other birth multiples also skew birth order predictions. Each twin or multiple grouping has its own birth rank. The firstborn twin usually takes on leadership roles for the twin pair. The second born usually is more compliant and willing to follow. For the single birth children born after
twins or other multiples, birth order is skewed because the twins or multiples have become special children and, in the case of multiples, are their own birth order unit. Birth order research focuses on five ordinal birth positions: firstborn, second born, middle, last, and only children.

**Firstborns**
In general, firstborn children have been found to be responsible, assertive, task-oriented, perfectionistic, and supporters of authority. Because they often look after their younger siblings, they get experience leading and mentoring others, often rising to leadership positions as adults. Nearly half of all U.S. presidents were firstborns; only four were lastborn. Studies have also linked firstborn children with higher academic achievement and possibly higher intelligence scores when compared to later-born children. This may be due to more exposure to adult language and greater interactions with parents. Firstborns often choose professions that require precision, such as careers in science, medicine, law, engineering, computer science, or accounting.

Firstborns can harbor some resentment toward siblings because parental attention has to be shared. They strive to hang onto parental affection by conforming, either to their parents’ wishes, their teachers’, or society’s. If this does not bring the attention they want, some firstborns defy authority and misbehave or rebel.

**Secondborns and middle children**
Many second borns are also middle children. They often report feeling inferior to older children because they do not possess their sibling’s advanced abilities. Sometimes, they are very competitive with their firstborn sibling. Others choose to focus their energies in areas different from those in which their older sibling is already established. This competition with firstborns drives second borns and middle borns to innovation, doing or being different from their older siblings in order to make themselves stand out in the family dynamic. In truth, they often are more competent at an earlier age than their older siblings because they have had their example to follow.

Middle children can feel forgotten or overlooked because of the attention or demands of either the firstborns or the last borns. Some of these children never seem to find their place in the social order, and they try to rebel or misbehave in order to draw attention to themselves. Some of these troubled middle children bully younger siblings or children at school.

Other middle children capitalize on the injustice they feel as children and become trial lawyers or social activists because such roles allow them to fight against other social injustices. Some middle borns become very socially skilled because they have learned to negotiate and compromise daily with their siblings and their parents. Some of these children are often called the peacemakers of the household.

Middle children have also been found to succeed in team **sports**, and both they and last borns have been found to be more socially adjusted if they come from large families.

**Lastborns**
Lastborns are generally considered to be the family “baby” throughout their lives. Because of nurturing from many older family members and the example of their siblings, lastborns from large families tend to develop strong social and coping skills and may even be able to reach some milestones earlier. As a group, they have been found to be the most successful socially and to have the highest **self-esteem** of all the birth positions.

Youngest children may feel weak and helpless because they compare themselves with older siblings who are able to do more things physically and socially. They may feel that they always have more growing up to do in order to have the privileges they see their older siblings have. Some lastborns develop self-esteem problems if older siblings or parents take power away from
these lastborns so that they cannot make decisions or take responsibility. Because of this powerlessness, some lastborns may be grandiose, with big plans that never work out.

Some lastborns transfer this powerlessness into a personal asset by becoming the boss of the family, coyly eliciting or openly demanding their own way. Some families jump to and cater to these lastborns.

Other lastborns engage in sibling rivalry because of the injustices they think they experience because they are the youngest. Some ally with firstborns against middleborns.

**Only children**

Only children may demonstrate characteristics of firstborns and lastborns. Firstborns, after all, are only children until the first sibling is born. Only children grow up relating to adults in the family but have trouble relating to peers. However, this changes as they reach adulthood and get along well with adults.

Only children are achievement-oriented and most likely to attain academic success and attend college. They may also be creative. But only children can be pampered and spoiled as lastborns and can be self-centered. They may rely on service from others rather than their exert their own efforts. They sometimes please others if it suits them but may also be uncooperative. They can also be over-protected.

Some only children become hypercritical, not tolerating mistakes or failure in themselves or others. They can also transform this perfectionist tendency into rescuing behavior, agonizing over the problems of others and rushing to take over and solve everything without letting others help themselves.

**Common problems**

Sibling rivalry is a normal part of family life. All children become jealous of the love and attention that siblings receive from parents and other adults. When a new baby comes into the family, older children feel betrayed by their parents and may become angry, directing their anger first toward the parents and later toward the intruder who is usurping their position. Jealousy, resentment, and competition are most intense between siblings spaced less than three years apart. Although a certain amount of sibling rivalry is unavoidable, there are measures that parents can take to reduce its severity and its potential effects on their children.

An older child should be prepared for a new addition to the family by having the situation explained and being told in advance about who will take care of her while her mother is in the hospital having the baby. The child's regular routine should be disturbed as little as possible; it is preferable for the child to stay at home and under the care of the father or another close family member. If there is to be a new babysitter or other caretaker unknown to the child, it is helpful for them to meet at least once in advance. If sibling visits are allowed, the child should be taken to visit the mother and new baby in the hospital.

Once the new baby is home, it is normal for an older child to feel hurt and resentful at seeing the attention lavished on the newcomer by parents, other relatives, and family friends. It is not uncommon for the emotional turmoil of the experience to cause disturbances in eating or sleeping. Some children regress, temporarily losing such attainments as weaning, bowel and bladder control, or clear speech, in an attempt to regain lost parental attention by becoming babies again themselves.

There are a number of ways to ease the unavoidable jealousy of children whose lives have been disrupted by the arrival of a younger sibling. When friends or relatives visit to see the new baby, parents can make the older child feel better by cuddling him or giving him special attention, including a small present to offset the gifts received by the baby. The older child's self-esteem
can be bolstered by involving him in the care of the newborn in modest ways, such as helping out when the baby is being diapered or dressed or helping push the stroller. The older child should be made to feel proud of the achievements and responsibilities that go along with his more advanced age—things the new baby cannot do yet because he or she is too young. Another way to make older children feel loved and appreciated is to set aside some quality time to spend alone with each of them on a regular basis. It is also important for parents to avoid overtly comparing their children to each other, and every effort should be made to avoid favoritism.

In general, the most stressful aspect of sibling rivalry is fighting. Physical, as opposed to verbal, fights usually peak before the age of five. It is important for parents not to take sides but rather to help children work out disagreements, calling for a "time out" for feelings to cool down, if necessary. Over-insistence that siblings share can also be harmful. Children need to retain a sense of individuality by developing boundaries with their siblings in terms of possessions, territory, and activities. Furthermore, it is especially difficult for very young children to share their possessions.

Parents should take time to praise cooperation and sharing between siblings as a means of positive reinforcement. The fact that siblings quarrel with each other does not necessarily mean that they will be inconsiderate, hostile, or aggressive in their dealings with others outside the family. The security of family often makes children feel free to express feelings and impulses they are unable to express in other settings.

**Parental concerns**

**Firstborns**

Firstborns often feel pressure to succeed or perform well, either by parents or through their own inner drives. They often are called on to take care of younger siblings or do chores because they are responsible. Firstborns also feel pressure to be good examples for their siblings.

Some parents are quick to punish firstborns for not measuring up. Others constantly correct firstborns because they think it will help these children succeed. If firstborns cannot meet these expectations or fear that they cannot, they often become depressed and sometimes resort to suicide to escape the pain they feel.

Parents need to realize that firstborns need not be perfect in order to succeed. They are already eager to please and criticism should be limited to broad strokes rather than focus on minor imperfections. Responsibilities should be meted out in small batches according to their age appropriate abilities. In addition, parents should acknowledge firstborns as people, not the products of their efforts.

When placed in leadership or mentoring roles with their younger siblings, some firstborns may demonstrate aggressive or domineering behavior. They may boss their brothers or sisters around or lord it over them. These behaviors can also transfer to the school setting, making these children uncooperative with their peers. Parents should monitor leadership behavior to make sure these children learn to lead with kindness while respecting other people's feelings.

**Secondborns and middle children**

Secondborns and middle children often feel invisible. Parents need to make a special effort to seek out their opinions in family discussions. Finding out what special talents or interests these children have and encouraging them through classes or events makes them feel like they matter and are as important as firstborns or lastborns. All of the children in family then feel special and loved as the unique individuals they are.
Lastborns
Youngest children are not usually very responsible because they have not been given the opportunity. Parents can foster responsibility and self-reliance by giving even the youngest child some responsibility, such as setting the table or putting clean clothing in their dresser drawers.

If lastborns are being bullied by older siblings, parents need to step in. Children need help developing strategies for working out difficulties. They can also benefit from hearing parents tell older siblings that it took time for them to do the things that lastborns are struggling to do.

Only children
Parents need to help their only children socialize with other children. They also need to help them accept imperfection in themselves and others by being tolerant of it themselves. In order to keep only children from being rescuers, parents need to help these children develop patience and understanding of differences in others.

Source:

Birth Order Does Matter
Some researchers believe birth order is as important as gender and almost as important as genetics. It gets back to the old nurture vs. nature business. In my experience as an educator and a researcher, I know that no two children have the same set of parents, even though they live in the same family. Why? Because parents are different with each of their children, and no two children ever take the same role. For example, if you are the caretaking child, then that role is taken and your sibling will pick another role in the family, perhaps that of the achiever.

We Are Different Parents With Each Child
As the parent, you remember your first child well: They were the one you watched to make sure they were breathing in their crib, the baby you breastfed and/or sterilized bottles for and carried most of the time. That child is the only child that will ever have his or her parents completely to his/her self; all other children have to share.

If you think about it, firstborn children enter a family of adults who are proud of their every progress and frightened by every potential injury. The child caught in the middle is often dominated by the firstborn, who is older, wiser and more competent. By the time the baby arrives, parents are usually worn down, worn out and less likely to micro-manage. By now, you know your baby is not going break, and therefore, you can be more flexible in both attention and discipline. As a result, your baby learns early on to seduce and entertain.
The Achiever, The Peacemaker, and The Life of The Party
While the eldest child is programmed for excellence and achievement, the middle child is raised to be understanding and conciliatory and the baby seeks attention. As a result, birth order is a powerful variable in the unfolding of your personality.

The Firstborn Child: The Achiever
The eldest child will probably have more in common with other firstborns than their own brothers and sisters. Because they have had so much control and attention from their first-time parents, they are over-responsible, reliable, well-behaved, careful and smaller versions of their own parents.

If you are a firstborn, you are probably a high achiever who seeks approval, dominates and is that perfectionist who uses up all of the oxygen in the room. You can be found in a leadership career such as law, medicine or as a CEO. As a mini-parent, you try to dominate your sibs. The problem is that when baby number two arrives, you will also experience a sense of loss. By losing your seat on the familial throne, you also lose the special place that singularity holds. All of the attention that was exclusively yours must now be shared by you and your sibling.

The Middle Child: The Peacemaker
If you are a middle child, you are probably understanding, cooperative and flexible, yet competitive. You are concerned with fairness. In fact, as a middle child, you are likely to pick an intimate circle of friends to represent your extended family. It is here that you will find the attention likely lacking in your family of origin. As a middle child, you receive the least amount of attention from family and as a result, this family of your choice is your compensation. As a middle child, you're in very good company with notable U.S. Presidents and celebrities such as Abraham Lincoln, John F. Kennedy, Winston Churchill, Bill Gates, Donald Trump and Steve Forbes. Though often a late bloomer, you find yourself in power careers that allows you to use your negotiating skills... and get that all too-needed attention.

You and your older sibling will never excel at the same thing. The personality trait that defines you as a middle child will be opposite of that of your eldest and youngest sibling. But those wonderful social skills that you have learned as the middle child -- negotiating and navigating within your family structure -- can prepare you for an entrepreneurial role on a large scene.

The Youngest Child: The Life of the Party
If you're the baby, your parents are already confident in their role as caregiver, and therefore are more lenient and don't necessarily pay attention to your every move or
milestone as they did with your older siblings. Thus, you've learned how to seduce the crowd with charm and likability.

As the youngest child, you have more freedom than the other siblings and, in a sense, are more independent. As the youngest child, you also have a lot in common with your oldest sibling, as both of you have been made to feel special and entitled. Your range of influence extends throughout your family, which supports you both emotionally and physically. Hence, you experience a sense of place and security.

It probably won't surprise you to note that youngest children often find careers in the entertainment business as actors, comedians, writers, directors and so on. They also make good doctors and teachers. Because your parents were more laid back and lenient, you expect freedom to follow your own path in a creative style. And as the baby of the family, you've had less responsibility, and therefore don't attract responsible experiences.

**The Lone Wolf: The Only Child**
If you're an only child, you grow up surrounded by adults, and therefore are more verbal and often more mature. This allows for gains in intelligence that exceed other birth order differences. Having spent so much time alone, you are resourceful, creative and confident in your independence. If you're an only child, you actually have a lot in common with those who are first borns, as well as those who are the youngest in their families.

**Parents: Know Your Child**
In the final analysis, for parents, it is important to know your child. Even more important than birth order is creating an environment that is positive, safe, healthy and stimulating. By understanding your particular child's personality and temperament, you can organize their environment to bring them toward their fullest potential. For example, understanding that a first-born child feels highly responsible allows you to lighten their load and recognizing that the baby of the family is experiencing a more lenient environment can help you be more diligent in your discipline.

Children need to be allowed to find their destiny, whatever their role in the family may be, and as a parent, your most important job is to support their individual journey.

1. The first theorist to suggest that birth order can affect human psychology was Alfred Adler (1870-1937). In short, he argued that firstborns are “dethroned” by a second child, which permanently affects the firstborn’s personality. Additionally, younger and older children may be spoiled and pampered, which also permanently affects their later personalities.

2. When discussing birth order, it is important to note that there are other various, influential factors related to the development of personality, including family size, sex of each child, sibling deaths, relationship between parents, how critical parents are, and family blending due to divorce or death.

3. Actual birth order may differ from psychological birth order. Researchers distinguish between “actual birth order” or ABO (the numerical rank order into which someone is born) and “psychological birth order,” or PBO (self-perceived position in the family). Actual and psychological birth order can vary for various reasons, including illness of one child, family size, and degree of separation between siblings.

4. Parents may impose their own stereotypes about birth order on their children which, in turn, creates self-fulfilling prophecies. In other words, a firstborn child may feel like a leader because his parents handed him this role early in life. Or a firstborn will believe he is smarter and approach a testing situation with more self-confidence, thus, boosting his score.

5. Some researchers say that the apparent disadvantages middle children endure can help them be more empathetic, independent, and articulate.

6. Famous firstborns include Zac Efron, Beyoncé Knowles, Dakota Fanning, Harrison Ford, Matthew Parry, Jennifer Aniston, Angelina Jolie, Brad Pitt, Chuck Norris, Sylvester Stallone, Reese Witherspoon, and Ben Affleck.

7. Firstborns tend to score higher on IQ tests and typically get more education than their brothers and sisters.

8. Firstborns are more likely to make at least $100,000 more annually than their siblings.

9. When there is a five- to six-year gap between children, the next child starts a “new” family and “new” birth order.

10. Sometimes extenuating circumstances tweak the natural birth order sequences so that a later-born child may act like a firstborn, or a firstborn can seem to have characteristics that are inconsistent with the way firstborns are “supposed” to act.

11. One researcher advises parents not to adopt a child who is older than any biological children they already have. The younger biological child may feel “dethroned” by the adopted child.

12. Generally speaking, children are affected and influenced the most by whoever is directly above them in the family.

13. Second-born children are known for going the opposite direction from the firstborn in the family.

14. Because firstborns are often given more responsibility at home (e.g., babysitting younger siblings, helping with chores), they can be quick to take charge.

15. Famous youngest siblings include Prince Harry, Blake Lively, Cameron Diaz, Eddie Murphy, Martin Short, Ellen DeGeneres, Whoopi Goldberg, Jay Leno, Stephen Colbert, Steve Carell, Jon Stewart, Billy Crystal, Danny DeVito, Drew Carey, Jim Carey, Steve Martin, Chevy Chase, John Candy, and Charlie Chaplin.

16. Approximately, 1,300 new blended families form every day in the U.S. Approximately 40% of all marriages represent a remarriage of one or both parties. If remarriages continue at this rate, 35% of all
children born will live in a stepfamily by the time they reach 18. Approximately 1 in 6 children under the age of 18 is a stepchild.\textsuperscript{5}

17. Blended families do not automatically create new birth orders, especially if the children are older. Specifically, after the age of 5 or 6, personalities are already mainly formed, which means the firstborn is always a firstborn, a middle child is always a middle child, and so on.\textsuperscript{6}

18. A 2007 study showed a correlation between IQ and birth order: the more older siblings one has, the lower one’s IQ.\textsuperscript{6}

19. Firstborn personalities can be created by being the oldest of your sex, having a 5-year (or more) gap between you and the child above you of the same sex, or achieving a role reversal and taking over the firstborn privileges and responsibilities.\textsuperscript{6}

20. Generally, firstborns or only children are conscientious, well-organized, serious, goal-oriented, achieving, people pleasers, and believers in authority. Other traits include perfectionistic, reliable, and self-reliant.\textsuperscript{a}

21. According to a survey the U.S. Census Bureau released in 2009, the average number of children in a household under the age of 18 is one.\textsuperscript{f}

22. Qualities of a middle child include mediator, compromising, diplomatic, avoids conflict, independent, loyal to peers, many friends, a maverick, and unspoiled.\textsuperscript{d}

23. Research notes that middle children are the most secretive of all birth orders.\textsuperscript{d}

24. Statistics show that firstborns and last-borns visit therapists and counselors more often than middle children.\textsuperscript{f}

25. Qualities of a last born include manipulative, charming, blames others, attention seeker, tenacious, people person, natural salesperson, precocious, engaging, affectionate, and loves surprises.\textsuperscript{d}

26. One marriage counselor noted that the most competitive, most volatile, and most discouraging marriage combinations are where both spouses are firstborns or, worse, only children.\textsuperscript{d}

27. One marriage counselor noted that the first principal (not a rule) for riskier marriage is to marry someone in your own birth order. In other words, a firstborn marrying a first born or a middle child marrying a middle child.\textsuperscript{d}

28. A middle child who marries another middle child desires peace at any price, which can actually lead to avoidance. Their marriage may have a quiet surface with all kinds of storms brewing underneath. They are more likely to not communicate well because they feel it isn’t worth the hassle to confront each other.\textsuperscript{d}

29. A couple consisting of two last-borns is more likely to get into debt.\textsuperscript{d}

30. Last-borns or only children who marry other last-borns make the best match. The next most successful marriage pairing are middle children and last-borns.\textsuperscript{d}

31. If there is one generalization someone could make about middle children is that they feel squeezed or dominated—or what has been known as the Middle Child Syndrome.\textsuperscript{f}

32. Middle children are less likely to be spoiled and, therefore, they tend to be less frustrated and demanding of life.\textsuperscript{f}

33. Because only-children spend so much time alone, they tend to be self-entertainers and often tend to be the most creative of all birth orders. One researcher calls them “Super First Borns.” Like firstborns, they are confident, pay attention to detail, and tend to do well in school.\textsuperscript{a}

34. The way parents treat their children is as important as the children’s birth order, spacing, sex, and physical or mental characteristics. The key question is this: do parents provide a loving, accepting, and warm environment or was it critical, cold, and distant?\textsuperscript{9}

35. Because firstborns follow their parents’ lead and they don’t have older siblings to make fun of them, they like taking charge and have more confidence. Additionally, parents are more likely to praise every firstborn’s first milestone, which also can lead to more confidence.\textsuperscript{a}
Firstborns usually receive the most attention.

36. Firstborns are often used to being the center of attention. In fact, an oldest child will have approximately 3,000 more hours of quality time with his or her parents between ages 4 and 13 than the next sibling will get. 

37. Because firstborns tend to be perfectionists, they may be afraid of making mistakes and resist taking action. They may also have trouble admitting when they’re wrong.

38. Famous middle children include Donald Trump, Elijah Wood, Bill Gates, Princess Diana, and Martin Luther King, Jr.

39. Because last-borns view their older sibling as bigger, faster, and smarter, they may attempt to differentiate themselves by being more rebellious.

40. Studies show that middle-borns are the most monogamous of all birth orders.

41. One college survey showed that only-children are perceived as more self-centered, attention seeking, unhappy, and unlikeable than those who grew up with siblings.


43. Firstborns tend to walk and talk earlier than later-borns.

44. Statistics show that firstborns often fill positions of high authority or achievement. For example, Who’s Who in America and American Men and Women in Science both contain a high percentage of firstborns.

45. “Firstborn” may mean the first born in a family, the first child of that gender born in the family, or a child whose next-closest same-sex sibling is 5 or more years older than him or her.

Many U.S. presidents have been firstborns

46. Twenty-eight out of 44 U.S. presidents, or 64%, have been firstborns or functional (play the role of) firstborns.

47. Eight of the 11 presidential candidates in 2008 were firstborn sons or firstborn daughters in their families.

48. Research suggests that firstborns are more highly motivated to achieve than later-borns.

49. Of the first 23 American astronauts sent into outer space, 21 were firstborns and the other two were only-children.

50. All seven astronauts in the original Mercury program were firstborns.

51. Famous only-children include Natalie Portman, Maria Sharapova, Tiger Woods, Alicia Keys, Shane West, and Jada Pinkett Smith.

52. When a child is born with special needs, younger siblings may take on the firstborn role.

53. The physical makeup of children can skew birth order generalizations. For example, two closely spaced boys with the youngest being significantly bigger, or a firstborn girl who is extremely pretty and a second-born girl who is extremely plain.

Twins have their own unique birth order

54. Because middle-borns are sandwiched between younger and older siblings who wanted things done their way, middle children are often the ones to propose to compromise, often at their own expense.

55. Researchers are unsure why, but middle-borns tend to leave home relatively earlier than their siblings.

56. Because last-borns tend to focus so much of their attention on what others can do for them, they are less likely to set goals or be organized, though they tend to be more creative and innovative.

57. The last-born child typically has the least limits and, therefore, is more likely to take the riskiest options.

58. A danger for last-borns is that they may be more likely to be disappointed in life. Last-borns are more likely to grow up with expectations that other people, specifically parental figures, would automatically know and prove what you wanted. However, the longer people are taken care of, the higher the chance they will feel let down by others later in life.

59. Newscasters and TV talk show hosts tend to be firstborns or only-children. Prominent examples
include Peter Jennings, Oprah Winfrey, Geraldo Rivera, and Rush Limbaugh.⁴

60. Parents subconsciously identify with the child who holds the spot in the family they occupied themselves. A lastborn dad may think his youngest child’s antics are cute while a firstborn mom sees them as irresponsible.⁴

Source: