I'm not a robot

1928-presentAn intellectual prodigy, Noam Chomsky earned a doctorate degree in linguistics at the University of Pennsylvania. Since 1955, he has been a professor at MIT and has produced groundbreaking, controversial theories on human linguistic capacity. Chomsky is widely published, both on topics in his field and on issues of dissent and U.S. foreign policy.Jump to:FULL NAME: Avram Noam ChomskyBORN: December 7, 1928BIRTHPLACE: Philadelphia, PennsylvaniaSPOUSES: Carol Chomsky (1949-2008) and Valeria Wasserman (2014-present)CHILDREN: Aviva, Diane, and HarryASTROLOGICAL SIGN: Sagittarius Born in Philadelphia on December 7, 1928, Avram Noam Chomsky was a brilliant child. His curiosities and intellect were kindled greatly by his early experiences, including the weight of Americas Great Depression. He was raised with a younger brother, David, and although their family was middle class, Chomsky witnessed injustices all around him. One of his earliest memories consisted of watching security officers beat women strikers outside of a textile plant.His mother, Elsie, was active in the radical politics of the 1930s. His father, William, a Russian Jewish immigrant like his mother, was a respected professor of Hebrew at Gratz College, an institution for teachers training. At age 10, while attending a progressive school that emphasized student self-actualization, Noam wrote an editorial on the rise of fascism in Europe after the Spanish Civil War for his school newspaper. Rather amazingly, his story was substantially researched enough to be the basis for a later essay he presented at New York University.By age 13, Chomsky was traveling from Philadelphia to New York City, spending much of his time listening to the disparate perspectives hashed out among adults over cigarettes and magazines at his uncles newsstand at the back of a 72nd Street subway exit. Chomsky greatly admired his uncle, a man of little formal education but someone who was wildly smart about the world around him. Chomskys current political views spring from this type of lived-experience stance, positing that all people can understand politics and economics and make their own decisions, and that authority ought to be tested before being deemed legitimate and worthy of power.EducationJust as World War II was coming to a close, Chomsky began his studies at the University of Pennsylvania. He found little use for his classes until he met Zellig S. Harris, an American scholar touted for discovering structural linguistics (breaking language down into distinct parts or levels). Chomsky was moved by what he felt language could reveal about society. Harris was moved by Chomskys great potential and did much to advance the young mans undergraduate studies, with Chomsky receiving his bachelors and masters degrees in nontraditional modes of study.Harris introduced Chomsky to Harvard mathematician Nathan Fine and philosophers Nelson Goodman and W. V. Quine. Although an industrious student of Goodmans, Chomsky drastically disagreed with his approach. Goodman believed the human mind was a blank slate, whereas Chomsky believed the basic concepts of language were innate in every humans mind and then only influenced by ones syntactical environment. His 1951 masters thesis was titled The Morphophonemics of Modern Hebrew. For a short time, between Chomskys masters and doctoral studies, he and his wife Carol lived on a kibbutz in Israel. When they returned, Chomsky continued at the University of Pennsylvania and executed some of his research and writing at Harvard University. His dissertation eventually explored several ideas that he soon laid out in one of his best-known books on linguistics, Syntactic Structures (1957).Max WeberKarl MarxAngela DavisIn 1955, the professorial staff at Massachusetts Institute of Technology invited Chomsky to join their ranks. Now a professor emeritus, he worked in the schools Department of Linguistics & Philosophy for half a century before retiring from active teaching in 2005.During his career as a professor, Chomsky introduced transformational grammar to the linguistics field. His theory asserts that languages are innate and that the differences we see are only due to parameters developed over time in our brains, helping to explain why children are able to learn different languages more easily than adults. One of his most famous contributions to linguistics is what his contemporaries have called the Chomsky Hierarchy, a division of grammar into groups, moving up or down in their expressive abilities. These ideas have had huge ramifications in fields such as modern psychology and philosophy, both answering and raising questions about human nature and how we process information. In addition to his work at MIT, Chomasky has also been a visiting professor or lectured at a range of other universities, including Columbia; University of California, Los Angeles; Princeton; and Cambridge. He holds honorary degrees from many other institutions throughout the world.Getty ImagesNoam Chomsky has given lectures at universities and other venues around the world.Chomskys ideas have never been relegated to language alone. Weaving between the world of academia and popular culture, Chomsky has also gained a reputation for his often radical political views, which he describes as libertarian socialist, some of which have been seen as controversial and highly open to debate. In 1967, The New York Review of Books published his essay The Responsibility of Intellectuals. In light of the Vietnam War, which Chomsky adamantly opposed, he addressed what he saw as a disgracefully resigned intellectual community, of which he was an embarrassed member, with the hope of igniting his peers into deeper thought and action. In a 1977 article Chomsky co-authored with Edward S. Herman in The Nation, he questioned the credibility of the reporting of atrocities under the Khmer Rouge regime in Cambodia and suggested some reports were propaganda to place the role of the United States in a more favorable light. Decades later, Chomsky acknowledged in the 1993 documentary Manufacturing Consent the great act of genocide in the modern period is Pol Pot, 1975 through 1978. In 1979, Chomsky signed a petition in support of the free-speech rights of Robert Faurisson, a French lecturer who denied the existence of the gas chambers used in Nazi concentration camps. As a result, Chomsky found himself in the middle of a heated controversy. He asserted that his views are diametrically opposed to Faurissons conclusions and his intent was to support Faurissons civil liberties, not his Holocaust denial. The incident haunted Chomsky for decades, however, and his reputation in France, in particular, was damaged for some time afterward.Chomsky also sparked controversy with 9-11: Was There an Alternative?, his 2002 collection of essays which analyzes the September 11 attacks on the United States, the impact of American foreign policy, and media control. In the book, Chomsky denounces the horrifying atrocities of the attacks but is critical of the United States use of power, calling it a leading terrorist state. The book became a bestseller, denounced by conservative critics as a distortion of American history while praised by supporters as offering an honest analysis of events leading to 9-11 that werent being reported by the mainstream media. Despite his often controversial viewpoints, Chomsky remains a highly respected and sought-after thinker who has continued to author new books, contribute to a wide variety of journals, and remain active on the lecture circuit. Over the course of his career, Chomsky has also amassed a wealth of academic and humanitarian awards, including the Distinguished Scientific Contribution Award from the American Psychological Association, the Kyoto Prize in Basic Sciences, and the humanitarian Sydney Peace Prize.The Essential ChomskyChomskys writings on linguistics include Current Issues in Linguistic Theory (1964), Aspects of the Theory of Syntax (1965), The Sound Pattern of English (with Morris Halle, 1968), Language and Mind (1972), Studies on Semantics in Generative Grammar (1972), and Knowledge of Language (1986).He has also written many books addressing politics. They include American Power and the New Mandarins (1969), Peace in the Middle East? (1974), Manufacturing Consent: The Political Economy of the Mass Media (with Edward S. Herman, 1988), Profit over People (1998), Rogue States (2000), Hegemony or Survival (2003), Gaza in Crisis (with Ilan Papp, 2010), and most recently, On Western Terrorism: From Hiroshima to Drone Warfare (2013).In 1949, Chomsky married educational specialist Carol Schatz, a woman he had known since childhood. The relationship lasted for 59 years until she died from cancer in 2008. They had three children together: daughters Aviva and Diane and a son named Henry.In 2014, at age 85, Chomsky remarried, to Valeria Wasserman. In June 2024, Valeria revealed Chomsky was hospitalized in Brazil as he continues to recover from a massive stroke he suffered in the previous June. She said he has difficulty speaking and receives daily visits from a neurologist, speech therapist, and lung specialist.The deceit and distortion surrounding the American invasion of Vietnam is by now so familiar that it has lost its power to shock.Some of my earliest memories, which are very vivid, are of people selling rags at our door, of violent police strikebreaking, and other Depression scenes. Whatever the reasons may be, I was very much affected by events of the 1930s, the Spanish Civil War, for example, though I was barely literate.Some of the most moving experiences Ive had are just in Black churches in the South, during the Civil Rights Movement, where people were getting beaten, killed, really struggling for the most elementary rights. Just asking for the congressional amendments during the Civil War, asking them to be implemented.Fact Check: We strive for accuracy and fairness. If you see something that doesnt look right, contact us!Biography.com EditorsStaff Editorial Team and ContributorsThe Biography.com staff is a team of people-obsessed and news-hungry editors with decades of collective experience. We have worked as daily newspaper reporters, major national magazine editors, and as editors-in-chief of regional media publications. Among our ranks are book authors and award-winning journalists. Our staff also works with freelance writers, researchers, and other contributors to produce the smart, compelling profiles and articles you see on our site. To meet the team, visit our About Us page: Chomskyis internationally recognized for his writing, lecturing, and teaching on linguistics, philosophy, contemporary issues, intellectual history, international affairs, and U.S. foreign policy. Born in 1928 in Philadelphia, Pennsylvania, he studied linguistics, mathematics, and philosophy at the University of Pennsylvania, where he received his PhD in linguistics. He taught at the Massachusetts Institute of Technology for 50 years and is now an institute professor emeritus in the Department of Linguistics and Philosophy at MIT and a laureate professor of linguistics and the Agnese Nelms Haury Chair in the Program in Environment and Social Justice at the University of Arizona.He has published leagues of work, including numerous best-selling political books, which have been translated into scores of languages worldwide, most notably among them:Hopes and Prospects,The Essential Chomsky,Hegemony or Survival,For Reasons of State,Occupy, andFateful Triangle. Among his most recent books are Who Rules the World?, Requiem for the American Dream, and What Kind of Creatures Are We? In Spring 2022, he will publish Chronicles of Dissent, a new compilation of his 1984-1996 interviews with David Barsamian.The New York Times Book Reviewsays, Judged in terms of the power, range, novelty, and influence of his thought, Noam Chomsky is arguably the most important intellectual alive. BOOKS ARTICLES AUDIO AND VIDEO INTERVIEWS BIOS RECENT UPDATES TALKS DEBATES LETTERS ABOUT photo credit: Oliver Abraham (oliverabraham (at) gmx.de) Visit The Chomsky Index for additional searches on Chomsky's works, including transcribed videos. Philosophy & Religion Philosophers Noam Chomsky (born December 7, 1928, Philadelphia, Pennsylvania, U.S.) is an American theoretical linguist whose work from the 1950s revolutionized the field of linguistics by treating language as a uniquely human, biologically based cognitive capacity. Through his contributions to linguistics and related fields, including cognitive psychology and the philosophies of mind and language, Chomsky helped to initiate and sustain what came to be known as the cognitive revolution. Chomsky also gained a worldwide following as a political dissident for his analyses of the pernicious influence of economic elites on U.S. domestic politics, foreign policy, and intellectual culture. Born into a middle-class Jewish family, Chomsky attended an experimental elementary school in which he was encouraged to develop his own interests and talents through self-directed learning. When he was 10 years old, he wrote an editorial for his school newspaper lamenting the fall of Barcelona in the Spanish Civil War and the rise of fascism in Europe. His research then and during the next few years was thorough enough to serve decades later as the basis of Objectivity and Liberal Scholarship (1969), Chomskys critical review of a study of the period by the historian Gabriel Jackson. When he was 13 years old, Chomsky began taking trips by himself to New York City, where he found books for his voracious reading habit and made contact with a thriving working-class Jewish intellectual community. Discussion enriched and confirmed the beliefs that would underlie his political views throughout his life: that all people are capable of comprehending political and economic issues and making their own decisions on that basis; that all people need and derive satisfaction from acting freely and creatively and from associating with others; and that authoritywhether political, economic, or religiousthat cannot meet a strong test of rational justification is illegitimate. According to Chomskys anarchosyndicalism, or libertarian socialism, the best form of political organization is one in which all people have a maximal opportunity to engage in cooperative activity with others and to take part in all decisions of the community that affect them. In 1945, at the age of 16, Chomsky entered the University of Pennsylvania but found little to interest him. After two years he considered leaving the university to pursue his political interests, perhaps by living on a kibbutz. He changed his mind, however, after meeting the linguist Zellig S. Harris, one of the American founders of structural linguistics, whose political convictions were similar to Chomskys. Chomsky took graduate courses with Harris and, at Harriss recommendation, studied philosophy with Nelson Goodman and Nathan Salmon and mathematics with Nathan Fine, who was then teaching at Harvard University. In his 1951 masters thesis, The Morphophonemics of Modern Hebrew, and especially in The Logical Structure of Linguistic Theory (LSLT), written while he was a junior fellow at Harvard (195155) and published in part in 1975, Chomsky adopted aspects of Harriss approach to the study of language and of Goodmans views on formal systems and the philosophy of science and transformed them into something novel. Whereas Goodman assumed that the mind at birth is largely a tabula rasa (blank slate) and that language learning in children is essentially a conditioned response to linguistic stimuli, Chomsky held that the basic principles of all languages, as well as the basic range of concepts they are used to express, are innately represented in the human mind and that language learning consists of the unconscious construction of a grammar from these principles in accordance with cues drawn from the childs linguistic environment. Whereas Harris thought of the study of language as the taxonomic classification of data, Chomsky held that it is the discovery, through the application of formal systems, of the innate principles that make possible the swift acquisition of language by children and the ordinary use of language by children and adults alike. And whereas Goodman believed that linguistic behaviour is regular and caused (in the sense of being a specific response to specific stimuli), Chomsky argued that it is incited by social context and discourse context but essentially uncausedenabled by a distinct set of innate principles but innovative, or creative. It is for this reason that Chomsky believed that it is unlikely that there will ever be a full-fledged science of linguistic behaviour. As in the view of the 17th-century French philosopher Rne Descartes, according to Chomsky, the use of language is due to a creative principle, not a causal one. Harris ignored Chomskys work, and Goodmanwhen he realized that Chomsky would not accept his behaviourismdenounced it. Their reactions, with some variations, were shared by a large majority of linguists, philosophers, and psychologists. Although some linguists and psychologists eventually came to accept Chomskys basic assumptions regarding language and the mind, most philosophers continued to resist them. Chomsky received a Ph.D. in linguistics from the University of Pennsylvania in 1955 after submitting one chapter of LSLT as a doctoral dissertation (Transformational Analysis). In 1956 he was appointed by the Massachusetts Institute of Technology (MIT) to a teaching position that required him to spend half his time on a machine translation project, though he was openly skeptical of its prospects for success (he told the director of the translation laboratory that the project was of no intellectual interest and was also pointless). Impressed with his book Syntactic Structures (1957), a revised version of a series of lectures he gave to MIT undergraduates, the university asked Chomsky and his colleague Morris Halle to establish a new graduate program in linguistics, which soon attracted several outstanding scholars, including Robert Lees, Jerry Fodor, Jerold Katz, and Paul Postal. Chomskys 1959 review of Verbal Behavior, by B.F. Skinner, the dean of American behaviourism, came to be regarded as the definitive refutation of behaviourist accounts of language learning. Starting in the mid-1960s, with the publication of Aspects of the Theory of Syntax (1965) and Cartesian Linguistics (1966), Chomskys approach to the study of language and mind gained wider acceptance within linguistics, though there were many theoretical variations within the paradigm. Chomsky was appointed full professor at MIT in 1961, Ferrari P. Ward Professor of Modern Languages and Linguistics in 1966, and Institute Professor in 1976. He retired from MIT as professor emeritus in 2002. Fifteen years later, in 2017, he became a laureate professor of linguistics at the University of Arizona. In 1947 Chomsky married Carol Doris Schatz, a linguist and early-education specialist. The couple had three children and remained married until his wifes death in 2008. In 2014 Chomsky married Valeria Wasserman, a Brazilian translator. In June 2023, at the age of 94, he suffered a severe stroke, which greatly impaired his ability to speak and move. Noam Chomsky, who joined the UA faculty in fall 2017, is a laureate professor in the Department of Linguistics in the College of Social and Behavioral Sciences. He is also the Agnese Nelms Haury Chair in the Agnese Nelms Haury Program in Environment and Social Justice. Considered the founder of modern linguistics, Noam Chomsky is one of the most cited scholars in modern history. Among his groundbreaking books are Syntactic Structures, Language and Mind,Aspects of the Theory of Syntax, and The Minimalist Program,each of which has made distinct contributions to the development of the field. Chomsky is credited with revolutionizing the linguistics field by introducing the Chomsky hierarchy, generative grammar and the concept of a universal grammar, which underlies all human speech and is based in the innate structure of the mind/brain. Chomsky's work also has influenced the fields of cognitive science, philosophy, psychology, computer science, mathematics, childhood education and anthropology. Applications of his work can be found in everyday life. He formulated the algorithm "context-free grammar," which is part of most computer programming languages, as well as programs that appear to understand language, such as Siri. He also has challenged traditional notions of learning, emphasizing how much knowledge and behavior is "built in" to the childs brain. One of the most influential public intellectuals in the world, Chomsky has been the subject of seven biographies, has been interviewed countless times in popular media, and has appeared in over 20 films and documentaries. An ardent free speech advocate, Chomsky is famous for his political commentary and has published and lectured widely on U.S. foreign policy, Mideast politics, democratic society, and war. He has written more than 100 books, including Requiem for the American Dream: The 10 Principles of Concentration of Wealth & Power and "Manufacturing Consent: The Political Economy of the Mass Media." Chomsky has received numerous awards, including the Kyoto Prize in Basic Sciences, the Helmholtz Medal, the Ben Franklin Medal in Computer and Cognitive Science, and the BBVA Foundation Frontiers of Knowledge Award in the Humanities and Social Sciences. Noam Chomsky (born December 7, 1928) is an American linguist, philosopher, and political activist. His theories made the modern scientific study of linguistics possible. He is a leader in peace activism and opposition to U.S. foreign policy.Full Name: Avram Noam ChomskyOccupation: Linguistics theorist and political writerBorn: December 7, 1928 in Philadelphia, PennsylvaniaSpouse: Carol Doris Schatz (died 2008), Valeria Wasserman (married 2014)Children: Aviva, Diane, HarryEducation: University of Pennsylvania and Harvard UniversitySelected Works: "Syntactic Structures" (1957), "Fateful Triangle" (1983), "Manufacturing Consent" (1988), "Understanding Power" (2002) Noam Chomsky's parents, William and Elsie, were Ashkenazi Jewish immigrants. William fled Russia in 1913 to avoid conscription into the army. He worked in Baltimore sweatshops upon arriving in the U.S. After university education, William joined the Gratz College faculty in Philadelphia. Elsie was born in Belarus and became a teacher. Growing up deeply enmeshed in Jewish culture, Noam Chomsky learned Hebrew as a child. He took part in family discussions of the politics of Zionism, the international movement supporting the development of a Jewish nation. Chomsky described his parents as typical Roosevelt Democrats, but other relatives introduced him to socialism and the politics of the far left. Noam Chomsky wrote his first article at age ten about the dangers of the spread of fascism during the Spanish Civil War. Two or three years later, he began identifying himself as an anarchist. Noam Chomsky enrolled in the University of Pennsylvania at age 16. He paid for his education by teaching Hebrew. For some time, frustrated with the university education, he considered dropping out and moving to a kibbutz in Palestine. However, meeting Russian-born linguist, Zeilig Harris changed his education and career. Influenced by the new mentor, Chomsky decided to major in theoretical linguistics. Setting himself up in opposition to the prevailing behaviorist theories of linguistics, Chomsky attended Harvard University as a Ph.D. student from 1951 to 1955. His first academic article, "Systems of Syntactic Analysis," appeared in The Journal of Symbolic Logic. The Massachusetts Institute of Technology (MIT) hired Noam Chomsky as an assistant professor in 1955. There, he published his first book, "Syntactic Structures." In the work, he discusses a formal theory of linguistics that distinguishes between syntax, the structure of language, and semantics, the meaning. Most academic linguists either dismissed the book or were openly hostile to it. Later, it was recognized as a volume that revolutionized the scientific study of linguistics. Lee Lockwood / Getty Images In the early 1960s, Chomsky argued against language as learned behavior, a theory promoted by the famed psychologist B.F. Skinner. He believed that theory failed to account for creativity in human linguistics. According to Chomsky, humans aren't born as a blank slate when it comes to language. He believed the necessary range of rules and structures for creating grammar are innate in the human mind. Without the presence of those basics, Chomsky thought creativity was impossible. Beginning in 1962, Noam Chomsky joined protests against the U.S. involvement in the Vietnam War. He began speaking publicly at small gatherings and published the anti-war essay "The Responsibility of Intellectuals" in "The New York Review of Books" in 1967. He collected his political writing in the 1969 book "American Power and the New Mandarins." Chomsky followed it with four more political books in the 1970s. Chomsky helped form the anti-war intellectual collective RESIST in 1967. Among the other founding members were clergyman William Sloane Coffin and poet Denise Levertov. He collaborated with Louis Kampf to teach undergraduate courses on politics at MIT. In 1970, Chomsky visited North Vietnam to lecture at the Hanoi University of Science and Technology and then toured refugee camps in Laos. The anti-war activism earned him a place on President Richard Nixon's list of political opponents. 1967 Anti-War Rally in Washington, D.C.Leif Skoogfors / Getty Images Noam Chomsky continued to expand and update his theories of language and grammar in the 1970s and 1980s. He introduced a framework of what he called "principles and parameters." The principles were basic structural features universally present in all of the natural languages. They were the material that was natively present in a child's mind. The presence of these principles helped explain the rapid acquisition of language facility in young children. Ulf Andersen / Getty Images Parameters were the optional materials that can provide variance in linguistic structure. Parameters could impact word order in sentences, the sounds of language, and many other elements that make languages different from each other. Chomsky's shift in the paradigm of language study revolutionized the field. It impacted other areas of study like ripples produced by a stone dropped in a pond. Chomsky's theories were very important in the development of both computer programming and the study of cognitive development. In addition to his academic work in linguistics, Noam Chomsky remained committed to his standing as a prominent political dissident. He opposed the U.S. support of the Contras in their fight against the Nicaraguan Sandinista government in the 1980s. He visited with workers' organizations and refugees in Managua and lectured on the intersection between linguistics and politics. Chomsky's 1983 book "The Fateful Triangle" argued that the U.S. government used the Israeli-Palestinian conflict for its own ends. He visited Palestinian territories in 1988 to witness the impact of the Israeli occupation. Noam Chomsky speaking at a Palestinian protest against Israel in Gaza in 2012.Mahmud Hams / Getty Images Among the other political causes that drew Chomsky's attention were the fight for East Timor independence in the 1990s, the Occupy movement in the U.S., and efforts to abolish nuclear weapons. He also applies his theories of linguistics to help explain the impact of the media and propaganda in political movements. Noam Chomsky officially retired from MIT in 2002. However, he continued to conduct research and hold seminars as an emeritus faculty member. He continues to deliver lectures around the world. In 2017, Chomsky taught a politics course at the University of Arizona in Tucson. He became a part-time professor there in the linguistics department. Rick Friedman / Getty Images Chomsky received honorary doctorate degrees from institutions around the world including the University of London, University of Chicago, and Delhi University. He's often named as one of the most influential intellectuals of the latter half of the 20th century. He earned the 2017 Sean MacBride Peace Prize from the International Peace Bureau. Noam Chomsky is recognized as the "father of modern linguistics." He is also one of the founders of cognitive science. He has published more than 100 books ranging across the disciplines of linguistics, philosophy, and politics. Chomsky is one of the most prominent critics of U.S. foreign policy and one of the most frequently cited scholars in academia. Chomsky, Noam. Who Rules the World? Metropolitan Books, 2016.Chomsky, Noam, Peter Mitchell, and John Schoeffel. Understanding Power: The Indispensable Chomsky. The New Press, 2002. Noam Chomsky is an American linguist who has had a profound impact on philosophy. Chomskys linguistic work has been motivated by the observation that nearly all adult human beings have the ability to effortlessly produce and understand a potentially infinite number of sentences. For instance, it is very likely that before now you have never encountered this very sentence you are reading, yet if you are a native English speaker, you easily understand it. While this ability often goes unnoticed, it is a remarkable fact that every developmentally normal person gains this kind of competence in their first few years, no matter their background or general intellectual ability. Chomskys explanation of these facts is that language is an innate and universal human property, a species-wide trait that develops as one matures in much the same manner as the organs of the body. A language is, according to Chomsky, a state obtained by a specific mental computational system that develops naturally and whose exact parameters are set by the linguistic environment that the individual is exposed to as a child. This definition, which is at odds with the common notion of a language as a public system of verbal signals shared by a group of speakers, has important implications for the nature of the mind.Over decades of active research, Chomskys model of the human language facultythe part of the mind responsible for the acquisition and use of languagehas evolved from a complex system of rules for generating sentences to a more computationally elegant system that consists essentially of just constrained recursion (the ability of a function to apply itself repeatedly to its own output). What has remained constant is the view of language as a mental system that is based on a genetic endowment universal to all humans, an outlook that implies that all natural languages, from Latin to Kalaallisut, are variations on a Universal Grammar, differing only in relatively unimportant surface details. Chomskys research program has been revolutionary but contentious, and critics include prominent philosophers as well as linguists who argue that Chomsky discounts the diversity displayed by human languages.Chomsky is also well known as a champion of liberal political causes and as a trenchant critic of United States foreign policy. However, this article focuses on the philosophical implications of his work on language. After a biographical sketch, it discusses Chomskys conception of linguistic science, which often departs sharply from other widespread ideas in this field. It then gives a thumbnail summary of the evolution of Chomskys research program, especially the points of interest to philosophers. This is followed by a discussion of some of Chomskys key ideas on the nature of language, language acquisition, and meaning. Finally, there is a section covering his influence on the philosophy of mind.Table of Contents 1. LifeAvram Noam Chomsky was born in Philadelphia in 1928 to Jewish parents who had immigrated from Russia and Ukraine. He manifested an early interest in politics and, from his teenage years, frequented anarchist bookstores and political circles in New York City. Chomsky attended the University of Pennsylvania at the age of 16, but he initially found his studies unstimulating. After meeting the mathematical linguist Zellig Harris through political connections, Chomsky developed an interest in language, taking graduate courses with Harris and, on his advice, studying philosophy with Nelson Goodman. Chomskys 1951 undergraduate honors thesis, on Modern Hebrew, would form the basis of his MA thesis, also from the University of Pennsylvania. Although Chomsky would later have intellectual fallings out with both Harris and Goodman, they were major influences on him, particularly in their rigorous approach, informed by mathematics and logic, which would become a prominent feature of his own work.After earning his MA, Chomsky spent the next four years with the Society of Fellows at Harvard, where he had applied largely because of his interest in the work of W.V.O. Quine, a Harvard professor and major figure in analytic philosophy. This would later prove to be somewhat ironic, as Chomskys work developed into the antithesis of Quines behaviorist approach to language and mind. In 1955, Chomsky was awarded his doctorate and became an assistant professor at the Massachusetts Institute of Technology, where he would continue to work as an emeritus professor even after his retirement in 2002. Throughout this long tenure at MIT, Chomsky produced an enormous volume of work in linguistics, beginning with the 1957 publication of Syntactic Structures. Although his work initially met with indifference or even hostility, including from his former mentors, it gradually altered the very nature of the field, and Chomsky grew to be widely recognized as one of the most important figures in the history of language science. Since 2017, he has been a laureate professor in the linguistics department at the University of Arizona.Throughout his career, Chomsky has been at least as prolific in social, economic, and political criticism as in linguistics. Chomsky became publicly outspoken about his political views with the escalation of the Vietnam War, which he always referred to as an invasion. He was heavily involved in the anti-war movement, sometimes risking both his professional and personal security, and was arrested several times. He remained politically active and, among many other causes, was a vocal critic of US interventions in Latin America during the 1980s, the reaction to the September 2001 attacks, and the invasion of Iraq. Chomsky has opposed, since his early youth, the capitalist economic model and supported the Occupy movement of the early 2010s. He has also been an unwavering advocate of intellectual freedom and freedom of speech, a position that has at times pitted him against other left-leaning intellectuals and caused him to defend the rights of others who have very different views from his own. Despite the speculations of many biographers, Chomsky has always denied any connection between his work in language and politics, sometimes quipping that someone was allowed to have more than one interest.In 1947, Chomsky married the linguist Carol Doris Chomsky (nee Schatz), a childhood friend from Philadelphia. They had three children and remained married until her death in 2008. Chomsky remarried Valeria Wasserman, a Brazilian professional translator, in 2014.2. Philosophy of LinguisticsChomskys approach to linguistic science, indeed his entire vision of what the subject matter of the discipline consists of, is a sharp departure from the attitudes prevalent in the mid-20th century. To simplify, prior to Chomsky, language was studied as a type of communicative behavior, an approach that is still widespread among those who do not accept Chomskys ideas. In contrast, his focus is on language as a type of (often unconscious) knowledge. The study of language has, as Chomsky states, three aspects: determining what the system of knowledge a language user has consists of, how that knowledge is acquired, and how that knowledge is used. A number of points in Chomskys approach are of interest to the philosophy of linguistics and to the philosophy of science more generally, and some of these points are discussed below.a. Behaviorism and LinguisticsWhen Chomsky was first entering academics in the 1950s, the mainstream school of linguistics for several decades had been what is known as structuralism. The structuralist approach, endorsed by Chomskys mentor Zellig Harris, among others, concentrated on analyzing corpora, or records of the actual use of a language, either spoken or written. The goal of the analysis was to identify patterns in the data that might be studied to yield, among other things, the grammatical rules of the language in question. Reflecting this focus on language as it is used, structuralists viewed language as a social phenomenon, a communicative tool shared by groups of speakers. Structuralist linguistics might well be described as consisting of the study of what happens between a speakers mouth and a listeners ear; as one well -known structuralist put it, the linguist deals only with the speech signal (Bloomfield, 1933: 32). This is in marked contrast to Chomsky and his followers, who concentrate on what is going on in the mind of a speaker and who look there to identify grammatical rules.Structuralist linguistics was itself symptomatic of behaviorism, a paradigm prominently championed in psychology by B.F. Skinner and in philosophy by W.V.O. Quine and which was dominant in the midcentury. Behaviorism held that science should restrict itself to observable phenomena. In psychology, this meant seeking explanations entirely in terms of external behavior without discussing minds, which are, by their very nature, unobservable. Language was to be studied in terms of subjects responses to stimuli and their resulting verbal output. Behaviorist theories were often formed on the basis of laboratory experiments in which animals were conditioned by being given food rewards or tortured with electric shock in order to shape their behavior. It was thought that human behavior could be similarly explained in terms of conditioning that shapes reactions to specific stimuli. This approach perhaps reached its zenith with the publication of Skinners Verbal Behavior (1957), which sought to reduce human language to conditioned responses. According to Skinner, speakers are conditioned as children, through training by adults, to respond to stimuli with an appropriate verbal response. For example, a child might realize that if they see a piece of candy (the stimulus) and respond by saying candy, they might be rewarded by adults with the desired sweet, reinforcing that particular response. For an adult speaker, the pattern of stimuli and response could be very complex, and what specific aspect of a situation is being responded to might be difficult to ascertain, but the underlying principle was held to be the same.Chomskys scathing 1959 review of Verbal Behavior has actually become far better known than the original book. Although Chomsky conceded to Skinner that the only data available for the study of language consisted of what people say, he denied that meaningful explanations were to be found at that level. He argued that in order to explain a complex behavior, such as language use, exhibited by a complex organism such as a human being, it is necessary to inquire into the internal organization of the organism and how it processes information. In other words, it was necessary to make inferences about the language users mind. Elsewhere, Chomsky likened the procedure of studying language to what engineers would do if confronted with a hypothetical black box, a mysterious machine whose input and output were available for inspection but whose internal functioning was hidden. Merely detecting patterns in the output would not be accepted as real understanding; instead, that would come from inferring what internal processes might be at work.Chomsky particularly criticized Skinners theory that utterances could be classified as responses to subtle properties of an object or event. The observation that human languages seem to exhibit stimulus-freedom goes back at least to Descartes in the 17th century, and about the same time as Chomsky was reviewing Skinner, the linguist Charles Hockett (later one of Chomskys most determined critics) suggested that this is one of the features that distinguish human languages from most examples of animal communication. For instance, a vervet monkey will give a distinct alarm call any time she spots an eagle and at no other times. In contrast, a human being might say anything or nothing in response to any given stimulus. Viewing a paining one might say, Dutchclashes with the wallpaper. Tilted, hanging too low, beautiful, hideous, remember our camping trip last summer? or whatever else might come to our minds when looking at a picture. (Chomsky, 1959:2). What aspect of an object, event, or environment triggers a particular response rather than another can only be explained in mental terms. The most relevant fact is what the speaker is thinking about, so a true explanation must take internal psychology into account.Chomskys observation concerning speech was part of his more general criticism of the behaviorist approach. Chomsky held that attempts to explain behavior in terms of stimuli and responses will be in general a vain pursuit. In all but the most elementary cases, what a person does depends in large measure on what he knows, believes, and anticipates (Chomsky, 2006: xv). This was also meant to apply to the behaviorist and empiricist philosophy exemplified by Quine. Although Quine has remained important in other aspects of analytic philosophy, such as logic and ontology, his behaviorism is largely forgotten. Chomsky is widely regarded as having inaugurated the era of cognitive science as it is practiced today, that is, as a study of the mental.b. The Galilean MethodChomskys fundamental approach to doing science was and remains different from that of many other linguists, not only in his concentration on mentalistic explanation. One approach to studying any phenomenon, including language, is to amass a large amount of data, look for patterns, and then formulate theories to explain those patterns. This method, which might seem like the obvious approach to doing any type of science, was favored by structuralist linguists, who valued the study of extensive catalogs of actual speech in the worlds languages. The goal of the structuralists was to provide descriptions of a language at various levels, starting with the analysis of pronunciation and eventually building up to a grammar for the language that would be an adequate description of the regularities identifiable in the data.In contrast, Chomskys method is to concentrate not on a comprehensive analysis but rather on certain crucial data, or data that is better explained by his theory than by its rivals. This sort of methodology is often called Galilean, since it takes as its model the work of Galileo and Newton. These physicists, judiciously, did not attempt to identify the laws of motion by recording and studying the trajectory of as many moving objects as possible. In the normal course of events, the exact paths traced by objects in motion are the results of the complex interactions of numerous phenomena such as air resistance, surface friction, human interference, and so on. As a result, it is difficult to clearly isolate the phenomena of interest. Instead, the early physicists concentrated on certain key cases, such as the behavior of masses in free fall or even idealized fictions such as objects gliding over frictionless planes, in order to identify the principles that, in turn, could explain the wider data. For similar reasons, Chomsky doubts that the study of actual speechwhat he calls performancewill yield theoretically important insights. In a widely cited passage (Chomsky, 1962, 531), he noted that:Actual discourse consists of interrupted fragments, false starts, lapses, slurring, and other phenomena that can only be understood as distortions of an underlying idealized pattern.Like the ordinary movements of objects observable in nature, which Galileo largely ignored, actual speech performance is likely to be the product of a mass of interacting factors, such as the social conventions governing the speech exchange, the urgency of the message and the time available, the psychological states of the speakers (excited, panicked, drunk), and so on, of which purely linguistic phenomena will form only a small part. It is the idealized patterns concealed by these effects and the mental system that generates those patterns the underlying competence possessed by language users that Chomsky regards as the proper subject of linguistic study. (Although the terms competence and performance have been superseded by the I-Language/E-Language distinction, discussed in 4.c. below, these labels are fairly entrenched and still widely used.)c. The Nature of the EvidenceEarly in his career (1965), Chomsky specified three levels of adequacy that a theory of language should satisfy, and this has remained a feature of his work. The first level is observational, to determine what sentences are grammatically acceptable in a language. The second is descriptive, to provide an account of what the speaker of the language knows, and the third is explanatory, to give an explanation of how such knowledge is acquired. Only the observational level can be attained by studying what speakers actually say, which cannot provide much insight into what they know about language, much less how they came to have that knowledge. A source of information about the second and third levels, perhaps surprisingly, is what speakers do not say, and this has been a focus of Chomskys program. This negative data is drawn from the judgments of native speakers about what they feel they cant say in their language. This is not, of course, in the sense of being unable to produce these strings of words or of being unable, with a little effort, to understand the intended message, but simply a gut feeling that you cant say that. Chomsky himself calls these interpretable but unsayable sentences perfectly fine thoughts, while the philosopher Georges Rey gave them the pithier name WhyNots. Consider the following examples from Rey 2022 (the * symbol is used by linguists to mark a string that is ill-formed in that it violates some principle of grammar):(1) * Who did John and kiss Mary? (Compared to John, and who kissed Mary? and who-initial questions like Who did John kiss?)(2) * Who did stories about terrify Mary? (Compared to stories about who terrified Mary?)Or the following question/answer pairs:(3) Which cheese did you recommend without tasting it? * I recommended the brie without tasting it. (Compared to without tasting it.)(4) Have you any wool? * Yes, I have any wool.An introductory linguistics textbook provides two further examples (OGrady et al. 2005):(5) * I went to movie. (Compared to I went to school.)(6) *May ate a cookie, and then Johnnie ate some cake, too. (Compared to Mary ate a cookie, and then Johnnie ate a cookie too/ate a snack too.)The vast majority of English speakers would balk at these sentences, although they would generally find it difficult to say precisely what the issue is (the textbook challenges the reader to try to explain). Analogous whynot sentences exist in every language yet studied.What Chomsky holds to be significant about this fact is that almost no one, aside from those who are well read in linguistics or philosophy of language, has ever been exposed to (1) (6) or any sentences like them. Analysis of corpora shows that sentences constructed along these lines virtually never occur, even in the speech of young children. This makes it very difficult to accept the explanation, favored by behaviorists, that we recognize them to be unacceptable as the result of training and conditioning. Since children do not produce utterances like (1) (6), parents never have a chance to explain what is wrong, to correct them, and to tell them that such sentences are not part of English. Further, since they are almost never spoken by anyone, it is vanishingly unlikely that a parent and child would overhear them so that the parent could point them out as ill-formed. Neither is this knowledge learned through formal instruction in school. Instruction in not saying sentences like (1)(6) is not a part of any curriculum, and an English speaker who has never attended a day of school is as capable of recognizing the unacceptability of (1)(6) as any college graduate.Examples can be multiplied far beyond (1)(6); there are indefinite numbers of strings of English words (or words of any language) that are comprehensible but unacceptable. If speakers are not trained to recognize them as ill-formed, how do they acquire this knowledge? Chomsky argues that this demonstrates that human beings possess an underlying competence capable of forming and identifying grammatical structureswords, phrases, clauses, and sentences in a way that operates almost entirely outside of conscious awareness, computing over structural features of language that are not actually pronounced or written down but which are critical to the production and understanding of sentences. This competence and its acquisition are the proper subject matter for linguistic science, as Chomsky defines the field.d. Linguistic StructuresAn important part of Chomskys linguistic theory (although it is an idea that predates him by several decades and is also endorsed by some rival theories) is that it postulates structures that lie below the surface of language. The presence of such structures is supported by, among other evidence, considering cases of non-linear dependency between the words in a sentence, that is, cases where a word modifies another word that is some distance away in the linear order of the sentence as it is pronounced. For instance, in the sentence (from Berwick and Chomsky, 2017: 117):(7) Instinctively, birds who fly swim.we know that instinctively applies to swim rather than fly, indicating an unspoken connection that bypasses the three intervening words and which the language faculty of our mind somehow detects when parsing the sentence. Chomskys hypothesis of a dedicated language faculty a part of the mind existing for the sole purpose of forming and interpreting linguistic structures, operating in isolation from other mental systems is supported by the fact that nonlinguistic knowledge does not seem to be relied on to arrive at the correct interpretation of sentences such as (7). Try replacing swim with play chess. Although you know that birds instinctively fly and do not play chess, your language faculty provides the intended meaning without any difficulty. Chomskys theory would suggest that this is because that faculty parses the underlying structure of the sentence rather than relying on your knowledge about birds.According to Chomsky, the dependence of human languages on these structures can also be observed in the way that certain types of sentences are produced from more basic ones. He frequently discusses the formation of questions from declarative sentences. For instance, any English speaker understands that the question form of (8) is (9), and not (10) (Chomsky, 1986: 45):(8) The man who is here is tall.(9) Is the man who is here tall?(10) * Is the man who here is tall?What rule does a child learning English have to grasp to know this? To a Martian linguist unfamiliar with the way that human languages work, a reasonable initial guess might be to move the fourth word of the sentence to the front, which is obviously incorrect. To see this, change (8) to:(11) The man who was here yesterday was tall.A more sophisticated hypothesis might be to move the second auxiliary verb in the sentence, is in the case of (8), to the front. But this is also not correct, as more complicated cases show:(12) The woman who is in charge of deciding who is hired is ready to see him now. (13) * Is the woman who is in charge of deciding who hired is ready to see him now?In fact, in no human language do transformations from one type of sentence to another require taking the linear order of words into account, although there is no obvious reason why they shouldnt. A language that works on a principle such as switch the first and second words of a sentence to indicate a question is certainly imaginable and would seem simple to learn, but no language yet cataloged operates in such a way.The correct rule in the cases of (8) through (13) is that the question is formed by moving the auxiliary verb (is) occurring in the verb phrase of the main clause of the sentence, not the one in the relative clause (a clause modifying a noun, such as who is here). Thus, knowing that (9) is the correct question form of (8) or that (13) is wrong requires sensitivity to the way that the elements of a sentence are grouped together into phrases and clauses. This is something that is not apparent on the surface of either the spoken or written forms of (8) or (12), yet a speaker with no formal instruction grasps it without difficulty. It is the study of these underlying structures and the way that the mind processes them that is the core concern of Chomskyan linguistics, rather than the analysis of the strings of words actually articulated by speakers.3. The Development of Chomskys Linguistic TheoryChomskys research program, which has grown to involve the work of many other linguists, is closely associated with generative linguistics. This name refers to the project of identifying sets of rulesgrammarsthat will generate all and only the sentences of a language. Although explicit rules eventually drop out of the picture, replaced by more abstract principles, the goal remains to identify a system that can produce the potentially infinite number of sentences of a human language using the resources contained in the minds of a speaker, which are necessarily finite.Chomskys work has implications for the study of language as a whole, but his concentration has been on syntax. This branch of linguistic science is concerned with the grammars that govern the production of sentences that are acceptable in a language and divide them from nonacceptable strings of words, as opposed to semantics, the part of linguistics concerned with the meaning of words and sentences, and pragmatics, which studies the use of language in context.Although the methodological principles have remained constant from the start, Chomskys theory has undergone major changes over the years, and various iterations may seem, at least on a first look, to have little obvious common ground. Critics present this as evidence that the program has been stumbling down one dead end after another, while Chomsky asserts in response that rapid evolution is characteristic of new fields of study and that changes in a programs guiding theory are evidence of healthy intellectual progress. Five major stages of development might be identified, corresponding to the subsections below. Each stage builds on previous ones, it has been alleged; superseded iterations should not be considered to be false but rather replaced by a more complete explanation.a. Logical ConstructivismChomskys theory of language began to be codified in the 1950s, first set down in a massive manuscript that was later published as Logical Structure of Linguistic Theory (1975) and then partially in the much shorter and more widely read Syntactic Structures (1957). These books differed significantly from later iterations of Chomskys work in that they were more of an attempt to show what an adequate theory of natural language would need to look like than to fully work out such a theory. The focus was on demonstrating how a small set of rules could operate over a finite vocabulary to generate an infinite number of sentences, as opposed to identifying a psychologically realistic account of the processes actually occurring in the mind of a speaker.Even before Chomsky, since at least the 1930s, the structure of a sentence was thought to consist of a series of phrases, such as noun phrases or verb phrases. In Chomskys early theory, two sorts of rules governed the generation of such structures. Basic structures were given by rewrite rules,procedures that indicate the more basic constituents of structural components. For example,S NP VPindicates that a noun phrase, NP, followed directly by a verb phrase, VP, constitute a sentence, S. NP N indicates that a noun may constitute a noun phrase. Eventually, the application of these rewrite rules stops when every constituent of a structure has been replaced by a syntactic element, a lexical word such as Albert or meows. Transformation rules alter those basic structures in various ways to produce structures corresponding to complex sentences. Importantly, certain transformation rules allowed recursion. This is a concept central to computer science and mathematical logic, by which a rule could be applied to its own output an unlimited number of times (for instance, in mathematics, one can start with 0 and apply the recursive function add 1 repeatedly to yield the natural numbers 0,1,2,3, and so forth.). The presence of recursive rules allows the embedding of structures within other structures, such as placing Albert meows under Leisa thinks to get Leisa thinks Albert meows. This could then be placed under Casey says that to produce Casey says that Leisa thinks Albert meows, and so on. Embedding could be done as many times as desired, so that recursive rules could produce sentences of any length and complexity, an important requirement for a theory of natural language. Recursion has not only remained central to subsequent iterations of Chomskys work but, more recently, has come to be seen as the defining characteristic of human languages.Chomskys interest in rules that could be represented as operations over symbols reflected influence from philosophers inclined towards formal methods, such as Goodman and Quine. This is a central feature of Chomskys work to the present day, even though subsequent developments have also taken psychological realism into account. Some of Chomskys most impactful research from his early career (late 50s and early 60s) was the invention of formal language theory, a branch of mathematics dealing with languages consisting of an alphabet of symbols from which strings could be formed in accordance with a formal grammar, a set of specific rules. The Chomsky Hierarchy provides a method of classifying formal languages according to the complexity of the strings that could be generated by the languages grammar (Chomsky 1956). Chomsky was able to demonstrate that natural human languages could not be produced by the lowest level of grammar on the hierarchy, contrary to many linguistic theories popular at the time. Formal language theory and the Chomsky Hierarchy have continued to have applications both in linguistics and elsewhere, particularly in computer science.b. The Standard ModelChomskys 1965 landmark work, Aspects of the Theory of Syntax, which devoted much space to philosophical foundations, introduced what later became known as the Standard Model. While the theory itself was in many respects an extension of the ideas contained in Syntactic Structures, there was a shift in explanatory goals as Chomsky addressed what he calls Platos Problem, the mystery of how children can learn something as complex as the grammar of a natural language from the sparse evidence they are presented with. The sentences of a human language are infinite in number, and no child ever hears more than a tiny subset of them, yet they master the grammar that allows them to produce every sentence in their language. (Platos Problem is an allusion to Platos Meno, a discussion of similar puzzles surrounding geometry. Section 4.b provides a fuller discussion of the issue as well as more recent developments in Chomskys model of language acquisition.) This led Chomsky, inspired by early modern rationalist philosophers such as Descartes and Leibniz, to postulate innate mechanisms that would guide a child in this process. Every human child was held to be born with a mental system for language acquisition, operating largely subconsciously, preprogrammed to recognize the underlying structure of incoming linguistic signals, identify possible grammars that could generate those structures, and then to select the simplest such grammar. It was never fully worked out how, on this model, possible grammars were to be compared, and this early picture has subsequently been modified, but the idea of language acquisition as relying on innate knowledge remains at the heart of Chomskys work.An important idea introduced in Aspects was the existence of two levels of linguistic structure: deep structure and surface structure. A deep structure contains structural information necessary for interpreting sentence meaning. Transformations on a deep structure moving, deleting, and adding elements in accordance with the grammar of a language yield a surface structure that determines the way that the sentence is pronounced. Chomsky explained (in a 1968 lecture) that,If this approach is correct in general, then a person who knows a specific language has control of a grammar that generates the infinite set of potential deep structures, maps them onto associated surface structures, and determines the semantic and phonetic interpretations of these abstract objects (Chomsky, 2006: 46).Note that, for Chomsky, the deep structure was a grammatical object that contains structural information related to meaning. This is very different from conceiving of a deep structure as a meaning itself, although a theory to that effect, generative semantics, was developed by some of Chomskys colleagues (initiating a debate acrimonious enough to sometimes be referred to as the linguistic wars). The names and exact roles of the two levels would evolve over time, and they were finally dropped altogether in the 1990s (although this is not always noticed, a matter that sometimes confuses the discussion of Chomskys theories).Aspects was also notable for the introduction of the competence/performance distinction, or the distinction between the underlying mental systems that give a speaker mastery of her language (competence) and her actual use of the language (performance), which will seldom fully reflect that mastery. Although these terms have technically been superseded by E-language and I-language (see 4.c), they remain useful concepts in understanding Chomskys ideas, and the vocabulary is still frequently used.c. The Extended Standard ModelThroughout the 1970s, a number of technical changes, aimed at simplification and consolidation, were made to the Standard Model set out in Aspects. These gradually led to what became known as the Extended Standard Model. The grammars of the Standard Model contained dozens of highly specific transformation rules that successively rearranged elements of a deep structure to produce a surface structure. Eventually, a much simpler and more empirically adequate theory was arrived at by postulating only a single operation that moved any element of a structure to any place in that structure. This operation, move , was subject to many constraints that limited its applications and therefore restrained what could be generated. For instance, under certain conditions, parts of a structure form islands that block movement (as when who is blocked from moving from the conjunction in John and who had lunch? to give *Who did John and have lunch?). Importantly, the constraints seemed to be highly consistent across human languages.Grammars were also simplified by cutting out information that seemed to be specified in the vocabulary of a language. For example, some verbs must be followed by nouns, while others must not. Compare I like coffee and She slept to * I like and * She slept a book. Knowing which of these strings are correct is part of knowing the words like and slept, and it seems that a speakers mind contains a sort of lexicon, or dictionary, that encodes this type of information for each word she knows. There is no need for a rule in the grammar to state that some verbs need an object and others do not, which would just be repeating information already in the lexicon. The properties of the lexical items are therefore said to project onto the grammar, constraining and shaping the structures available in a language. Projection remains a key aspect of the theory, so that lexicon and grammar are thought to be tightly integrated.Chomsky has frequently described a language as a mapping from meaning to sound. Around the time of the Extended Standard Model, he introduced a schema whereby grammar forms a bridge between the Phonetic Form, or PF, the form of a sentence that would actually be pronounced, and the Logical Form, or LF, which contained the structural specification of a sentence necessary to determine meaning. To consider an example beloved by introductory logic teachers, Everyone loves someone might mean that each person loves some person (possibly a different person in each case), or it might mean that there is some one person that everyone loves. Although these two sentences have identical PFs, they have different LFs.Linking the idea of LF and PF to that of deep structure and surface structure (now called D-structure and S-structure, and with somewhat altered roles) gives the T-model of language:D-structure|transformations|PF S-Structure LFAs the diagram indicates, the grammar generates the D-structure, which contains the basic structural relations of the sentence. The D-structure undergoes transformations to arrive at the S-structure, which differs from the PF in that it still contains unpronounced traces in places previously occupied by an element that was then moved elsewhere. The S-structure is then interpreted two ways: phonetically as the PF and semantically as the LF. The PF is passed from the language system to the cognitive system responsible for producing actual speech. The LF, which is not a meaning itself but contains structural information needed for semantic interpretation, is passed to the cognitive system responsible for semantics. This idea of syntactic structures and transformations over those structures as mediating between meaning and physical expression has been further developed and simplified, but the basic concept remains an important part of Chomskys theoriesd. Principles and ParametersIn the 1980s, the Extended Standard Model would develop into what is perhaps the best known iteration of Chomskyan linguistics, what was first referred to as Government and Binding, after Chomskys book Lectures on Government and Binding (1981). Chomsky developed these ideas further in Barriers (1986), and the theory took on the more intuitive name Principles and Parameters. The fundamental idea was quite simple. As with previous versions, human beings have in their minds a computational system that generates the syntactic structures linking meanings to sounds. According to Principles and Parameters Theory, all of these systems share certain fixed settings (principles) for their core components, explaining the deep commonalities that Chomsky and his followers see between human languages. Other elements (parameters) are flexible and have values that are set during the language learning process, reflecting the variations observable across different languages. An analogy can be made with an early computer of the sort that was programmed by setting the position of switches on a control panel: the core, unchanging, circuitry of the computer is analogous to principles, the switches to parameters, and the program created by one of the possible arrangements of the switches to a language such as English, Japanese, or Statimcets (although this simple picture captures the essence of early Principles and Parameters, the details are a great deal more complicated, especially considering subsequent developments).Principles are the core aspects of language, including the dependence on underlying structure and lexical projection, features that the theory predicts will be shared by all natural human languages. Parameters are aspects with binary settings that vary from language to language. Among the most widely discussed parameters, which might serve as convenient illustrations, are the Head and Pro-Drop parameters.A head is the key element that gives a phrase its name, such as the noun in a noun phrase. The rest of the phrase is the complement. It can be observed that in English, the head comes before the complement, as in the noun phrase medicine for cats, where the noun medicine is before the complement for cats; in the verb phrase passed her the tea, the verb passed is first, and in the prepositional phrase in his pocket, the preposition in is first. But consider the following Japanese sentence (Cook and Newsom, 1996: 14):(14)Ewakabenikakatteimasu[subject marker]picturewallonhangingis The picture is hanging on the wallNotice that the head of the verb phrase, the verb kakatte imasu, is after its complement, kabe ni, and ni (on) is a postposition that occurs after its complement, kabe. English and Japanese thus represent different settings of a parameter, the Head, or Head Directionality, Parameter. Although this and other parameters are set during a childs development by the language they hear around them, it seems that very little exposure is needed to fix the correct value. It is taken as evidence of this that mistakes with head positioning are vanishingly rare; English speaking children almost never make mistakes like * The picture the wall on is at any point in their development.The Pro-Drop Parameter explains the fact that certain languages can leave the pronoun subjects of a sentence implied, or up to context. For instance, in Italian, a pro-drop language, the following sentences are permitted (Cook and Newsom, 1996: 55).(15)Sonoiltrichecobe (1st-person-present)thewalrusI am the walrus.(16)Epericolosopsorger-sibe (3rd person present)dangerouslean out-(reflexive) It is dangerous to lean out. [a warning posted on trains]On the other hand, the direct English translations * Am the walrus and * Is dangerous to lean out are ungrammatical, reflecting a different parameter setting, non-prodrop, which requires an explicit subject for sentences.A number of other, often complex, differences beyond whether subjects must be included in all sentences were thought to come from the settings of Pro-Drop and the way it interacts with other parameters. For example, it has been observed that many pro-drop languages allow the normal order of subjects and verbs to be inverted; Cade la note is acceptable in Italian, unlike its direct translation in English, * falls the night. However, this feature is not universal among pro-drop languages, and it was theorized that whether it is present or not depends on the settings of other parameters.Examples such as these reflect the general theme of Principles and Parameters, in which rules of the sort that had been postulated in Chomskys previous work are no longer needed. Instead of syntactical rules present in a speakers mental language faculty, the particular grammar of a language was hypothesized to be the result of the complex interaction of principles, the setting of parameters, and the projection properties of lexical items. As a relatively simple example, there is no need for an English-speaking child to learn a bundle of related rules such as noun first in a noun

phrase, verb first in a verb phrase, and so on, or for a Japanese-speaking child to learn the opposite rules for each type of phrase; all of this is covered by the setting of the Head Parameter. As Chomsky (1995: 388) puts it,A language is not, then, a system of rules but a set of specifications for parameters in an invariant system of principles of Universal Grammar. Languages have no rules at all in anything like the traditional sense.This outlook represents an important shift in approach, which is often not fully appreciated by philosophers and other non-specialists. Many scholars assume that Chomsky and his followers still regard languages as particular sets of rules internally represented by speakers, as opposed to principles that are realized without being explicitly represented in the brain.This outlook led many linguists, especially during the last two decades of the 20th century, to hope that the resemblances and differences between individual languages could be neatly explained by parameter settings. Language learning also seemed much less puzzling, since it was now thought to be a matter, not of learning complex sets of rules and constraints, but rather of setting each parameter, of which there were at one time believed to be about twenty, to the correct value for the local language, a process that has been compared to the childrens game of twenty questions. It was even speculated that a table could be established where languages could be arranged by their parameter settings, in analogy to the periodic table on which elements could be placed and their chemical properties predicted by their atomic structures.Unfortunately, as the program developed, things did not prove so simple. Researchers failed to reach a consensus on what parameters there are, what values they can take, and how they interact, and there seemed to be vastly more of them than initially believed. Additionally, parameters often failed to have the explanatory power they were envisioned as having. For example, as discussed above, it was originally claimed that the Pro-Drop parameter explained a large number of differences between languages with opposite settings for that parameter. However, these predictions were made on the basis of an analysis of several related European languages and were not fully borne out when checked against a wider sample. Many linguists now see the parameters themselves as emerging from the interactions of microparameters that explain the differences between closely related dialects of the same language and which are often found in the properties of individual words projecting onto the syntax. There is ongoing debate as to the explanatory value of parameters as they were originally conceived.During the Principles and Parameters era, Chomsky sharpened the notions of competence and performance into the dichotomy of I-languages and E-languages. The former is a state of the language system in the mind of an individual speaker, while the latter, which corresponds to the common notion of a language, is a publicly shared system such as English, French, or Swahili. Chomsky was sharply critical of the study of E-languages, deriding them as poorly defined entities that play no role in the serious study of linguistics a controversial attitude, as E-languages are what many linguists regard as precisely the subject matter of their discipline. This remains an important point in his work and will be discussed more fully in 4.d. below.e. The Minimalist ProgramFrom the beginning, critics have argued that the rule systems Chomsky postulated were too complex to be plausibly grasped by a child learning a language, even if important parts of this knowledge were innate. Initially, the replacement of rules by a limited number of parameters in the Principles and Parameters paradigm seemed to offer a solution, as by this theory, instead of an unwieldy set of rules, the child needed only to grasp the setting of some parameters. But, while it was initially hoped that twenty or so parameters might be identified, the number has increased to the point where, although there is no exact consensus, it is too large to offer much hope of providing a simple explanation of language learning, and microparameters further complicate the picture.The Minimalist Program was initiated in the mid-1990s partially to respond to such criticisms by continuing the trend towards simplicity that had begun with the Extended Standard Theory, with the goal of the greatest possible degree of elegance and parsimony. The minimalist approach is regarded by advocates not as a full theory of syntax but rather as a program of research working towards such a theory, building on the key features of Principles and Parameters.In the Minimalist Program, syntactic structures corresponding to sentences are constructed using a single operation, Merge, that combines a head with a complement, for example, merging Albert with will meow to give Albert will meow. Importantly, Merge is recursive, so that it can be applied over and over to give sentences of any length. For instance, the sentence just discussed can be merged with thinks to give thinks Albert will meow and then again with Leisa to form the sentence Leisa thinks Albert will meow. Instead of elements within a structure moving from one place to another, a structure merges with an element already inside of it and then deletes redundant elements; a question can be formed from Albert will meow by first producing will Albert will meow, and finally will Albert meow? In order to prevent the production of ungrammatical strings, Merge must be constrained in various ways. The main constraints are postulated to be lexical, coming from the syntactic features of the words in a language. These features control which elements can be merged together, which cannot, and when merging is obligatory, for instance, to provide an object for a transitive verb.During the Minimalist Program era, Chomsky has worked on a more specific model for the architecture of the language faculty, which he divides into the Faculty of Language, Broad (FLB) and the Faculty of Language, Narrow (FLN). The FLN is the syntactic computational system that had been the subject of Chomskys work from the beginning, now envisioned as using a single operation, that of recursive Merge. The FLB is postulated to include the FLN, but additionally the perceptual-articulatory system that handles the reception and production of physical messages (spoken or signed words and sentences) and the conceptual-intentional system that handles interpreting the meaning of those messages. In a schema similar to a flattened version of the T-model, the FLN forms a bridge between the other systems of the FLB. Incoming messages are given a structural form by the FLN that is passed to the conceptual-intentional system to be interpreted, and the reverse process allows thoughts to be articulated as speech. The different structural levels, D-structure and S-structure, of the T-model are eliminated in favor of maximal simplicity (the upside-down T is now just a flat). The FLN is held to have a single level on which structures are derived through Merge, and two interfaces connected to the other parts of the FLB.One important implication of this proposed architecture is the special role of recursion. The perceptual-articulatory system and conceptual-intentional system have clear analogs in other species, many of whom can obviously sense and produce signals and, in at least some cases, seem to be able to link meanings to them. Chomsky argues that, in contrast, recursion is uniquely human and that no system of communication among non-human animals allows users to limitlessly combine elements to produce a potential infinity of messages. In many ways, Chomsky is just restating what had been an important part of his theory from the beginning, which is that human language is unique in being productive or capable of expressing an infinity of different meanings, an insight he credits to Descartes. This makes recursion the characteristic aspect of human language that sets it apart from anything else in the natural world, and a central part of what it is to be human.The status of recursion in Chomskys theory has been challenged in various ways, sometimes with the claim that some human language has been observed to be non-recursive (discussed below, in 4.a). That recursion is a uniquely human ability has also been called into question by experiments in which monkeys and corvids were apparently trained in recursive tasks under laboratory conditions. On the other hand, it has also been suggested that if the recursive FLN really does not have any counterpart among non-human species, it is unclear how such a mechanism might have evolved. This last point is only the latest version of a long-running objection that Chomskys ideas are difficult to reconcile with the theory of evolution since he postulates uniquely human traits for which, it is argued by critics, there is no plausible evolutionary history. Chomsky counters that it is not unlikely that the FLN appeared as a single mutation, one that would be selected due to the usefulness of recursion for general thought outside of communication. Providing evolutionary details and exploring the relationship between the language faculty and the physical brain have formed a large part of Chomskys most recent work.The central place of recursion in the Minimalist Program also brought about an interesting change in Chomskys thoughts on hypothetical extraterrestrial languages. During the 1980s, he speculated that alien languages would be unlearnable by human beings since they would not share the same principles as human languages. As such, one could be studied as a natural phenomenon in the way that humans study physics or biology, but it would be impossible for researchers to truly learn the language in the way that field linguists master newly encountered human languages. More recently, however, Chomsky hypothesized that since recursion is apparently the core, universal property of human language and any extraterrestrial language will almost certainly be recursive as well, alien languages may not be that different from our own, after all.4. Language and LanguagesAs a linguist, Chomskys primary concern has always been, of course, language. His study of this phenomenon eventually led him to not only formulate theories that were very much at odds with those held at one time by the majority of linguists and philosophers, but also to have a fundamentally different view about the thing, language, that was being studied and theorized about. Chomskys views have been influential, but many of them remain controversial today. This section discusses some of Chomskys important ideas that will be of interest to philosophers, especially concerning the nature and acquisition of language, as well as meaning and analyticity, topics that are traditionally the central concerns of philosophy of the language.a. Universal GrammarPerhaps the single most salient feature of Chomskys theory is the idea of Universal Grammar (UG). This is the central aspect of language that he argues is shared by all human beings a part of the organization of the mind. Since it is widely assumed that mental features correspond, at some level, to physical features of the brain, UG is ultimately a biological hypothesis that would be part of the genetic inheritance that all humans are born with.In terms of Principles and Parameters Theory, UG consists of the principles common to all languages and which will not change as the speaker matures. UG also consists of parameters, but the values of the parameters are not part of UG. Instead, parameters may change from their initial setting as a child grows up, based on the language she hears spoken around her. For instance, an English-speaking child will learn that every sentence must have a subject, setting her Pro-Drop parameter to a certain value, the opposite of the value it would take for a Spanish-speaking child. While the Pro-Drop parameter is a part of UG, this particular setting of the parameter is a part of English and other languages where the subject must be overtly included in the sentence. All of the differences between human languages are then differences in vocabulary and in the settings of parameters, but they are all organized around a common core given by UG.Chomsky has frequently stated that the important aspects of human languages are set by UG. From a sufficiently detached viewpoint, for instance, that of a hypothetical Martian linguist, there would only be minor regional variations of a single language spoken by all human beings. Further, the variations between languages are predictable from the architecture of UG and can only occur within narrowly constrained limits set by that structure. This was a dramatic departure from the assumption, largely unquestioned until the mid-20th century, that languages can vary virtually without limit and in unpredictable ways. This part of Chomskys theory has remained controversial, with some authorities on crosslinguistic work, such as the British psycholinguist Stephen Levinson (2016), arguing that it discounts real and important differences among languages. Other linguists argue the exact contrary: that data from the study of languages worldwide backs Chomskys claims. Because the debate ultimately concerns invisible mental features of human beings and how they relate to unpronounced linguistic structures, the interpretation of the evidence is not straightforward, and both sides claim that the available empirical data supports their position.The theory of UG is an important aspect of Chomskys ideas for many reasons, among which is that it clearly sets his theories apart as different from paradigms that had previously been dominant in linguistics. This is because UG is not a theory about behavior or how people use language, but instead about the internal composition of the human mind. Indeed, for Chomsky and others working within the framework of his ideas, language is not something that is spoken, signed, or written but instead exists inside of us. What many people think of as language externalized acts of communication are merely products of that internal mental faculty. This in turn has further implications for theories of language acquisition (see 4.b) and how different languages should be identified (4.c).An important implication of UG is that it makes Chomskys theories empirically testable. A common criticism of his work is that because it abstracts away from the study of actual language use to seek underlying idealized patterns, no evidence can ever count against it. Instead, apparent counterexamples can always be dismissed as artifacts of performance rather than the competence that Chomsky was concerned with. If correct, this would be problematic since it is widely agreed that a good scientific theory should be testable in some way. However, this criticism is often based on misunderstandings. A linguist dismissing an apparent failure of the theory as due to performance would need to provide evidence that performance factors really are involved, rather than a problem with the underlying theory of competence. Further, if a language was discovered to be organized around principles that contravened those of UG, then many of the core aspects of Chomskys theories would be falsified. Although candidate languages have been proposed, all of them are highly controversial, and none is anything close to universally accepted as falsifying UG.In order to count as a counterexample to UG, a language must actually breach one of its principles; it is not enough that a principle merely not be displayed. As an example, one of the principles is what is known as structure dependence: when an element of a linguistic structure is moved to derive a different structure, that movement depends on the structure and its organization into phrases. For instance, to arrive at the correct question form of The cat who is on the desk is hungry; it is the is in the main clause, the one before hungry, that is moved to the front of the sentence, not the one in the relative clause (between who and on). However, in some languages, for instance Japanese, elements are not moved to form questions; instead, a question marker (ka) is added at the end of the sentence. This does not make Japanese a counterexample to the UG principle that movement is always structurally dependent. The Japanese simply do not exercise this principle when forming questions, but neither is the principle violated. A counterexample to UG would be a language that moved elements but did so in a way that did not depend on structure, for instance, by always moving the third word to the front or inverting the word order to form a question.A case that generated a great deal of recent controversy has been the claim that Pirah, a language with a few hundred speakers in the Brazilian rain forest, lacks recursion (Everett 2005). This has been frequently presented as falsifying UG, since recursion is the most important principle, indeed the identifying feature, of human language, according to the Minimalist Program. This alleged counterexample received widespread and often incautious coverage in the popular press, at times being compared to the discovery of evidence that would disprove the theory of relativity.This assertion that Pirah has no recursion has itself been frequently challenged, and the status of this claim is unclear. But there is also a lack of agreement on whether, if true, this claim would invalidate UG or whether it would just be a case similar to the one discussed above, the absence of movement in Japanese when forming questions, where a principle is not being exercised. Proponents of Chomskys ideas counter that UG is a theory of mental organization and underlying competence, a competence that may or may not be put fully to use. The fact that the Pirah are capable of learning Portuguese (the majority language in Brazil) shows that they have the same UG present in their minds as anyone else. Chomsky points out that there are numerous cases of human beings choosing not to exercise some sort of biological capacity that they have. Chomskys own example is that although humans are biologically capable of swimming, many would drown if placed in water. It has been suggested by sympathetic scholars that this example is not particularly felicitous, as swimming is not an instinctive behavior for humans, and a better example might be monks who are sworn to celibacy. Debate has continued concerning this case, with some still arguing that if a language without recursion would not be accepted as evidence against UG, it is difficult to imagine what can.b. Platos Problem and Language AcquisitionOne of Chomskys major goals has always been to explain the way in which human children learn language. Since he sees language as a type of knowledge, it is important to understand how that knowledge is acquired. It seems inexplicable that children acquire something as complex as the grammar and vocabulary of a language, let alone the speed and accuracy with which they do so, at an age when they cannot yet learn how to tie their shoes or do basic arithmetic. The mystery is deepened by the difficulty that adults, who are usually much better learners than small children, have with acquiring a second language.Chomsky addressed this puzzle in Aspects of the Theory of Syntax (1965), where he called it Platos Problem. This name is a reference to Platos Meno, a dialog in which Socrates guides a young boy, without a formal education, into producing a fairly complex geometric proof, apparently from the childs own mental resources. Considering the difficult question of where this apparent knowledge of geometry came from, Plato, speaking through Socrates, concludes that it must have been present in the child already, although dormant until the right conditions were presented for it to be awakened. Chomsky would endorse largely the same explanation for language acquisition. He also cites Leibniz and Descartes as holding similar views concerning important areas of knowledge.Chomskys theories regarding language acquisition are largely motivated by what has become known as the Poverty of the Stimulus Argument, the observation that the information about their native language that children are exposed to seems inadequate to explain the linguistic knowledge that they arrive at. Children only ever hear a small subset of the sentences that they can produce or understand. Furthermore, the language that they do hear is often corrupt in some way, such as the incomplete sentences frequently used in casual exchanges. Yet on this basis, children somehow master the complex grammars of their native languages.Chomsky pointed out that the Poverty of the Stimulus makes it difficult to maintain that language is learned through the same general-purpose learning mechanisms that allow a human being to learn about other aspects of the world. There are many other factors that he and his followers cite to underline this point. All developmentally normal children worldwide are able to speak their native languages at roughly the same age, despite vast differences in their cultural and material circumstances or the educational levels of their families. Indeed, language learning seems to be independent of the childs own cognitive abilities, as children with high IQs do not learn the grammar of their language faster, on average, than others. There is a notable lack of explicit instruction; analyses of speech corpora show that adult correction of childrens grammar is rare, and it is usually ineffective when it does occur. Considering these factors together, it seems that the way in which human children acquire language requires an explanation in a way that learning, say, table manners or putting shoes on do not.The solution to this puzzle is, according to Chomsky, that language is not learned through experience but innate. Children are born with Universal Grammar already in them, so the principles of language are present from birth. What remains is merely learning the particularities of the childs native language. Because language is a part of the human mind, a part that each human being is born with, a child learning her native language is just undergoing the process of shaping that part of her mind into a particular form. In terms of the Principles and Parameters Theory, language learning is setting the value of the parameters. Although subsequent research has shown that things are more complicated than the simple setting of switches, the basic picture remains a part of Chomskys theory. The core principles of UG remain unchanged as the child grows, while peripheral elements are more plastic and are shaped by the linguistic environment of the child.Chomsky has sometimes put the innateness of language in very strong terms and has stated that it is misleading to call language acquisition language learning. The language system of the mind is a mental organ, and its development is similar, Chomsky argues, to the growth of bodily organs such as the heart or lungs, an automatic process that is complete at some point in a childs development. The language system also stabilizes at a certain point, after which changes will be relatively minor, such as the addition of new words to a speakers vocabulary. Even many of those who are firm adherents to Chomskys theories regard such statements as incautious. It is sometimes pointed out that while the growth of organs does not require having any particular experiences, proper language development requires being exposed to language within a certain critical period in early childhood. This requirement is evidenced by tragic cases of severely neglected children who were denied the needed input and, as a result, never learned to speak with full proficiency.It has also been pointed out that even the rationalist philosophers whom Chomsky frequently cites did not seem to view innate and learned as mutually exclusive. Leibniz (1704), for instance, stated that arithmetical knowledge is in us but still learned, drawn out by demonstration and testing on examples. It has been suggested that some such view is necessary to explain language acquisition. Since humans are not born able to speak in the way that, for example, a horse is able to run within hours of birth, some learning seems to be involved, but those sympathetic to Chomsky regard the Poverty of the Stimulus as ruling out simply acquiring language completely from external sources. According to this view, we are born with language inside of us, but the proper experiences are required to draw that knowledge out and make it available.The idea of innate language is not universally accepted. The behaviorist theory that language learning is a result of social conditioning, or training, is no longer considered viable. But it is a widely held view that general statistical learning mechanisms, the same mechanisms by which a child learns about other aspects of the world and human society, are responsible for language learning, with only the most general features of language being innate. These sorts of theories tend to have the most traction in schools of linguistic thought that reject the idea of Universal Grammar, maintaining that no deep commonalities hold across human languages. On such a view, there is little about language that can be said to be shared by all humans and therefore innate, so language would have to be acquired by children in the same way as other local customs. Advocates of Chomskys views counter that such theories cannot be upheld given the complexity of grammar and the Poverty of the Stimulus, and that the very fact that language acquisition occurs given these considerations is evidence for Universal Grammar. The degree to which language is innate remains a highly contested issue in both philosophy and science.Although the application of statistical learning mechanisms to machine learning programs, such as OpenAIs ChatGPT, has proven incredibly successful, Chomsky points out that the architecture of such programs is very different from that of the human mind: A childs operating system is completely different from that of a machine learning program (Chomsky, Roberts, and Watumull, 2023). This difference, Chomskyans maintain, precludes drawing conclusions about the use or acquisition of language by humans on the basis of studying these models.c. I vs. E languagesPerhaps the way in which Chomskys theories differ most sharply from those of other linguists and philosophers is in his understanding of what language is and how a language is to be identified. Almost from the beginning, he has been careful to distinguish speaker performance from underlying linguistic competence, which is the target of his inquiry. During the 1980s, this methodological point would be further developed into the I-language/E-language distinction.A common concept of what an individual language is, explicitly endorsed by philosophers such as David Lewis (1969), Michael Dummett (1986), and Michael Devitt (2022), is a system of conventions shared between speakers to allow coordination. Therefore, language is a public entity used for communication. It is something like this that most linguists and philosophers of language have in mind when they talk about English or Hindi. Chomsky calls this concept of language E-language, where the E stands for external and extensional. What is meant by extensional is somewhat technical and will be discussed later in this subsection. External refers to the idea just discussed, where language is a public system that exists externally to any of its speakers. Chomsky points out that such a notion is inherently vague, and it is difficult to point to any criteria of identity that would allow one to draw firm boundaries that could be used to tell one such language apart from another. It has been observed that people living near border areas often cannot be neatly categorized as speaking one language or the other; Germans living near the Dutch border are comprehensible to the nearby Dutch but not to many Germans from the southern part of Germany. Based on the position of the border, we say that they are speaking German rather than Dutch or some other E-language, but a border is a political entity with negligible linguistic significance. Chomsky (1997: 7) also called attention to what he calls semi-grammatical sentences, such as the string of words.(17) *The child seems sleeping. Although (17) is clearly ill-formed, most English speakers will be able to assign some meaning to it. Given these conflicting facts, there seems to be no answer to whether (17) or similar strings are part of English.Based on considerations like those just mentioned, Chomsky derides E-languages as indistinct entities that are of no interest to linguistic science. The real concept of interest is that of an I-language, where the I refers to intensional and internal. Intensional is in opposition to extensional, and will be discussed in a moment. Internal means contained in the mind of some individual human being. Chomsky defines language as a computational system contained in an individual mind, one that produces syntactic structures that are passed to the mental systems responsible for articulation and interpretation. A particular state of such a system, shaped by the linguistic environment it is exposed to, constitutes an I-language. Because all I-languages contain Universal Grammar, they will all resemble each other in their core aspects, and because more peripheral parts of language are set by the input received, the I-language of two members of the same linguistic community will resemble one another more closely. For Chomsky, for whom the study of language is ultimately the study of the mind, it is the I-language that is the proper topic of concern for linguists. When Chomsky speaks of English or Swahili, this is to be understood as shorthand for a cluster of characteristics that are typically displayed by the I-languages of people in a particular linguistic community.This rejection of external languages as worthy of study is closely related to another point where Chomsky goes against a widely held belief in the philosophy of language, as he does not accept the common hypothesis that language is primarily a means of communication. The idea of external languages is largely motivated by the widespread theory that language is a means for interpersonal communication, something that evolved so that humans could come together, coordinate to solve problems, and share ideas. Chomsky responds that language serves many uses, including to speak silently to oneself for mental clarity, to aid in memorization, to solve problems, to plan, or to conduct other activities that are entirely internal to the individual, in addition to communication. There is no reason to emphasize one of these purposes over any other. Communication is one purpose of languagean important one, to be surebut it is not the purpose.Besides the internal/external dichotomy, there is the intensional/extensional distinction, referring to two different ways that sets might be specified. The extension of a set is what elements are in that set, while the intension is how the set is defined and the members are divided from non-members. For instance, the set {1, 2, 3} has as its extension the numbers 1, 2, and 3. The intension of the same set might be the first three positive integers, or the square roots of 1, 4, and 9, or the first three divisors of 6; indeed, an infinite number of intensions might generate the same set extension.Applying this concept to languages, a language might be defined extensionally in terms of the sentences of the language or intentionally in terms of the grammar that generates all of those sentences but no others. While Chomsky favors the second approach, he attributes the first to two virtually opposite traditions. Structuralist linguists, who place great value on studying corpora, and other linguists and philosophers who focus on the actual use of language define a language in terms of the sentences attested in corpora and those that fit similar patterns. A very different tradition consists of philosophers of language who are known as Platonists, and who are exemplified by Jerrold Katz (1981, 1985) and Scott Soames (1984), former disciples of Chomsky. On this view, every possible language is a mathematical object, a set of possible sentences that really exist in the same abstract sense that sets of numbers do. Some of these sets happen to be the languages that humans speak.Both of these extensional approaches are rejected by Chomsky, who maintains that language is an aspect of the human mind, so what is of interest is the organization of that part of the mind, the I-language. This is an intensional approach, since a particular I-language will constitute a grammar that will produce a certain set of sentences. Chomsky argues that both extensional approaches, the mathematical and the usage-based, are insufficiently focused on the mental to be of explanatory value. If a language is an abstract mathematical object, a set of sentences, it is unclear how humans are supposed to acquire knowledge of such a thing or to use it. The usage-based approach, as a theory of behavior, is insufficiently explanatory because any real explanation of how language is acquired and used must be in mental terms, which means looking at the organization of the underlying I-language.While many who study language accept the concept of the I-language and agree with its importance, Chomskys complete dismissal of E-languages as worthy of study has not been widely endorsed. E-languages, even if they are ultimately fiction, seem to be a necessary fiction for disciplines such as sociolinguistics or for the historical analysis of how languages have evolved over time. Further, having vague criteria of identity does not automatically disqualify a class of entities from being used in science. For example, the idea of species is open to many of the same criticisms concerning vagueness that Chomsky directs at E-languages, and its status as a real category has been debated, but the concept often plays a useful role in biology.d. Meaning and AnalyticityIt might be said that the main concern of the philosophy of language is the question of meaning. How is it that language corresponds to, and allows us to communicate about, states of affairs in the world or to describe possible states of affairs? A related question is whether there are such things as analytic truths, that is, sentences that are (as they were often traditionally characterized) necessarily true by virtue of meaning alone. It might seem like anyone who understands all the words in:(18) If Albert is a cat, then Albert is an animal. knows that it has to be true, just in virtue of knowing what it means. Appeals to such knowledge were frequently the basis for explaining our apparent a priori knowledge of logic and mathematics and for what came to be known as analytic philosophy in the 20th century. But the exact nature and scope of this sort of truth and knowledge are surprisingly hard to clarify, and many philosophers, notably Quine (1953) and Fodor (1998), argue that allegedly analytic statements are no different from any other belief that is widely held, such as:(19) The world is more than a day old.On this outlook, not only are apparently analytic truths open to revision just like any other belief, but the entire idea of determinate meanings becomes questionable.As mentioned earlier, Chomskys focus has been not on meaning but instead on syntax, the grammatical rules that govern the production of well-formed sentences, considered largely independent of their meanings. Much of the critical data for his program has consisted of unacceptable sentences, the WhyNots, such as:(20) * Shes as likely as hes to get ill. (Rey 2022)Sentences like (20), or (1)-(6) in 2.c above, are problematic, not because they have no meaning or have an anomalous meaning in some way, but because of often subtle issues under the surface concerning the syntactic structure of the sentence. Chomsky frequently argued that syntax is independent of meaning, and a theory of language should be able to explain the syntactic data without entering into questions of meaning. This idea, sometimes called the autonomy of syntax, is supported by, among other evidence, considering sentences such as:(21) Colorless green ideas sleep furiously. (Chomsky 1965: 149)which makes no sense if understood literally but is immediately recognizable as a grammatical sentence in English. Whether syntax is entirely independent of meaning and use has proven somewhat contentious, with some arguing that, on the contrary, questions of grammaticality cannot be separated from pragmatic and semantic issues. However, the distinction fits well with Chomskys conception of I-language, an internal computational device that produces syntactic structures that are then passed to other mental systems. These include the conceptual-intentional system responsible for assigning meaning to the structures, a system that interfaces with the language faculty but is not itself part of that faculty, strictly speaking.Despite his focus on syntax, Chomsky does frequently discuss questions of meaning, at least from 1965 on. Chomsky regards the words (and other lexical items, such as prefixes and suffixes) that a speaker has stored in her lexicon as bundles of semantic, syntactic, and phonetic features, indicating information about meaning, grammatical role, and pronunciation. Some features that Chomsky classifies as syntactic may seem to be more related to meaning, such as being abstract. Folding these features into syntax seemed to be supported by the observation that, for example,(22) * A very running person passed us.is anomalous because very requires an abstract complement in such a context (a very interesting person is fine). In Aspects of the Theory of Syntax (1965), he also introduced the notion of selectional rules that identify sentences such as:(23) Golf plays John (1965: 149)as deviant. A particularly interesting example is:(24) Both of Johns parents are married to aunts of mine. (1965: 77)In 1965, (24) might have seemed to be analytically false, but in the 21st century, such a sentence may very well be true!One popular theory of semantics is that the meaning of a sentence consists of its truth conditions, that is, the state of affairs that would make the sentence true. This idea, associated with the philosopher of language Donald Davidson (1967), might be said to be almost an orthodoxy in the study of semantics, and it certainly has an intuitive appeal. To know what The cat is on the mat means is to know that this sentence is true if and only if the cat is indeed on the mat. Starting in the late 1990s, Chomsky would challenge this picture of meaning as an oversimplification of the way that language works.According to Chomskys view, also developed by Paul Pietroski (2005), among others, the sentences of a language do not, themselves, have truth conditions. Instead, sentences are tools that might be used, among other things, to make statements that have truth values relative to their context of use. Support for this position is drawn from the phenomenon of polysemy, where the same word might be used with different truth-conditional roles within a single sentence, such as in:(25) The bank was destroyed by the fire and so moved across the street. (Chomsky 2000: 180)where the word bank is used to refer to both a building and a financial institution. There is also open texture, a phenomenon by which the meaning of a word might be extended in multiple ways, many of which might have once been impossible to foresee (Waismann 1945). An oft-cited example is mother: in modern times, unlike in the past, it is possible that two women, the woman who produces the ovum and the woman who carries the fetus, may both be called mothers of the child. One might also consider the way that a computer, at one time a human being engaged in performing computations, was easily extended to cover electronic machines that are sometimes said to think, something that was also at one time reserved for humans.Considering these phenomena, it seems that the traditional idea of words as having fixed meanings might be better replaced by the idea of words as filters or lenses, providing ways of looking at things and thinking about the products of our minds (Chomsky 2000, 36), or, as Pietroski (2005) puts it, as pointers in conceptual space. A speaker uses the structures made available by her I-language in order to arrange these pointers in such a way as to convey information, producing statements that might be assigned truth values given the context. But a speaker is hardly constrained to her I-language, which might be supplemented by resources such as gestures, common knowledge, shared cultural background, or sensibility to the listeners psychology and ability to fill in gaps. Consider a speaker nodding towards a picture of the Eiffel Tower and saying been there; to the right audience, under the right circumstances, this is a perfectly clear statement with a determinate truth value, even though the I-language, which produces structures corresponding to grammatical sentences, has been overridden in the interests of efficiency.It has been suggested (Rey 2022) that this outlook on meaning offers a solution to the question of whether there are sentences that are analytically true and that are distinct from merely strongly held beliefs. Sentences such as If Albert is a cat, he is an animal may be analytic in the sense that, in the lexicon accessed by the I-language, [animal] is a feature of cat (as argued by Katz 1990). On the other hand, the I-language might be overruled in the face of future evidence, such as discovering that cats are really robots from another planet (as Putnam 1962 imagined). These two apparently opposing facts can be accommodated by the open texture of the word cat, which might come to be used in cases where it does not, at present, apply.Chomsky, throughout his long career, seems to have frequently vacillated concerning the existence of analytic truths. Early on, as in Aspects (1965), he endorses analyticity, citing sentence 24 and similar examples. At other times, he seems to echo Quine, at one point (1975), stating that the study of meaning cannot be dissociated from systems of belief. More recently (1997) he explicitly allows for analytic truths, arguing that necessary connections occur between the concepts denoted by the lexicons of human languages. For example, If John persuaded Bill to go to college, then Bill at some point decided or intended to go to college this is a truth of meaning (1997: 30). This is to say that it is an analytic truth based on a relation that obtains between the concepts persuade and intend. Ultimately, though, Chomsky regards analyticity as an empirical issue, not one to be settled by considering philosophical intuitions but rather through careful investigation of language acquisition, crosslinguistic comparison, and the relation of language to other cognitive systems, among other evidence. Currently, he holds that allowing for analytic truths based on relations between concepts seems more promising than alternative proposals, but this is an empirical question to be resolved through science.Finally, mention should be made of the way that Chomsky connects considerations of meaning with Platos Problem, the question of how small children manage to do something as difficult as learning language. Chomsky notes that the acquisition of vocabulary poses this problem in a very sharp form (1997: 29). During the peak periods of language learning, children learn several words a day, often after hearing them a single time. Chomsky accounts for this rapid acquisition in the same way as the acquisition of grammar: what is being learned must already be in the child. The concepts themselves are innate, and what a child is doing is simply learning what sounds people in the local community use to label concepts she already possesses. Chomsky acknowledges that this idea has been criticized. Hilary Putnam (1988), for example, asks how evolution could have possibly had the foresight to equip humans with a concept such as carburetor. Chomskys response is simply that this certainly seems surprising, but that the empirical facts appear to leave open a few other possibilities (1997: 26). Conceptual relations, like those mentioned above between persuades and intends, or between chase and follow with the intent of staying on ones path, are, Chomsky asserts, grasped by children on the basis of virtually no evidence. He concludes that this indicates that children approach language learning with an intuitive understanding of important concepts, such as intending, causing something to happen, having a goal, and so on.Chomsky suggests a parallel to his theory of lexical acquisition in the Nobel Prize-winning work of the immunologist Niels Jerne. The number of antigens (substances that trigger the production of antibodies) in the world is so enormous, including man-made toxins, that it may seem absurd to propose that immune systems would have evolved to have an innate supply of specific antibodies. However, Jernes work upheld the theory that an animal could not be stimulated to make an antibody in response to a specific antigen unless it had already produced such an antibody before encountering the antigen. In fact, Jernes (1985) Nobel speech was entitled The Generative Grammar of the Immune System.Chomskys theories of innate concepts fit with those of some philosophers, such as Jerry Fodor (1975). On the other hand, this approach has been challenged by other philosophers and by linguists such as Stephen Levinson and Nicholas Evans (2009), who argue that the concepts labeled by words in one language very seldom map neatly onto the vocabulary of another. This is sometimes true even of very basic terms, such as the English preposition in, which has no exact counterpart in, for example, Korean or Tzeltal, languages that instead have a range of words that more specifically identify the relation between the contained object and the container. This kind of evidence is understood by some linguists to cast doubt on the idea that childhood language acquisition is a matter of acquiring labels for preexisting universal concepts.e. Kripkenstein and Rule FollowingThis subsection introduces the Wittgensteinian Problem, one of the most famous philosophical objections to Chomskys notion of an underlying linguistic competence. Chomsky himself stated that out of the various criticisms his theory had received over the years, this seems to me to be the most interesting (1986: 223). Inspired by Ludwig Wittgensteins cryptic statement that no course of action could be determined by a rule, because every course of action could be made out to accord with the rule (1953: 201), Saul Kripke (1982) developed a line of argument that entailed a deep skepticism about the nature of rule-following activities, including the use of language. Kripke is frequently regarded as having gone beyond what Wittgenstein might have intended, so his argument is often attributed to a composite figure, Kripkes Wittgenstein or Kripkenstein. A full treatment of this fascinating, but lengthy and complex, argument is beyond the scope of this article (the interested reader might consult the article Kripkes Wittgenstein. It can be summarized as asserting that, in a case where a person seems to be following a rule, there are no facts about her that determine which rule she is actually following. To take Kripkes example, if someone seems to be adding numbers in accordance with the normal rules of addition but then gives a deviant answer, say 68 + 57 = 5, there is no way to establish that she was not actually performing an operation called quaddition instead, which is like addition except that it gives an answer of 5 for any equation involving numbers larger than 57. Kripke claims that any evidence, including her own introspection, that she was performing addition and made a bizarre mistake is equally compatible with the hypothesis that she was performing quaddition. Ultimately, he concludes, there is no way to settle such questions, even in theory; there is simply no fact of the matter about what rule is being followed.The relevance of Kripkes argument to Chomskys linguistic theory is that this directly confronts his notion of language as an internalized system of rules (or, in later iterations, a system of principles and parameters that gives rise to rules that are not themselves represented). According to Chomskys theory, a grammatical error is explained as a performance issue, for example, a mistake brought on by inattention or distraction that causes a deviation from the system of rules in the mind of the speaker. According to Kripke, calling this a deviation from those rules, rather than an indication that different rules (or no rules) are being followed, is like trying to decide the question of addition vs. quaddition. Kripke asserted that there is no fact of the matter in the linguistic case, either, any more than in the example of addition and quaddition. Therefore, it would seem that the use of the ideas of rules and competence in linguistics needs serious reconsideration (1982: 31).An essential part of Chomskys response to Kripkes criticism was that the question of what is going on inside a speaker is no different in principle than any other question investigated by the sciences. Given a language user, say Jones, We then try to construct a complete theory, the best one we can, of relevant aspects of how Jones is constructed (1986: 237). Such a theory would involve specifying that Jones incorporates a particular language, consisting of fixed principles and the setting of parameters, and that he follows the rules that would emerge from the interactions of these factors. Any particular theory like this could be proven wrong Chomsky notes, This has frequently been the case and, therefore, such a theory is an empirically testable one that can be found to be correct or incorrect. That is, given a theory of the speakers underlying linguistic competence, whether she is making a mistake or the theory is wrong is surely as ascertainable as any other fact about a complex system (Rey 2020: 125). What would be required is an acceptable explanation of why a mistake was made. The issues here are very similar to those surrounding Chomskys adaptation of the Galilean Method (see 2.b above) and the testability, or lack thereof, of his theories in general (see 4.a).5. Cognitive Science and Philosophy of MindBecause Chomsky regards language as a part of the human mind, his work has inevitably overlapped with both cognitive science and philosophy of mind. Although Chomsky has not ventured far into general questions about mental architecture outside of the areas concerned with language, his impact has been enormous, especially concerning methodology. Prior to Chomsky, the dominant paradigm in both philosophy and cognitive science was behaviorism, the idea that only external behavior could be legitimately studied and that the mind was a scientifically dubious entity. In extreme cases, most notably Quine (1960), the mind was regarded as a fiction best dropped from serious philosophy. Chomsky began receiving widespread notice in the 1950s for challenging this orthodoxy, arguing that it was a totally inadequate framework for the study of language (see 2.a, above), and he is widely held to have dramatically altered the scientific landscape by reintroducing the mind as a legitimate object of study.Chomsky has remained committed throughout his career to the view that the mind is an important target of inquiry. He cautions against what he calls methodological dualism (2000: 135), the view that the study of the human mind must somehow proceed differently than the study of other natural phenomena. Although Chomsky says that few contemporary philosophers or scientists would overtly admit to following such a principle, he suggests that in practice it is widespread.Chomsky postulates that the human mind contains a language faculty, or module, a biological computer that operates largely independently of other mental systems to produce and parse linguistic structures. This theory is supported by the fact that we, as language users, apparently systematically perform highly complex operations, largely subconsciously, in order to derive appropriate structures that can be used to think and communicate our thoughts and to parse incoming structures underlying messages from other language users. These activities point to the presence of a mental computational device that carries them out. This has been interpreted by some as strong evidence for the computational theory of mind, essentially the idea that the entire mind is a biological computer. Chomsky himself cautions against such a conclusion, stating that the extension from the language module to the whole mind is as of yet unwarranted.In his work over the last two decades, Chomsky has dealt more with questions of how the language faculty relates to the mind more broadly, as well as the physical brain, questions that he had previously not addressed extensively. Most recently, he proposed a scheme by which the language faculty, narrowly defined, or FLN, consists only of a computational device responsible for constructing syntactic structures. This device provides a bridge between the two other systems that constitute the language faculty more broadly, one of which is responsible for providing conceptual interpretations for the structures of the FLN, the other for physical expression and reception. Thus, while, in this view, the actual language faculty plays a narrow role, it is a critical one that allows the communication of concepts. The FLN itself works with a single operation, merge, which combines two elements. This operation is recursive, allowing elements to be merged repeatedly. He suggests that the FLN, which is the only part of the system unique to humans, evolved due to the usefulness of recursion not only for communication but also for planning, navigation, and other types of complex thought. Because the FLN is thought to have no analog among other species, recursion is theorized to be an important characteristic of human thought, which gives it its unique nature.While the FLN interfaces with other mental systems, passing syntactic structures between them, the system itself is postulated to carry out its operations in isolation. This follows from Chomskys view of syntax as largely autonomous from questions of meaning and also from the way that linguistic knowledge seems to be specialized and independent of our general knowledge about the world. For instance, we can recognize a sentence such as:(26) On later engines, fully floating gudgeon pins are fitted (Cook and Newsom 1998: 83).as well-formed, despite the fact that most readers will not know what it means. This concept of a specialized language faculty, which has been a constant in Chomskys work almost from the start, represents a substantive commitment to the modularity of mind, a thesis that the mind consists, at least in part, of specialized and autonomous systems. There is debate among cognitive scientists and in the philosophy of psychology regarding the degree to which this picture is accurate, as opposed to the idea that mental processes result from the interaction of general faculties, such as memory and perception, which are not domain-specific in the way of the hypothesized language faculty.It should be emphasized that the language faculty Chomsky hypothesizes is mental, not a specific physical organ in the brain, unlike, for example, the hippocampus. Asking where it is in the brain is something like asking where a certain program is in a computer; both emerge from the functioning of many physical processes that may be scattered in different locations throughout the entire physical device. At the same time, although Chomskys theory concerns mental systems and their operations, this is intended as a description, at a high level of abstraction, of computational processes instantiated in the physical brain. Opponents of Chomskys ideas frequently point out that there has been little progress in actually mapping these mental systems onto the brain. Chomsky acknowledges that we do not really know how [language] is actually implemented in neural circuitry (Berwick and Chomsky 2017: 157). However, he also holds that this is entirely unsurprising, given that neuroscience, like linguistics, is as of yet in its infancy as a serious science. Even in much simpler cases, such as insect navigation, where researchers carry out experiments and genetic manipulations that cannot be performed on humans, we still do not know in detail how that computation is implemented (2017: 157).In his most recent publications, Chomsky has worked towards unifying his theories of language and mind with neuroscience and theories of the physical brain. He has at times expressed pessimism about the possibility of fully unifying these fields, which would require explaining linguistic and psychological phenomena completely in terms of physical events and structures in the brain, While he holds that this may be possible at some point in the distant future, it may require a fundamental conceptual shift in neuroscience. He cautions that it is also possible that such a unification may never be completely possible. Chomsky points to Descartes discussion of the creative nature of human thought and language, which is the observation that in ordinary circumstances the use of these abilities is innovative without bounds, appropriate to circumstances but not caused by them (Chomsky 2014: 1), as well as our apparent possession of free will. Chomsky suggests that it is possible that such phenomena may be beyond our inherent cognitive limitations and impossible for us to ever fully understand.6. References and Further Readinga. Primary SourcesChomsky has been a highly prolific author who has written dozens of books explaining and promoting his theories. Although almost all of them are of great interest to anyone interested in language and mind, including philosophers, they vary greatly in the degree to which they are accessible to non-specialists. The following is a short list of some of the relatively non-technical works of philosophical importance:Chomsky, N. 1956. Three Models for the Description of Language. IRE Transactions on Language Theory. 2(3) pages 113 124.The earliest presentation of the Chomsky Hierarchy.Chomsky, N. 1957. Syntactic Structures. The Hague: Mouton and Company.Chomsky, N. 1959. A Review of B.F. Skinners Verbal Behavior. Language 35(1): 2658.Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge, MA: MIT Press.While many of the exact proposals about syntax are dated, this contains what is still one of the best summaries of Chomskys ideas concerning language acquisition and the connections he sees between his program and the work of the early modern rationalist philosophers.Chomsky, N. 1968. Quines Empirical Assumptions. Synthese, 19 (1/2): 53 68.A critique of Quines philosophical objections.Chomsky, N. 1975. The Logical Structure of Linguistic Theory. Berlin: Springer.The earliest statement of Chomskys theory, now somewhat outdated, originally circulated as a typescript in 1956.Chomsky, N. 1981. Lectures on Government and Binding. The Hague: Mouton.Chomsky, N. 1986. Barriers. Boston: The MIT Press.Chomsky, N. 1986. Knowledge of Language: its Nature, Origin and Use. Westport, CN: Praeger.Contains Chomskys response to Kripkenstein, as well as the first discussion of languages.Chomsky, N. 1988. Language and Problems of Knowledge: The Managua Lectures. Cambridge, MA: MIT Press.A series of lectures for a popular audience that introduces Chomskys linguistic work.Chomsky, N. 1995. The Minimalist Program. Boston: MIT Press.Chomsky, N. 1997. Language and Problems of Knowledge. Teorema. (16)2: 5 33.This is probably the best short introduction to Chomskys ideas on the nature and acquisition of language, especially the E-language/I-language distinction.Chomsky, N. 2000. New Horizons in the Study of Language and Mind. Cambridge: Cambridge University Press.It is philosophically interesting in that it contains a significant discussion of Chomskys views on contemporary trends in the philosophy of language, particularly his rejection of externalist theories of meaning.Hauser, M.; Chomsky, N.; Fitch, T. 2002. The Faculty of Language: What Is It, Who Has It, and How Did It Evolve. Science. 198: 1569 1579.A good summary of directions in generative linguistics, including proposals about the structure of the language faculty in terms of FLN/FLB.Chomsky, N. 2006. Language and Mind. Cambridge: Cambridge University Press.Also contains valuable historical context.Chomsky, N. 2014. Science, Mind and Limits of Understanding. The Science and Faith Foundation, . The Vatican.Berwick, R. and Chomsky, N. 2016. Why Only Us: Language and Evolution. Boston: MIT Press.It is valuable as a non-technical look at the current state of Chomskys theories as well as a discussion of the evolutionary development of language.Keating, B. 2020. Noam Chomsky: Is it Possible to Communicate with Extraterrestrials. YouTube. discusses hypothetical extraterrestrial languages and the possibility of communicating with aliens.Chomsky, N., Roberts, I., and Watumull, J. Noam Chomsky: The False Promise of ChatGPT. New York Times. March 8, 2023.For someone interested in exploring Chomskys linguistic theories in depth, the following are a few key works tracing their development (along with Aspects, listed above).b. Secondary SourcesThere is a vast secondary literature surrounding Chomsky that seeks to explain, develop, and often criticize his theories. The following is a small sampling of works interesting to non-specialists. After a list of sources that cover Chomskys work in general, sources that are relevant to more specific aspects are listed by the section of this article they were referenced in or apply to.General:Cook, V. and Newsom, M. 1996. Chomskys Universal Grammar: An Introduction. Malden, MA: Blackwell.Very clear introduction to Chomskys theories and their importance to linguistic science. The first three chapters are especially valuable to non-specialists.Rey, G. 2020. Representation of Language: Philosophical Issues in a Chomskyan Linguistics. Oxford: Oxford University Press.A useful and thorough overview of the philosophical implications of Chomskys theories, particularly regarding the philosophy of science and the philosophy of mind, as well as a summary of the core linguistic theory.Scholz, B., Pelletier, F., Pullum, G., and Nedft, R. 2022. Philosophy of Linguistics,The Stanford Encyclopedia of Philosophy, Edward N. Zalta (ed.).This article is an excellent critical comparison of Chomskys theories on language and linguistic science with the major rival approaches.Life:Rai, M. 1995. Chomskys Politics. London: Verso.Cohen, J., and Rogers, J. 1991. Knowledge, Morality and Hope: The Social Thought of Noam Chomsky. New Left Review. I/187: 527.Philosophy of Linguistics:Bloomfield, L. 1933. Language. New York: Holt, Rinehart, and Winston.Hockett, C. 1960. The Origin of Speech. Scientific American. 203: 88 111.Quine, W. 1960. Word and Object. Cambridge, MA: MIT University Press.Skinner, B. 1957. Verbal Behavior. New York: Appleton-Century-Crofts.The Development of Chomskys Linguistic Theory:Baker, M. 2001. The Atoms of Language. New York: Basic BooksEasily readable presentation of Principles and Parameters Theory.Harris, R. 2021. The Linguistics Wars. Oxford: Oxford University Press.Liao, D., et al. 2022. Recursive Sequence Generation in Crows. Science Advances. 8(44).Summarizes recent challenges to Chomskys claim that recursion is uniquely human.Tomalin, M. 2006. Linguistics and the Formal Sciences: The Origins of Generative Grammar. Cambridge, UK: University of Cambridge Press.Provides as interesting historical background connecting Chomskys early work with contemporary developments in logic and mathematics.Technical:Generative Grammar:Lasnik, H. 1999. Minimalist Analysis. Malden, MA: BlackwellLasnik, H. 2000. Syntactic Structures Revisited. Cambridge, MA. MIT University PressLasnik, H. and Uriagereka, J. 1988. A Course in GB Syntax. Cambridge, MA. MIT University Press.Language and Languages:Criticisms of Universal Grammar:Evans, N. and Levinson, S. 2009. The Myth of Language Universals: Language Diversity and its Importance for Cognitive Science. Behavioral and Brain Sciences 32(5) pages 429 492.Levinson, S. 2016. Language and Mind: Lets Get the Issues Straight!. Making Sense of Language (Blum, S., ed.). Oxford: Oxford University Press pages 68 80.Relevant to the debate over the I-language/E-language distinction:Devitt, M. 2022. Overlooking Conventions: The Trouble with Linguistic Pragmatism. Oxford: Oxford University Press.Dummet, M. 1986. A nice derangement of epitaphs: Some comments on Davidson and Hacking. Truth and Interpretation (Lepore, E. ed.). Oxford: Blackwell.Katz, J. 1981. Language and Other Abstract Objects. Lanham, MD: Rowman and Littlefield.Katz, J. 1985. The Philosophy of Linguistics. Oxford: Oxford University Press.Lewis, D. 1969. Convention: A Philosophical Study. Cambridge, MA: Harvard University Press.Soames, S. 1984. Linguistics and Psychology. Linguistics and Philosophy 7: 155 179.Meaning and Analyticity:Davidson, D. 1967. Truth and Meaning. Synthese 17(3): 304 323.Fodor, J. 1998. Concepts: Where Cognitive Science Went Wrong. Cambridge, MA: MIT University Press.Katz, J. 1990. The Metaphysics of Meaning. Oxford: Oxford University Press.Pietroski, P. 2005. 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Cambridge, MA: Harvard University Press.Wittgenstein, L. 1953. Philosophical Investigations (Anscombe, G. translator). Oxford: Blackwell.On Pirah:Everett, D. 2005. Cultural Constraints on Grammar and Cognition in Pirah. Current Anthropology 46(4): 621646.The original claim that a language without recursion had been identified, allegedly showing Universal Grammar to be false.Hornstein, N. and Robinson, J. 2016. 100 Ways to Misrepresent Noam Chomsky. Current Affairs.Representative responses to Everett from those in Chomskys camp assert that even if his claims are correct, they would not represent a counterexample to Universal Grammar.McWhorter, J. 2016. The bonfire of Noam Chomsky: journalist Tom Wolfe targets the acclaimed linguist. Vox.Linguist John McWhorter provides a very understandable summary of the issues and assesses the often incautious way that the case has been handled in the popular press.Nevins, A., Pesetsky, D., Rodrigues, C. 2009. Pirah Exceptionality: A Reassessment. Language 85(2): 355 404.Technical article criticizing Everetts assessment of Pirah syntax.Other:Lakoff, G. 1971. On Generative Semantics. Semantics (Steinberg, G. and Jacobovits, I. ed.). Cambridge, UK: Cambridge University Press.An important work critical of Chomskys autonomy of syntax.Cognitive Science and Philosophy of Mind.Rey, G. 1997. Contemporary Philosophy of Mind. Hoboken: Wiley-Blackwell.Covers Chomskys contributions in this area, particularly regarding the downfall of behaviorism and the development of the computational theory of mind. Author InformationCasey A. EnosEmail: cenos@georgiasouthern.eduGeorgia Southern UniversityU. S. A.Noam Chomsky, born Avram Noam Chomsky on December 7, 1928, in Philadelphia, Pennsylvania, is a towering figure in both linguistics and political discourse. An intellectual prodigy, Chomsky earned his doctorate in linguistics from the University of Pennsylvania, eventually joining the Massachusetts Institute of Technology (MIT) in 1955, where he became a professor emeritus. His groundbreaking theories, such as transformational grammar and the Chomsky Hierarchy, revolutionized our understanding of language acquisition, positing that the ability to learn languages is innate to humans. Through this lens, Chomsky has profoundly influenced not only linguistics but also psychology and philosophy.Beyond his linguistic achievements, Chomsky is also renowned for his outspoken political views, identifying as a "libertarian socialist." His writings critically analyze U.S. foreign policy and often challenge mainstream narratives. His influential essay The Responsibility of Intellectuals, published in 1967, called on scholars to confront the ethical implications of their work, particularly amid the Vietnam War. Throughout his career, Chomsky has sparked controversies, such as those surrounding his positions on free speech and American military actions, but remains a respected and sought-after voice in various disciplines.Early Life and EducationAvram Noam Chomsky was born on December 7, 1928, in Philadelphia, Pennsylvania, into a family steeped in intellectualism and progressive politics. His mother, Elsie, was actively involved in radical political movements of the 1930s, while his father, William, a Russian Jewish immigrant, taught Hebrew at Gratz College. The injustices he observed during his childhood, such as witnessing police brutality against striking workers, fueled his early sense of social justice. By the age of 10, Chomsky had begun expressing his keen analytical abilities, penning an editorial on fascism for his school newspaper, showcasing his burgeoning intellectual prowess.Chomsky's academic journey began at the University of Pennsylvania, where he initially struggled to find relevance in his studies until he encountered Zellig S. Harris, a prominent figure in structural linguistics. Under Harris's mentorship, Chomsky was introduced to the complexities of language and its societal implications. He earned both his bachelors and masters degrees through innovative nontraditional modes of study. His masters thesis, titled "The Morphophonemics of Modern Hebrew," laid the groundwork for his future research. Following a brief period on a kibbutz in Israel, he returned to the University of Pennsylvania and ultimately completed his doctoral studies, culminating in the influential book "Syntactic Structures" in 1957.Career Start: Chomsky's Linguistic RevolutionsNoam Chomsky's career in linguistics began to take shape during his time at the University of Pennsylvania, where he encountered influential scholars like Zellig S. Harris. Chomsky was particularly captivated by the structure of language and its implications for understanding human cognition. His groundbreaking master's thesis on the morphophonemics of Modern Hebrew laid the foundation for his future work. By blending insights from various academic disciplines, Chomsky started to challenge prevailing notions about language, ultimately leading to his development of transformational grammar, which posits that language ability is innate to humans, shaped by internal cognitive structures rather than solely by external influences.In 1955, Chomsky joined the Massachusetts Institute of Technology (MIT) as a faculty member and continued to refine his theories. His seminal work, "Syntactic Structures" (1957), introduced revolutionary concepts that emphasized the inherent grammatical structures in the human mind, which contributed significantly to the field of cognitive science. As he advocated for language's innate aspects, Chomsky captivated both academic and popular audiences by suggesting that the capability to learn languages is hardwired into our biology. His work resonated across disciplines, igniting debates and discussions that shaped modern linguistics and fundamentally changed how we understand human communication and cognition.Career Success: Political Activism and ControversiesNoam Chomsky's career success extends well beyond the boundaries of linguistics; he has established himself as a formidable political activist and commentator. His intellectual contributions took a decisive turn in the 1960s when he publicly opposed the Vietnam War. In his seminal essay, "The Responsibility of Intellectuals," published in 1967, Chomsky criticized his peers for their silence on moral issues, urging them to reflect on their roles as intellectuals in society. This marked the beginning of his journey into political activism, where he consistently challenged the status quo and called for accountability among political leaders and the media.Chomsky's political positions have often led him into contentious debates. His co-authorship of "Manufacturing Consent" with Edward S. Herman delves into the influence of mass media on public perception, positing that the media serves elite interests rather than the public good. His comments on the U.S. foreign policy have also sparked considerable controversy, particularly his assertion that the U.S. behaves as a leading terrorist state. This provocative stance, alongside his willingness to challenge narratives surrounding events like the September 11 attacks, has positioned Chomsky as both a respected and polarizing figure in contemporary political discourse.Family

Life: Wife and ChildrenNoam Chomskys family life has played a significant role in shaping his personal and intellectual journey. In 1949, he married Carol Schatz, an educational specialist and a long-time acquaintance from his childhood. Their marriage endured for nearly six decades, during which they welcomed three children: daughters Aviva and Diane, and a son named Henry. Carol was not only a partner in life but also a supportive figure in Chomsky's academic pursuits, as they often shared discussions about education and philosophy. The couple experienced both challenges and triumphs together, including the loss of Carol to cancer in 2008, a period which profoundly affected Chomsky.In 2014, at the age of 85, Chomsky found love again when he married Valeria Wasserman. This new chapter in his life brought companionship and support during the later years of his career. Although Chomsky has faced health challenges, including a massive stroke in June 2023, he continues to have a close-knit family around him. Valeria, who has been a steadfast partner, often assists him in maintaining his health and well-being. The intimate connections with his family have not only provided personal solace but also a sense of stability as he navigates the complexities of being a public intellectual.Net Worth and Earnings: Career AchievementsNoam Chomsky, an iconic figure in the fields of linguistics and political theory, has amassed significant wealth through his extensive career as a professor, author, and public intellectual. With more than 100 published books and an impressive array of articles, his contributions to linguisticsespecially the development of transformational grammarare foundational to contemporary understandings of language. Additionally, his critical writings on U.S. foreign policy and media influence have cemented his place as a leading voice for social justice. His lectures and seminars continue to draw global audiences, further enhancing his reputation and financial success.While calculating Chomsky's net worth precisely is challenging due to the diverse sources of his income, estimates suggest he has accumulated millions over his lifetime. His earnings stem not just from his academic roles, including a prestigious professorship at MIT, but also from royalties of his numerous publications, speaking engagements, and participation in various media and journalistic platforms. Chomsky's influence extends beyond academiahe is a sought-after public speaker, particularly in discussions surrounding ethics, democracy, and social responsibility, making him a prominent figure in both intellectual and activist circles.American linguist and activist (born 1928)"Chomsky" redirects here. For other uses, see Chomsky (disambiguation).Noam ChomskyChomsky in 2020BornAvram Noam Chomsky (1928-12-07) December 7, 1928 (age96)Philadelphia, Pennsylvania, U.S.SpousesCarol Schatz (m.1949; died2008)Valeria Wasserman (m.2014)Children3, including AvivaFatherWilliam ChomskyAwardsGuggenheim Fellowship (1971)Member of the National Academy of Sciences (1972)APA Award for Distinguished Scientific Contributions to Psychology (1984)Orwell Award (1987, 1989)Kyoto Prize in Basic Sciences (1988)Helmholtz Medal (1996)Benjamin Franklin Medal in Computer and Cognitive Science (1999)Sydney Peace Prize (2011)Nuclear Age Peace Foundation (2014)Academic backgroundEducationUniversity of Pennsylvania (BA, MA, PhD)ThesisTransformational Analysis(1955)Doctoral advisorZellig HarrisInfluencesAcademic J. L. Austin, William Chomsky, C. West Churchman, Ren Descartes, Galileo,[1] Nelson Goodman, Morris Halle, Zellig Harris, Wilhelm von Humboldt, David Hume,[2] Roman Jakobson, Immanuel Kant,[3] George Armitage Miller, Pini, Hilary Putnam,[4] W.V.O. Quine, Bertrand Russell, Ferdinand de Saussure, Marcel-Paul Schtzenberger, Alan Turing,[1] Ludwig Wittgenstein[5] Political Mikhail Bakunin, Alex Carey, William Chomsky, John Dewey,[6] Zellig Harris, Wilhelm von Humboldt,[7] David Hume,[8] Thomas Jefferson, Karl Korsch, Peter Kropotkin,[8] Karl Liebknecht, Rosa Luxemburg, John Locke, Dwight Macdonald, Paul Mattick,[8] John Stuart Mill, George Orwell, Anton Pannekoek, Pierre-Joseph Proudhon,[9] Rudolf Rocker, Jean-Jacques Rousseau,[8] Bertrand Russell, Diego Abad de Santilln, Adam Smith[8] Academic workDisciplineLinguistics, analytic philosophy, cognitive science, political criticism[citation needed]School or traditionAnarcho-syndicalism, libertarian socialismInstitutionsMassachusetts Institute of TechnologyUniversity of ArizonaDoctoral students Glat Aygen, Mark Baker, Jonathan Bobaljik, Joan Bresnan, Peter Culicover, Ray C. Dougherty, Janet Dean Fodor, John Goldsmith, C.-T. James Huang, Sabine Iatridou, Ray Jackendoff, Edward Klima, Jan Koster, Jaklin Kornfilt, S.-Y. Kuroda, Howard Lasnik, Robert Lees, Alec Marantz, Diane Massam, James D. McCawley, Jacques Mehler, Andrea Moro, Barbara Partee, David Perlmutter, David Pesetsky, Tanya Reinhart, John R. Ross, Ivan Sag, Edwin S. WilliamsInfluencedIn academia John Backus, Derek Bickerton, Julian C. Boyd, Daniel Dennett,[10] Daniel Everett, Jerry Fodor, Gilbert Harman, Marc Hauser, Norbert Hornstein, Niels Kaj Jerne, Donald Knuth, Georges J.F. Khler, Peter Ludlow, Colin McGinn,[11] Csar Milstein, Steven Pinker,[12] John Searle,[13] Neil Smith, Crispin Wright[10] In politics Michael Albert, Julian Assange, Bono,[14] Jean Bricmont, Hugo Chvez, Zack de la Rocha, Clinton Fernandes, Norman Finkelstein, Robert Fisk, Amy Goodman, Stephen Jay Gould,[15] Glenn Greenwald, Christopher Hitchens,[14] Naomi Klein,[14] Kyle Kulinski,[16] Michael Moore,[14] John Nichols, Ann Nocenti,[17] John Pilger, Harold Pinter,[14] Arundhati Roy, Edward Said, Aaron Swartz[18] Noam Chomsky's voiceNoam Chomsky on the invisible handRecorded July 24, 2008Websitechomsky.infoSignatureAvram Noam Chomsky[a] (born December 7, 1928) is an American professor and public intellectual known for his work in linguistics, political activism, and social criticism. Sometimes called "the father of modern linguistics",[b] Chomsky is also a major figure in analytic philosophy and one of the founders of the field of cognitive science. He is a laureate professor of linguistics at the University of Arizona and an institute professor emeritus at the Massachusetts Institute of Technology (MIT). Among the most cited living authors, Chomsky has written more than 150 books on topics such as linguistics, war, and politics. In addition to his work in linguistics, since the 1960s Chomsky has been an influential voice on the American left as a consistent critic of U.S. foreign policy, contemporary capitalism, and corporate influence on political institutions and the media.Born to Ashkenazi Jewish immigrants in Philadelphia, Chomsky developed an early interest in anarchism from alternative bookstores in New York City. He studied at the University of Pennsylvania. During his postgraduate work in the Harvard Society of Fellows, Chomsky developed the theory of transformational grammar for which he earned his doctorate in 1955. That year he began teaching at MIT, and in 1957 emerged as a significant figure in linguistics with his landmark work Syntactic Structures, which played a major role in remodeling the study of language. From 1958 to 1959 Chomsky was a National Science Foundation fellow at the Institute for Advanced Study. He created or co-created the universal grammar theory, the generative grammar theory, the Chomsky hierarchy, and the minimalist program. Chomsky also played a pivotal role in the decline of linguistic behaviorism, and was particularly critical of the work of B. F. Skinner.An outspoken opponent of U.S. involvement in the Vietnam War, which he saw as an act of American imperialism, in 1967 Chomsky rose to national attention for his anti-war essay "The Responsibility of Intellectuals". Becoming associated with the New Left, he was arrested multiple times for his activism and placed on President Richard Nixon's list of political opponents. While expanding his work in linguistics over subsequent decades, he also became involved in the linguistics wars. In collaboration with Edward S. Herman, Chomsky later articulated the propaganda model of media criticism in Manufacturing Consent, and worked to expose the Indonesian occupation of East Timor. His defense of unconditional freedom of speech, including that of Holocaust denial, generated significant controversy in the Faurisson affair of the 1980s. Chomsky's commentary on the Cambodian genocide and the Bosnian genocide also generated controversy. Since retiring from active teaching at MIT, he has continued his vocal political activism, including opposing the 2003 invasion of Iraq and supporting the Occupy movement. An anti-Zionist, Chomsky considers Israel's treatment of Palestinians to be worse than South Africanstyle apartheid,[19] and criticizes U.S. support for Israel.Chomsky is widely recognized as having helped to spark the cognitive revolution in the human sciences, contributing to the development of a new cognitivistic framework for the study of language and the mind. Chomsky remains a leading critic of U.S. foreign policy, contemporary capitalism, U.S. involvement and Israel's role in the IsraeliPalestinian conflict, and mass media. Chomsky and his ideas remain highly influential in the anti-capitalist and anti-imperialist movements.Chomsky was born on December 7, 1928, in the East Oak Lane neighborhood of Philadelphia, Pennsylvania.[20] His parents, William Chomsky and Elsie Simonofsky, were Jewish immigrants.[21] William had fled the Russian Empire in 1913 to escape conscription and worked in Baltimore sweatshops and Hebrew elementary schools before attending university.[22] After moving to Philadelphia, William became principal of the Congregation Mikveh Israel religious school and joined the Gratz College faculty. He placed great emphasis on educating people so that they would be "well integrated, free and independent in their thinking, concerned about improving and enhancing the world, and eager to participate in making life more meaningful and worthwhile for all", a mission that shaped and was subsequently adopted by his son.[23] Elsie, who also taught at Mikveh Israel, shared her leftist politics and care for social issues with her sons.[23]Noam's only sibling, David Eli Chomsky (19342021), was born five years later, and worked as a cardiologist in Philadelphia.[23][24] The brothers were close, though David was more easygoing while Noam could be very competitive. They were raised Jewish, being taught Hebrew and regularly involved with discussing the political theories of Zionism; the family was particularly influenced by the Left Zionist writings of Ahad Ha'am.[25] He faced antisemitism as a child, particularly from Philadelphia's Irish and German communities.[26]Chomsky attended the independent, Deweyite Oak Lane Country Day School[27] and Philadelphia's Central High School, where he excelled academically and joined various clubs and societies, but was troubled by the school's hierarchical and domineering teaching methods.[28] He also attended Hebrew High School at Gratz College, where his father taught.[29]Chomsky has described his parents as "normal Roosevelt Democrats" with center-left politics, but relatives involved in the International Ladies' Garment Workers' Union exposed him to socialism and far-left politics.[30] He was substantially influenced by his uncle and the Jewish leftists who frequented his New York City newspaper stand to debate current affairs.[31] Chomsky himself often visited left-wing and anarchist bookstores when visiting his uncle in the city, voraciously reading political literature.[32] He became absorbed in the story of the 1939 fall of Barcelona and suppression of the Spanish anarchosyndicalist movement, writing his first article on the topic at the age of 10.[33] That he came to identify with anarchism first rather than another leftist movement, he described as a "lucky accident".[34] Chomsky was firmly anti-Bolshevik by his early teens.[35]In 1945, at the age of 16, Chomsky began a general program of study at the University of Pennsylvania, where he explored philosophy, logic, and languages and developed a primary interest in learning Arabic.[36] Living at home, he funded his undergraduate degree by teaching Hebrew.[37] Frustrated with his experiences at the university, he considered dropping out and moving to a kibbutz in Mandatory Palestine,[38] but his intellectual curiosity was reawakened through conversations with the linguist Zellig Harris, whom he first met in a political circle in 1947. Harris introduced Chomsky to the field of theoretical linguistics and convinced him to major in the subject.[39] Chomsky's BA honors thesis, "Morphophonemics of Modern Hebrew", applied Harris's methods to the language.[40] Chomsky revised this thesis for his MA, which he received from the University of Pennsylvania in 1951; it was subsequently published as a book.[41] He also developed his interest in philosophy while at university, in particular under the tutelage of Nelson Goodman.[42]From 1951 to 1955, Chomsky was a member of the Society of Fellows at Harvard University, where he undertook research on what became his doctoral dissertation.[43] Having been encouraged by Goodman to apply,[44] Chomsky was attracted to Harvard in part because the philosopher Willard Van Orman Quine was based there. Both Quine and a visiting philosopher, J. L. Austin of the University of Oxford, strongly influenced Chomsky.[45] In 1952, Chomsky published his first academic article in The Journal of Symbolic Logic.[44] Highly critical of the established behaviorist currents in linguistics, in 1954, he presented his ideas at lectures at the University of Chicago and Yale University.[46] He had not been registered as a student at Pennsylvania for four years, but in 1955 he submitted a thesis setting out his ideas on transformational grammar; he was awarded a Doctor of Philosophy degree for it, and it was privately distributed among specialists on microfilm before being published in 1975 as part of The Logical Structure of Linguistic Theory.[47] Harvard professor George Armitage Miller was impressed by Chomsky's thesis and collaborated with him on several technical papers in mathematical linguistics.[48] Chomsky's doctorate exempted him from compulsory military service, which was otherwise due to begin in 1955.[49]In 1947, Chomsky began a romantic relationship with Carol Doris Schatz, whom he had known since early childhood. They married in 1949.[50] After Chomsky was made a Fellow at Harvard, the couple moved to the Allston area of Boston and remained there until 1965, when they relocated to the suburb of Lexington.[51] The couple took a Harvard travel grant to Europe in 1953.[52] He enjoyed living in Hashomer Hatzair's HaZore'a kibbutz while in Israel, but was appalled by his interactions with Jewish nationalism, anti-Arab racism and, within the kibbutz's leftist community, Stalinism.[53] On visits to New York City, Chomsky continued to frequent the office of the Yiddish anarchist journal Fraye Arbeter Shtime and became enamored with the ideas of Rudolf Rocker, a contributor whose work introduced Chomsky to the link between anarchism and classical liberalism.[54] Chomsky also read other political thinkers: the anarchists Mikhail Bakunin and Diego Abad de Santilln, democratic socialists George Orwell, Bertrand Russell, and Dwight Macdonald, and works by Marxists Karl Liebknecht, Karl Korsch, and Rosa Luxemburg.[55] His politics were reaffirmed by Orwell's depiction of Barcelona's functioning anarchist society in Homage to Catalonia (1938).[56] Chomsky read the leftist journal Politics, which furthered his interest in anarchism,[57] and the council communist periodical Living Marxism, though he rejected the Marxist orthodoxy of its editor, Paul Mattick.[58]Chomsky befriended two linguists at the Massachusetts Institute of Technology (MIT)Morris Halle and Roman Jakobsonthe latter of whom secured him an assistant professor position there in 1955. At MIT, Chomsky spent half his time on a mechanical translation project and half teaching a course on linguistics and philosophy.[59] He described MIT as open to experimentation where he was free to pursue his idiosyncratic interests.[60] MIT promoted him to the position of associate professor in 1957, and over the next year he was also a visiting professor at Columbia University.[61] The Chomskys had their first child, Aviva, that same year.[62] He also published his first book on linguistics, Syntactic Structures, a work that radically opposed the dominant HarrisBloomfield trend in the field.[63] Responses to Chomsky's ideas ranged from indifference to hostility, and his work proved divisive and caused "significant upheaval" in the discipline.[64] The linguist John Lyons later asserted that Syntactic Structures "revolutionized the scientific study of language".[65] From 1958 to 1959 Chomsky was a National Science Foundation fellow at the Institute for Advanced Study in Princeton, New Jersey.[66]The Great Dome at the Massachusetts Institute of Technology (MIT); Chomsky began working at MIT in 1955.Portrait of Chomsky, c.1961Chomsky's provocative critique of B. F. Skinner, who viewed language as learned behavior, and that critique's challenge to the dominant behaviorist paradigm thrust Chomsky into the limelight. Chomsky argued that behaviorism underplayed the role of human creativity in learning language and overplayed the role of external conditions in influencing verbal behavior.[67] He proceeded to found MIT's graduate program in linguistics with Halle. In 1961, Chomsky received tenure and became a full professor in the Department of Modern Languages and Linguistics.[68] He was appointed plenary speaker at the Ninth International Congress of Linguists, held in 1962 in Cambridge, Massachusetts, which established him as the de facto spokesperson of American linguistics.[69] Between 1963 and 1965 he consulted on a military-sponsored project to teach computers to understand natural English commands from military generals.[70]Chomsky continued to publish his linguistic ideas throughout the decade, including in Aspects of the Theory of Syntax (1965), Topics in the Theory of Generative Grammar (1966), and Cartesian Linguistics: A Chapter in the History of Rationalist Thought (1966).[71] Along with Halle, he also edited the Studies in Language series of books for Harper and Row.[72] As he began to accrue significant academic recognition and honors for his work, Chomsky lectured at the University of California, Berkeley, in 1966.[73] These lectures were published as Language and Mind in 1968.[74] In the late 1960s, a high-profile intellectual rift later known as the linguistic wars developed between Chomsky and some of his colleagues and doctoral studentsincluding Paul Postal, John Ross, George Lakoff, and James D. McCawleywho contended that Chomsky's syntax-based, interpretivist linguistics did not properly account for semantic context (general semantics). A post hoc assessment of this period concluded that the opposing programs ultimately were complementary, each informing the other.[75][I]t does not require very far-reaching, specialized knowledge to perceive that the United States was invading South Vietnam. And, in fact, to take apart the system of illusions and deception which functions to prevent understanding of contemporary reality [is] not a task that requires extraordinary skill or understanding. It requires the kind of normal skepticism and willingness to apply one's analytical skills that almost all people have and that they can exercise.Chomsky on the Vietnam War[76]Chomsky joined protests against U.S. involvement in the Vietnam War in 1962, speaking on the subject at small gatherings in churches and homes.[77] His 1967 critique of U.S. involvement, "The Responsibility of Intellectuals", among other contributions to The New York Review of Books, debuted Chomsky as a public dissident.[78] This essay and other political articles were collected and published in 1969 as part of Chomsky's first political book, American Power and the New Mandarins.[79] He followed this with further political books, including At War with Asia (1970), The Backroom Boys (1973), For Reasons of State (1973), and Peace in the Middle East? (1974), published by Pantheon Books.[80] These publications led to Chomsky's association with the American New Left movement,[81] though he thought little of prominent New Left intellectuals Herbert Marcuse and Erich Fromm and preferred the company of activists to that of intellectuals.[82] Chomsky remained largely ignored by the mainstream press throughout this period.[83]Portrait of Noam Chomsky, c.1969Chomsky also became involved in left-wing activism. Chomsky refused to pay half his taxes, publicly supported students who refused the draft, and was arrested while participating in an anti-war teach-in outside the Pentagon.[84] During this time, Chomsky co-founded the anti-war collective RESIST with Mitchell Goodman, Denise Levertov, William Sloane Coffin, and Dwight Macdonald.[85] Although he questioned the objectives of the 1968 student protests,[86] Chomsky regularly gave lectures to student activist groups and, with his colleague Louis Kampf, ran undergraduate courses on politics at MIT independently of the conservative-dominated political science department.[87] When student activists campaigned to stop weapons and counterinsurgency research at MIT, Chomsky was sympathetic but felt that the research should remain under MIT's oversight and limited to systems of deterrence and defense.[88] Chomsky has acknowledged that his MIT lab's funding at this time came from the military.[89] He later said he considered resigning from MIT during the Vietnam War. [90] There has since been a wide-ranging debate about what effects Chomsky's employment at MIT had on his political and linguistic ideas.[91]External imagesChomsky participating in the anti-Vietnam War March on the Pentagon, October 21, 1967 Chomsky with other public figures The protesters passing the Lincoln Memorial en route to the PentagonChomsky's anti-war activism led to his arrest on multiple occasions and he was on President Richard Nixon's master list of political opponents.[92] Chomsky was aware of the potential repercussions of his civil disobedience, and his wife began studying for her own doctorate in linguistics to support the family in the event of Chomsky's imprisonment or joblessness.[93] Chomsky's scientific reputation insulated him from administrative action based on his beliefs.[94] In 1970 he visited southeast Asia to lecture at Vietnam's Hanoi University of Science and Technology and toured war refugee camps in Laos. In 1973 he helped lead a committee commemorating the 50th anniversary of the War Resisters League.[95]Chomsky's work in linguistics continued to gain international recognition as he received multiple honorary doctorates.[96] He delivered public lectures at the University of Cambridge, Columbia University (Woodbridge Lectures), and Stanford University.[97] His appearance in a 1971 debate with French continental philosopher Michel Foucault positioned Chomsky as a symbolic figurehead of analytic philosophy.[98] He continued to publish extensively on linguistics, producing Studies on Semantics in Generative Grammar (1972),[94] an enlarged edition of Language and Mind (1972),[99] and Reflections on Language (1975).[99] In 1974 Chomsky became a corresponding fellow of the British Academy.[97]See also: Cambodian genocide denial Chomsky and Herman, and Faurisson affairChomsky in 1977In the late 1970s and 1980s, Chomsky's linguistic publications expanded and clarified his earlier work, addressing his critics and updating his grammatical theory.[100] His political talks often generated considerable controversy, particularly when he criticized the Israeli government and military.[101] In the early 1970s Chomsky began collaborating with Edward S. Herman, who had also published critiques of the U.S. war in Vietnam.[102] Together they wrote Counter-Revolutionary Violence: Bloodbaths in Fact & Propaganda, a book that criticized U.S. military involvement in Southeast Asia and the mainstream media's failure to cover it. Warner Modular published it in 1973, but its parent company disapproved of the book's contents and ordered all copies destroyed.[103]While mainstream publishing options proved elusive, Chomsky found support from Michael Albert's South End Press, an activist-oriented publishing company.[104] In 1979, South End published Chomsky and Herman's revised Counter-Revolutionary Violence as the two-volume The Political Economy of Human Rights,[105] which compares U.S. media reactions to the Cambodian genocide and the Indonesian occupation of East Timor. It argues that because Indonesia was a U.S. ally, U.S. media ignored the East Timorese situation while focusing on events in Cambodia, a U.S. enemy.[106] Chomsky's response included two testimonials before the United Nations' Special Committee on Decolonization, successful encouragement for American media to cover the occupation, and meetings with refugees in Lisbon.[107] Marxist academic Steven Lukes most prominently publicly accused Chomsky of betraying his anarchist ideals and acting as an apologist for Cambodian leader Pol Pot.[108] Herman said that the controversy "imposed a serious personal cost" on Chomsky,[109] who considered the personal criticism less important than the evidence that "mainstream intelligentsia suppressed or justified the crimes of their own states".[110]Chomsky had long publicly criticized Nazism, and totalitarianism more generally, but his commitment to freedom of speech led him to defend the right of French historian Robert Faurisson to advocate a position widely characterized as Holocaust denial. Without Chomsky's knowledge, his plea for Faurisson's freedom of speech was published as the preface to the latter's 1980 book Mmoire en dfense contre ceux qui m'accusent de falsifier l'histoire.[111] Chomsky was widely condemned for defending Faurisson,[112] and France's mainstream press accused Chomsky of being a Holocaust denier himself, refusing to publish his rebuttals to their accusations.[113] Critiquing Chomsky's position, sociologist Werner Cohn later published an analysis of the affair titled Partners in Hate: Noam Chomsky and the Holocaust Deniers.[114] The Faurisson affair had a lasting, damaging effect on Chomsky's career,[115] especially in France.[116]External videos Manufacturing Consent: Noam Chomsky and the Media, a 1992 documentary exploring Chomsky's work of the same name and its impactIn 1985, during the Nicaraguan Contra Warin which the U.S. supported the contra militia against the Sandinista governmentChomsky traveled to Managua to meet with workers' organizations and refugees of the conflict, giving public lectures on politics and linguistics.[117] Many of these lectures were published in 1987 as On Power and Ideology: The Managua Lectures.[118] In 1983 he published The Fateful Triangle, which argued that the U.S. had continually used the IsraeliPalestinian conflict for its own ends.[119] In 1988, Chomsky visited the Palestinian territories to witness the impact of Israeli occupation.[120]Chomsky and Herman's Manufacturing Consent: The Political Economy of the Mass Media (1988) outlines their propaganda model for understanding mainstream media. Even in countries without official censorship, they argued, the news is censored through five filters that greatly influence both what and how news is presented.[121] The book received a 1992 film adaptation.[122] In 1989, Chomsky published Necessary Illusions: Thought Control in Democratic Societies, in which he suggests that a worthwhile democracy requires that its citizens undertake intellectual self-defense against the media and elite intellectual culture that seeks to control them.[123] By the 1980s, Chomsky's students had become prominent linguists who, in turn, expanded and revised his linguistic theories.[124]Chomsky speaking in support of the Occupy movement in 2011In the 1990s, Chomsky embraced political activism to a greater degree than before.[125] Retaining his commitment to the cause of East Timorese independence, in 1995 he visited Australia to talk on the issue at the behest of the East Timorese Relief Association and the National Council for East Timorese Resistance.[126] The lectures he gave on the subject were published as Powers and Prospects in 1996.[126] As a result of the international publicity Chomsky generated, his biographer Wolfgang Sperlich opined that he did more to aid the cause of East Timorese independence than anyone but the investigative journalist John Pilger.[127] After East Timor attained independence from Indonesia in 1999, the Australian-led International Force for East Timor arrived as a peacekeeping force; Chomsky was critical of this, believing it was designed to secure Australian access to East Timor's oil and gas reserves under the Timor Gap Treaty.[128]Chomsky was widely interviewed after the September 11 attacks in 2001 as the American public attempted to make sense of the attacks.[129] He argued that the ensuing War on Terror was not a new development but a continuation of U.S. foreign policy and concomitant rhetoric since at least the Reagan era.[130] He gave the D.T. Lakdawala Memorial Lecture in New Delhi in 2001,[131] and in 2003 visited Cuba at the invitation of the Latin American Association of Social Scientists.[132] Chomsky's 2003 Hegemony or Survival articulated what he called the United States' "imperial grand strategy" and critiqued the Iraq War and other aspects of the War on Terror.[133] Chomsky toured internationally with greater regularity during this period.[132] During the 2014 Scottish independence referendum, Chomsky supported Scottish independence.[134]Chomsky retired from MIT in 2002,[135] but continued to conduct research and seminars on campus as an emeritus.[136] That same year he visited Turkey to attend the trial of a publisher who had been accused of treason for printing one of Chomsky's books; Chomsky insisted on being a co-defendant and amid international media attention, the Security Courts dropped the charge on the first day.[137] During that trip Chomsky visited Kurdish areas of Turkey and spoke out in favor of the Kurds' human rights.[137] A supporter of the World Social Forum, he attended its conferences in Brazil in both 2002 and 2003, also attending the Forum event in India.[138]Chomsky discussing ecology, ethics and anarchism in 2014Chomsky supported the 2011 Occupy movement, speaking at encampments and publishing on the movement, which he called a reaction to a 30-year class war.[139] The 2015 documentary Requiem for the American Dream summarizes his views on capitalism and economic inequality through a "75-minute teach-in".[140]In 2015 Chomsky and his wife purchased a residence in So Paulo, Brazil, and began splitting their time between Brazil and the U.S.[141] Chomsky taught a short-term politics course at the University of Arizona in 2017.[142] He was later hired as the Agnese Nelms Haury Chair in the Agnese Nelms Haury Program in Environment and Social Justice, a part-time professorship in the linguistics department with duties including teaching and public seminars.[143] His salary was covered by philanthropic donations.[144] After a stroke in June 2023, Chomsky moved to Brazil full-time.[141]What started as purely linguistic research... has led, through involvement in political causes and an identification with an older philosophic tradition, to no less than an attempt to formulate an overall theory of man. The roots of this are manifest in the linguistic theory... The discovery of cognitive structures common to the human race but only to humans (species specific), leads quite easily to thinking of unalienable human attributes.Edward Marcotte on the significance of Chomsky's linguistic theory[145]The basis of Chomsky's linguistic theory lies in biolinguistics, the linguistic school that holds that the principles underpinning the structure of language are biologically preset in the human mind and hence genetically inherited.[146] He argues that all humans share the same underlying linguistic structure, irrespective of sociocultural differences.[147] In adopting this position Chomsky rejects the radical behaviorist psychology of B.F. Skinner, who viewed speech, thought, and all behavior as a completely learned product of the interactions between organisms and their environments. Accordingly, Chomsky argues that language is a unique evolutionary development of the human species and distinguished from modes of communication used by any other animal species.[148][149] Chomsky argues that his nativist, internalist view of language is consistent with the philosophical school of "rationalism" and contrasts with the anti-nativist, externalist view of language consistent with the philosophical school of "empiricism",[150] which contends that all knowledge, including language, comes from external stimuli.[145] Historians have disputed Chomsky's claim about rationalism on the basis that his theory of innate grammar excludes propositional knowledge and instead focuses on innate learning capacities or structures.[151]Main article: Universal grammarSince the 1960s, Chomsky has maintained that syntactic knowledge is partially inborn, implying that children need only learn certain language-specific features of their native languages. He bases his argument on observations about human language acquisition and describes a "poverty of the stimulus": an enormous gap between the linguistic stimuli to which children are exposed and the rich linguistic competence they attain. For example, although children are exposed to only a very small and finite subset of the allowable syntactic variants within their first language, they somehow acquire the highly organized and systematic ability to understand and produce an infinite number of sentences, including ones that have never before been uttered, in that language.[152] To explain this, Chomsky proposed that the primary linguistic data must be supplemented by an innate linguistic capacity. Furthermore, while a human baby and a kitten are both capable of inductive reasoning, if they are exposed to exactly the same linguistic data, the human will always acquire the ability to understand and produce language, while the kitten will never acquire either ability. Chomsky referred to this difference in capacity as the language acquisition device, and suggested that linguists needed to determine both what that device is and what constraints it imposes on the range of possible human languages. The universal features that result from these constraints would constitute "universal grammar".[153][154][155] Multiple researchers have challenged universal grammar on the grounds of the evolutionary infeasibility of its genetic basis for language,[156] the lack of crosslinguistic surface universals,[157] and the unproven link between innate/universal structures and the structures of specific languages.[158] Michael Tomasello has challenged Chomsky's theory of innate syntactic knowledge as based on theory and not behavioral observation.[159] The empirical basis of poverty of the stimulus arguments has been challenged by Geoffrey Pullum and others, leading to back-and-forth debate in the language acquisition literature. [160][161] Recent work has also suggested that some recurrent neural network architectures can learn hierarchical structure without an explicit constraint.[162]Main articles: Generative grammar, Transformational grammar, Chomsky hierarchy, and Minimalist programChomsky is generally credited with launching the research tradition of generative grammar, which aims to explain the cognitive basis of language by formulating and testing explicit models of humans' subconscious grammatical knowledge. Generative grammar proposes models of language consisting of explicit rule systems, which make testable falsifiable predictions. The goal of generative grammar is sometimes described as answering the question "What is that that you know when you know a language?"[163][164]Within generative grammar, Chomsky's initial model was called transformational grammar. Chomsky developed transformational grammar in the mid-1950s, whereupon it became the dominant syntactic theory in linguistics for two decades.[165] "Transformations" are syntactic rules that derive surface structure from deep structure, which was often considered to reflect the structure of meaning.[145] Transformational grammar later developed into the 1980s government and binding theory and thence into the minimalist program.[165] This research focused on the principles and parameters framework, which explained children's ability to learn any language by filling open parameters (a set of universal grammar principles) that adapt as the child encounters linguistic data.[166] The minimalist program, initiated by Chomsky,[167] asks which minimal principles and parameters theory fits most elegantly, naturally, and simply.[166]Set inclusions described by the Chomsky hierarchyChomsky is commonly credited with inventing transformational-generative grammar, but his original contribution was considered modest when he first published his theory. In his 1955 dissertation and his 1957 textbook Syntactic Structures, he presented recent developments in the analysis formulated by Zellig Harris, who was Chomsky's PhD supervisor, and by Charles F. Hockett.[c] Their method derives from the work of the structural linguist Louis Hjelmslev, who introduced algorithmic grammar to general linguistics.[d] Based on this rule-based notation of grammars, Chomsky grouped logically possible phrase-structure grammar types into a series of four nested subsets and increasingly complex types, together known as the Chomsky hierarchy. This classification remains relevant to formal language theory[168] and theoretical computer science, especially programming language theory,[169] compiler construction, and automata theory.[170] Chomsky's Syntactic Structures became, beyond generative linguistics as such, a catalyst for connecting what in Hjelmslev's and Jespersen's time was the beginnings of structural linguistics, which has become cognitive linguistics.[171]Main article: Political positions of Noam ChomskyThe second major area to which Chomsky has contributedand surely the best known in terms of the number of people in his audience and the ease of understanding what he writes and saysis his work on sociopolitical analysis; political, social, and economic history; and critical assessment of current political circumstance. In Chomsky's view, although those in power mightand dotry to obscure their intentions and to defend their actions in ways that make them acceptable to citizens, it is easy for anyone who is willing to be critical and consider the facts to discern what they are up to.James McGilvray, 2014[172]Chomsky is a prominent political dissident.[e] His political views have changed little since his childhood,[173] when he was influenced by the emphasis on political activism that was ingrained in Jewish working-class tradition.[174] He usually identifies as an anarcho-syndicalist or a libertarian socialist.[175] He views these positions not as precise political theories but as ideals that he thinks best meet human needs: liberty, community, and freedom of association.[176] Unlike some other socialists, such as Marxists, Chomsky believes that politics lies outside the remit of science,[177] but he still roots his ideas about an ideal society in empirical data and empirically justified theories.[178]In Chomsky's view, the truth about political realities is systematically distorted or suppressed by an elite corporatocracy, which uses corporate media, advertising, and think tanks to promote its own propaganda. His work seeks to reveal such manipulations and the truth they obscure.[179] Chomsky believes this web of falsehood can be broken by "common sense", critical thinking, and understanding the roles of self-interest and self-deception,[180] and that intellectuals abdicate their moral responsibility to tell the truth about the world in fear of losing prestige and funding.[181] He argues that, as such an intellectual, it is his duty to use his social privilege, resources, and training to aid popular democracy movements in their struggles.[182]Although he has participated in direct action demonstrationsjoining protests, being arrested, organizing groupsChomsky's primary political outlet is education, i.e., free public lessons.[183] Chomsky is a longtime member of the Democratic Socialists of America (DSA)[184][185] and a longtime member of the Industrial Workers of the World (IWW) international union,[186] as was his father.[187]Chomsky at the 2003 World Social Forum, a convention for counter-hegemonic globalization, in Porto AlegreChomsky has been a prominent critic of "American imperialism",[188] but is not a pacifist, believing World War II was justified as America's last defensive war.[189] He believes that U.S. foreign policy's basic principle is the establishment of "open societies" that are economically and politically controlled by the U.S. and where U.S.-based businesses can prosper.[190] He argues that the U.S. seeks to suppress any movements within these countries that are not compliant with U.S. interests and to ensure that U.S.-friendly governments are placed in power.[181] When discussing current events, he emphasizes their place within a wider historical perspective.[191] He believes that official, sanctioned historical accounts of U.S. and British extraterritorial operations have consistently whitewashed these nations' actions in order to present them as having benevolent motives in either spreading democracy or, in older instances, spreading Christianity; by criticizing these accounts, he seeks to correct them.[192] Prominent examples he regularly cites are the actions of the British Empire in India and Africa and U.S. actions in Vietnam, the Philippines, Latin America, and the Middle East.[192]Chomsky's political work has centered heavily on criticizing the actions of the United States.[191] He has said he focuses on the U.S. because the country has militarily and economically dominated the world during his lifetime and because its liberal democratic electoral system allows the citizenry to influence government policy.[193] His hope is that, by spreading awareness of the impact U.S. foreign policies have on the populations affected by them, he can sway the populations of the U.S. and other countries into opposing the policies.[192] He urges people to criticize their governments' motivations, decisions, and actions, to accept responsibility for their own thoughts and actions, and to apply the same standards to others as to themselves.[194]Chomsky has been critical of U.S. involvement in the IsraeliPalestinian conflict, arguing that it has consistently blocked a peaceful settlement.[181] He also criticizes the U.S.'s close ties with Saudi Arabia and involvement in Saudi Arabian-led intervention in Yemen, highlighting that Saudi Arabia has "one of the most grotesque human rights records in the world".[195]Chomsky called the Russian invasion of Ukraine a criminal act of aggression and noted that Russia was committing major war crimes in the country. He considered support for Ukraine's self-defense legitimate and said Ukraine should be given enough military aid to defend itself, but not enough to cause "an escalation".[196] His criticism of the war focused on the United States.[196] He alleged that the U.S. rejected any compromise with Russia and that this might have provoked the invasion.[196] According to Chomsky, the U.S. was arming Ukraine only to weaken Russia, and Ukrainian requests for heavy weaponry were untrue "Western propaganda", despite Ukraine's President Volodymyr Zelenskyy repeatedly asking for them.[197] More than a year into the invasion, Chomsky argued that Russia was waging the war "more humanely" than the U.S. did the invasion of Iraq.[198]This article is part of a series onAnarchismin the United StatesIdeologiesAnarcho-capitalismAnarcho-pacifismAutarchismChicago ideaGreen anarchismIndividualist anarchismPhilosophical anarchismHistoryCincinnati Time StoreMostGrottkau debateHaymarket affairHomestead strikeAssassination of William McKinleyImmigration Act of 1903Ferrer Center and ColonyImmigration Act of 1918GalleanistiFirst Red Scare1919 bombingsPalmer RaidsSacco and VanzettiLibertarian Book Club and LeagueCounterculture of the 1960sProtests of 1968Battle of SeattleOccupy Wall StreetQilomboCapitol Hill Occupied ProtestPeopleAbbottAlstonAndrewsAppletonAustinBalagoonBariBerkmanBestBiehlBookchinBushnellCarsonChomskyCleyreCornellCzologszDayDixonDolgoffDuffy TurnerEmersonErvinEsteveFieldenFischerGalleaniGoldmanGoodmanGraceGraeberGreeneHahnelHaldeman-JuliusHammondHarmanHeywood (Angela)Heywood (Ezra)HillHoffmanHolmesIngallsKaczynskiKonkinLabadieLinggLloydLumMagnMilsteinMostParsonsPerlmanSaleSchwab (Justus)Schwab (Michael)SolanasSpiesSpoonerThoreauTuckerWaisbrookerWalkerWarrenWilsonWinnWolffZerzanZinnOrganizationsActiveABC No RioAnarcho-Syndicalist ReviewAnti-Racist ActionBeehive Design CollectiveCatholic Worker MovementCommon Ground CollectiveCrimethInc.Curious George BrigadeEarth Liberation FrontIndustrial Workers of the WorldInstitute for Anarchist StudiesInstitute for Social EcologyKate Sharpley LibraryLabadie CollectionMetropolitan Anarchist Coordinating CouncilMOVEPortland Anarchist Road CareProfane ExistenceRed Emma'sRuckus SocietyDefunctCincinnati Time StoreDon't Just Vote, Get ActiveFerrer Center and ColonyGeorge Jackson BrigadeInstitute for Applied AutonomyInternational Working People's AssociationLibertarian Book Club and LeagueNew England Non-Resistance SocietyNew York Social Revolutionary ClubQilomboRight to Existence GroupSpanish CampTenacious Unicorn RanchUnion of Russian WorkersUp Against the Wall MotherfuckerVanguard GroupWhy? GroupYouth International PartyMediaPublicationsAK PressAutonomediaThe BlastCatholic WorkerCronaca SovversivaFifth EstateFree SocietyFreiheitGolos TrudaLibertyLoompanicsMother EarthPM PressRegeneracinVanguardThe WordWorks"Resistance to Civil Government" (1849)"To the Workingmen of America" (1883)Anarchism and Other Essays (1910)Now and After (1929)In Defense of Anarchism (1970)Post-Scarcity Anarchism (1971)"The Abolition of Work" (1986)Industrial Society and Its Future (1995)From Bakunin to Lacan (2001)Understanding Power (2002)Fragments of an Anarchist Anthropology (2004)Direct Action: An Ethnography (2009)Related topicsAmerican LeftAnarchism in Puerto RicoLibertarianism in the U.S.Labor history of the United StatesMinarchismSocialism in the U.S. Anarchism portal Libertarianism portal United States portalvteIn his youth, Chomsky developed a dislike of capitalism and the pursuit of material wealth.[199] At the same time, he developed a disdain for authoritarian socialism, as represented by the MarxistLeninist policies of the Soviet Union.[200] Rather than accepting the common view among U.S. economists that a spectrum exists between total state ownership of the economy and total private ownership, he instead suggests that a spectrum should be understood between total democratic control of the economy and total autocratic control (whether state or private).[201] He argues that Western capitalist countries are not really democratic,[202] because, in his view, a truly democratic society is one in which all persons have a say in public economic policy.[203] He has stated his opposition to ruling elites, among them institutions like the IMF, World Bank, and GATT (precursor to the WTO).[204]Chomsky highlights that, since the 1970s, the U.S. has become increasingly economically unequal as a result of the repeal of various financial regulations and the unilateral rescinding of the Bretton Woods financial control agreement by the U.S.[205] He characterizes the U.S. as a de facto one-party state, viewing both the Republican Party and Democratic Party as manifestations of a single "Business Party" controlled by corporate and financial interests.[206] Chomsky highlights that, within Western capitalist liberal democracies, at least 80% of the population has no control over economic decisions, which are instead in the hands of a management class and ultimately controlled by a small, wealthy elite.[207]Noting the entrenchment of such an economic system, Chomsky believes that change is possible through the organized cooperation of large numbers of people who understand the problem and know how they want to reorganize the economy more equitably.[207] Acknowledging that corporate domination of media and government stifles any significant change to this system, he sees reason for optimism in historical examples such as the social rejection of slavery as immoral, the advances in women's rights, and the forcing of government to justify invasions.[205] He views violent revolution to overthrow a government as a last resort to be avoided if possible, citing the example of historical revolutions where the population's welfare has worsened as a result of upheaval.[207]Chomsky sees libertarian socialist and anarcho-syndicalist ideas as the descendants of the classical liberal ideas of the Age of Enlightenment,[208] arguing that his ideological position revolves around "nourishing the libertarian and creative character of the human being".[209] He envisions an anarcho-syndicalist future with direct worker control of the means of production and government by workers' councils, who would select temporary and revocable representatives to meet together at general assemblies.[210] The point of this self-governance is to make each citizen, in Thomas Jefferson's words, "a direct participator in the government of affairs".[211] He believes that there will be no need for political parties.[212] By controlling their productive life, he believes that individuals can gain job satisfaction and a sense of fulfillment and purpose.[213] He argues that unpleasant and unpopular jobs could be fully automated, specially remunerated, or communally shared.[214]Chomsky has written prolifically about the IsraeliPalestinian conflict, aiming to raise public awareness of it.[215] A labor Zionist who later became what is today considered an anti-Zionist, Chomsky has criticized the Israeli settlements in the Israeli-occupied West Bank, which he likens to a settler colony.[216] He has said that the 1947 United Nations Partition Plan for Palestine was a bad decision, but given the realpolitik of the situation, he has also considered a two-state solution on the condition that the nation-states exist on equal terms.[217]Chomsky has said that characterizing Israel's treatment of the Palestinians as apartheid, similar to the system that existed in South Africa, would be a "gift to Israel", as he has long held that "the Occupied Territories are much worse than South Africa".[218][219] South Africa depended on its black population for labor, but Chomsky argues the same is not true of Israel, which in his view seeks to make the situation for Palestinians under its occupation unlivable, especially in the West Bank and the Gaza Strip, where "atrocities" take place every day.[218] He also argues that, unlike South Africa, Israel has not sought the international community's approval, but rather relies solely on U.S. support.[218] Chomsky has said that the Israeli-led blockade of the Gaza Strip has turned it into a "concentration camp" and expressed fears similar to Israeli intellectual Yeshayahu Leibowitz's 1990s warning that the continued occupation of the Palestinian territories could turn Israeli Jews into "Judeo-Nazis". Chomsky has said that Leibowitz's warning "was a direct reflection of the continued occupation, the humiliation of people, the degradation, and the terrorist attacks by the Israeli government".[220] He has also called the U.S. a violent state that exports violence by supporting Israeli "atrocities" against the Palestinians and said that listening to American mainstream media, including CBS, is like listening to "Israeli propaganda agencies".[221]Chomsky was denied entry to the West Bank in 2010 because of his criticisms of Israel. He had been invited to deliver a lecture at Bir Zeit University and was to meet with Palestinian Prime Minister Salam Fayyad.[222][223][224][225] An Israeli Foreign Ministry spokesman later said that Chomsky was denied entry by mistake.[226]In his 1983 book The Fateful Triangle, Chomsky criticized the Palestine Liberation Organization for its "self-destructiveness" and "suicidal character" and disapproved of its programs of "armed struggle" and "erratic violence". He also criticized the Arab governments as not "decent".[227][228] Given what he has described as his very Jewish upbringing with deeply Zionist activist parents, Chomsky's views have drawn controversy and criticism. They are rooted in the kibbutzim and socialist binational cooperation.[229] In a 2014 interview on Democracy Now!, Chomsky said that the charter of Hamas, which calls for Israel's destruction, "means practically nothing", having been created "by a small group of people under siege, under attack in 1988". He compared it to the electoral program of the Likud party, which, he said, "states explicitly that there can never be a Palestinian state west of the Jordan River. And they not only state it in their charter, that's a call for the destruction of Palestine, explicit call for it".[219]Main article: Propaganda modelExternal videos Chomsky on propaganda and the manufacturing of consent, June 1, 2003Chomsky's political writings have largely focused on ideology, social and political power, mass media, and state policy.[230] One of his best-known works, Manufacturing Consent, dissects the media's role in reinforcing and acquiescing to state policies across the political spectrum while marginalizing contrary perspectives. Chomsky asserts that this version of censorship, by government-guided "free market" forces, is subtler and harder to undermine than was the equivalent propaganda system in the Soviet Union.[231] As he argues, the mainstream press is corporate-owned and thus reflects corporate priorities and interests.[232] Acknowledging that many American journalists are dedicated and well-meaning, he argues that the mass media's choices of topics and issues, the unquestioned premises on which that coverage rests, and the range of opinions expressed are all constrained to reinforce the state's ideology:[233] although mass media will criticize individual politicians and political parties, it will not undermine the wider state-corporate nexus of which it is a part.[234] As evidence, he highlights that the U.S. mass media does not employ any socialist journalists or political commentators.[235] He also points to examples of important news stories that the U.S. mainstream media has ignored because reporting on them would reflect badly upon the country, including the murder of Black Panther Fred Hampton with possible FBI involvement, the massacres in Nicaragua perpetrated by U.S.-funded Contras, and the constant reporting on Israeli deaths without equivalent coverage of the far larger number of Palestinian deaths in that conflict.[236] To remedy this situation, Chomsky calls for grassroots democratic control and involvement of the media.[237]Chomsky considers most conspiracy theories fruitless, distracting substitutes for thinking about policy formation in an institutional framework, where individual manipulation is secondary to broader social imperatives.[238] He separates his Propaganda Model from conspiracy in that he is describing institutions following their natural imperatives rather than collusive forces with secret controls.[239] Instead of supporting the educational system as an antidote, he believes that most education is counterproductive.[240] Chomsky describes mass education as a system solely intended to turn farmers from independent producers into unthinking industrial employees.[240]In the 2004 book The Anti-Chomsky Reader, Peter Collier and David Horowitz accuse Chomsky of cherry-picking facts to suit his theories.[241] Horowitz has also criticized Chomsky's anti-Americanism:[242]For 40 years Noam Chomsky has turned out book after book, pamphlet after pamphlet and speech after speech with one message, and one message alone: America is the Great Satan; it is the fount of evil in the world. In Chomsky's demented universe, America is responsible not only for its own bad deeds, but for the bad deeds of others, including those of the terrorists who struck the World Trade Center and the Pentagon. In this attitude he is the medium for all those who now search the ruins of Manhattan not for the victims and the American dead, but for the "root causes" of the catastrophe that befell them.For the conservative public policy think tank the Hoover Institution, Peter Schweizer wrote in January 2006, "Chomsky favors the estate tax and massive income redistributionjust not the redistribution of his income." Schweizer criticized Chomsky for setting up an estate plan and protecting his own intellectual property as it relates to his published works, as well as the high speaking fees that Chomsky received on a regular basis, around $9,000$12,000 per talk at that time.[243][244]Chomsky has been accused of treating socialist or communist regimes with credulity and examining capitalist regimes with greater scrutiny or criticism:[245]Chomsky's analysis of U.S. actions plunged deep into dark U.S. machinations, but when traveling among the Communists he rested content with appearances. The countryside outside Hanoi, he reported in The New York Review of Books, displayed "a high degree of democratic participation at the village and regional levels." But how could he tell? Chomsky did not speak Vietnamese, and so he depended on government translators, tour guides, and handlers for information. In [Communist] Vietnamese hands, the clear-eyed skepticism turned into willing credulousness.[245]According to Nikolas Kozloff, writing for Al Jazeera in September 2012, Chomsky "has drawn the world's attention to the various misdeeds of the US and its proxies around the world, and for that he deserves credit. Yet, in seeking to avoid controversy at all costs Chomsky has turned into something of an ideologue. Scour the Chomsky web site and you won't find significant discussion of Belarus or Latin America's flirtation with outside authoritarian leaders, for that matter."[246]Political activist George Monbiot has argued that "Part of the problem is that a kind of cult has developed around Noam Chomsky and John Pilger, which cannot believe they could ever be wrong, and produces ever more elaborate conspiracy theories to justify their mistakes."[247]Anarchist and primitivist John Zerzan has accused Chomsky of not being a real anarchist, saying that he is instead "a liberal-leftist politically, and downright reactionary in his academic specialty, linguistic theory. Chomsky is also, by all accounts, a generous, sincere, tireless activistwhich does not, unfortunately, ensure his thinking has liberatory value."[248]Defenders of Chomsky have countered that he has been censored or left out of public debate. Claims of this nature date to the Reagan era. Writing for The Washington Post in February 1988, Saul Landau wrote, "It is unhealthy that Chomsky's insights are excluded from the policy debate. His relentless prosecutorial prose, with a hint of Talmudic whine and the rationalist anarchism of Tom Paine, may reflect a justified frustration."[249]Chomsky has also been active in a number of philosophical fields, including philosophy of mind, philosophy of language, and philosophy of science.[250] In these fields he is credited with ushering in the "cognitive revolution",[250] a significant paradigm shift that rejected logical positivism, the prevailing philosophical methodology of the time, and reframed how philosophers think about language and the mind.[167] Chomsky views the cognitive revolution as rooted in 17th-century rationalist ideals.[251] His positionthe idea that the mind contains inherent structures to understand language, perception, and thoughthas more in common with rationalism than behaviorism.[252] He named one of his key works Cartesian Linguistics: A Chapter in the History of Rationalist Thought (1966).[251] This sparked criticism from historians and philosophers who disagreed with Chomsky's interpretations of classical sources and use of philosophical terminology.[f] In the philosophy of language, Chomsky is particularly known for his criticisms of the notion of reference and meaning in human language and his perspective on the nature and function of mental representations.[253]Chomsky's famous 1971 debate on human nature with the French philosopher Michel Foucault was a symbolic clash of the analytic and continental philosophy traditions, represented by Chomsky and Foucault, respectively.[98] It showed what appeared to be irreconcilable differences between two moral and intellectual luminaries of the 20th century. Foucault held that any definition of human nature is connected to our present-day conceptions of ourselves; Chomsky held that human nature contained universals such as a common standard of moral justice as deduced through reason. [254] Chomsky criticized postmodernism and French philosophy generally, arguing that the obscure language of postmodern, leftist philosophers gives little aid to the working classes.[255] He has also debated analytic philosophers, including Tyler Burge, Donald Davidson, Michael Dummett, Saul Kripke, Thomas Nagel, Hilary Putnam, Willard Van Orman Quine, and John Searle.[167]Chomsky's contributions span intellectual and world history, including the history of philosophy.[256] Irony is a recurring characteristic of his writing, such as rhetorically implying that his readers already know something to be true, which engages the reader more actively in assessing the veracity of his claims. [257]Wasserman and Chomsky in 2014Chomsky endeavors to separate his family life, linguistic scholarship, and political activism from each other.[258] An intensely private person,[259] he is uninterested in appearances and the fame his work has brought him.[260] McGilvray suggests that Chomsky is not motivated by a desire for fame, but impelled to tell what he perceives as the truth and a desire to aid others in doing so.[261] Chomsky acknowledges that his income affords him a privileged life compared to the majority of the world's population;[262] nevertheless, he characterizes himself as a "worker", albeit one who uses his intellect as his employable skill.[263] He reads four or five newspapers daily; in the U.S., he subscribes to The Boston Globe, The New York Times, The Wall Street Journal, Financial Times, and The Christian Science Monitor.[264] Chomsky is not religious but has expressed approval of forms of religion such as liberation theology.[265]Chomsky is known to use charged language ("corrupt", "fascist", "fraudulent") when describing established political and academic figures, which can polarize his audience but is in keeping with his belief that much scholarship is self-serving.[266] His colleague Steven Pinker has said that Chomsky "portrays people who disagree with him as stupid or evil, using withering scorn in his rhetoric", and that this contributes to the extreme reactions he receives.[267] Chomsky avoids academic conferences, including left-oriented ones such as the Socialist Scholars Conference, preferring to speak to activist groups or hold university seminars for mass audiences.[268] His approach to academic freedom has led him to support MIT academics whose actions he deplores; in 1969, when Chomsky heard that Walt Rostow, a major architect of the Vietnam war, wanted to return to work at MIT, Chomsky threatened "to protest publicly" if Rostow were denied a position at MIT. In 1989, when Pentagon adviser John Deutch applied to be president of MIT, Chomsky supported his candidacy. Later, when Deutch became head of the CIA, The New York Times quoted Chomsky as saying, "He has more honesty and integrity than anyone I've ever met.... If somebody's got to be running the CIA, I'm glad it's him."[269]Chomsky was married to Carol Doris (neSchatz) from 1949 until her death in 2008.[263] They had three children together: Aviva (b. 1957), Diane (b. 1960), and Harry (b. 1967).[270] In 2014, Chomsky married Valeria Wasserman.[271] They have owned a home in Wasserman's native country, Brazil, since 2015.[272] Judith Chomsky and Marvin J. Chomsky are cousins of Noam Chomsky.In 2023, Chomsky suffered a massive stroke and was flown to a hospital in So Paulo, Brazil, to recuperate.[273] He can no longer walk or communicate, making his return to public life improbable,[274] but he continues to follow current events such as the Gaza war.[273] He was discharged in June 2024 to continue his recovery at home.[272] The same month, Chomsky trended on social media amid false reports of his death. Periodicals retracted premature obituaries.[272][Chomsky's] voice is heard in academia beyond linguistics and philosophy: from computer science to neuroscience, from anthropology to education, mathematics and literary criticism. If we include Chomsky's political activism then the boundaries become quite blurred, and it comes as no surprise that Chomsky is increasingly seen as enemy number one by those who inhabit that wide sphere of reactionary discourse and action.Sperlich, 2006[275]Chomsky has been a defining Western intellectual figure, central to the field of linguistics and definitive in cognitive science, computer science, philosophy, and psychology.[276] In addition to being known as one of the most important intellectuals of his time,[g] Chomsky has a dual legacy as a leader and luminary in both linguistics and the realm of political dissent.[277] Despite his academic success, his political viewpoints and activism have resulted in his being distrusted by mainstream media, and he is regarded as being "on the outer margin of acceptability".[278] Chomsky's public image and social reputation often color his work's public reception.[8]McGilvray observes that Chomsky inaugurated the "cognitive revolution" in linguistics,[279] and that he is largely responsible for establishing the field as a formal, natural science,[280] moving it away from the procedural form of structural linguistics dominant during the mid-20th century.[281] As such, some have called Chomsky "the father of modern linguistics".[b] Linguist John Lyons further remarked that within a few decades of publication, Chomskyan linguistics had become "the most dynamic and influential" school of thought in the field.[282] By the 1970s his work had also come to exert a considerable influence on philosophy,[283] and a Minnesota State University Moorhead poll ranked Syntactic Structures as the single most important work in cognitive science.[284] In addition, his work in automata theory and the Chomsky hierarchy have become well known in computer science, and he is much cited in computational linguistics.[285][286] [287]Chomsky's criticisms of behaviorism contributed substantially to the decline of behaviorist psychology;[288] in addition, he is generally regarded as one of the primary founders of the field of cognitive science.[289][250] Some arguments in evolutionary psychology are derived from his research results;[290] Nim Chimpsky, a chimpanzee who was the subject of a study in animal language acquisition at Columbia University, was named after Chomsky in reference to his view of language acquisition as a uniquely human ability.[291]ACM Turing Award winner Donald Knuth credited Chomsky's work with helping him combine his interests in mathematics, linguistics, and computer science.[292] IBM computer scientist John Backus, another Turing Award winner, used some of Chomsky's concepts to help him develop FORTRAN, the first widely used high-level computer programming language.[293] Chomsky's theory of generative grammar has also influenced work in music theory and analysis, such as Fred Lerdahl's and Ray Jackendoff's generative theory of tonal music.[294][295][296]Chomsky is among the most cited authors living or dead.[h] He was cited within the Arts and Humanities Citation Index more often than any other living scholar from 1980 to 1992.[297] Chomsky was also extensively cited in the Social Sciences Citation Index and Science Citation Index during the same period. The librarian who conducted the research said that the statistics show that "he is very widely read across disciplines and that his work is used by researchers across disciplines... it seems that you can't write a paper without citing Noam Chomsky."[276] As a result of his influence, there are dueling camps of Chomskyan and non-Chomskyan linguistics. Their disputes are often acrimonious.[298] Additionally, according to journalist Maya Jaggi, Chomsky is among the most quoted sources in the humanities, ranking alongside Marx, Shakespeare and the Bible.[267]Chomsky cautions against ignoring the threats of climate change and nuclear war in the wake of Donald Trump's election, in a 2017 speech.Chomsky's status as the "most-quoted living author" is credited to his political writings, which vastly outnumber his writings on linguistics.[299] Chomsky biographer Wolfgang B. Sperlich characterizes him as "one of the most notable contemporary champions of the people";[259] journalist John Pilger has described him as a "genuine people's hero; an inspiration for struggles all over the world for that basic decency known as freedom. To a lot of people in the marginsactivists and movementshe's unfailingly supportive."[267] Arundhati Roy has called him "one of the greatest, most radical public thinkers of our time",[300] and Edward Said thought him "one of the most significant challengers of unjust power and delusions".[267] Fred Halliday has said that by the start of the 21st century Chomsky had become a "guru" for the world's anti-capitalist and anti-imperialist movements.[267] The propaganda model of media criticism that he and Herman developed has been widely accepted in radical media critiques and adopted to some level in mainstream criticism of the media,[301] also exerting a significant influence on the growth of alternative media, including radio, publishers, and the Internet, which in turn have helped to disseminate his work.[302]Despite this broad influence, university departments devoted to history and political science rarely include Chomsky's work on their undergraduate syllabi.[303] Critics have argued that despite publishing widely on social and political issues, Chomsky has no formal expertise in these areas; he has responded that such issues are not as complex as many social scientists claim and that almost everyone is able to comprehend them regardless of whether they have been academically trained to do so.[182] Some have responded to these criticisms by questioning the critics' motives and their understanding of Chomsky's ideas. Sperlich, for instance, says that Chomsky has been vilified by corporate interests, particularly in the mainstream press.[136] Likewise, according to McGilvray, many of Chomsky's critics "do not bother quoting his work or quote out of context, distort, and create straw men that cannot be supported by Chomsky's text".[182]Chomsky drew criticism for not calling the Bosnian War's Srebrenica massacre a "genocide".[304][305] While he did not deny the fact of the massacre,[306] which he called "a horror story and major crime", he felt the massacre did not meet the definition of genocide.[304] Critics have accused Chomsky of denying the Bosnian genocide.[307]Chomsky's far-reaching criticisms of U.S. foreign policy and the legitimacy of U.S. power have raised controversy. A document obtained pursuant to a Freedom of Information Act (FOIA) request from the U.S. government revealed that the Central Intelligence Agency (CIA) monitored his activities and for years denied doing so. The CIA also destroyed its files on Chomsky at some point, possibly in violation of federal law.[308] He has often received undercover police protection at MIT and when speaking on the Middle East but has refused uniformed police protection. [309] German news magazine Der Spiegel described Chomsky as "the Ayatollah of anti-American hatred",[136] while American conservative commentator David Horowitz called him "the most devious, the most dishonest and... the most treacherous intellect in America", whose work is infused with "anti-American dementia" and evidences his "pathological hatred of his own country".[310]Chomsky's criticism of Israel has led to his being called a traitor to the Jewish people and an anti-Semite.[311] Criticizing Chomsky's defense of the right of individuals to engage in Holocaust denial on the grounds that freedom of speech must be extended to all viewpoints, Werner Cohn called Chomsky "the most important patron" of the neo-Nazi movement.[312] The Anti-Defamation League (ADL) called him a Holocaust denier,[313] describing him as a "dupe of intellectual pride so overweening that he is incapable of making distinctions between totalitarian and democratic societies, between oppressors and victims".[313] In turn, Chomsky has

claimed that the ADL is dominated by "Stalinist types" who oppose democracy in Israel.[311] The lawyer Alan Dershowitz has called Chomsky a "false prophet of the left";[314] Chomsky called Dershowitz "a complete liar" who is on "a crazed jihad, dedicating much of his life to trying to destroy my reputation".[315] In early 2016, President Recep Tayyip Erdoan of Turkey publicly rebuked Chomsky after he signed an open letter condemning Erdoan for his anti-Kurdish repression and double standards on terrorism.[316] Chomsky accused Erdoan of hypocrisy, noting that Erdoan supports al-Qaeda's Syrian affiliate,[317] the al-Nusra Front.[316]See also: List of honorary degrees awarded to Noam ChomskyChomsky receiving an award from the president of the Nuclear Age Peace Foundation, David Krieger (2014)In 1970, the London Times named Chomsky one of the "makers of the twentieth century".[145] He was voted the world's leading public intellectual in The 2005 Global Intellectuals Poll jointly conducted by American magazine Foreign Policy and British magazine Prospect.[318] New Statesman readers listed Chomsky among the world's foremost heroes in 2006.[319] In 2011, the US Peace Memorial Foundation awarded The US Peace Prize to Chomsky, "whose antiwar activities for five decades both educate and inspire."[320]In the United States he is a Member of the National Academy of Sciences, the American Academy of Arts and Sciences, the Linguistic Society of America, the American Association for the Advancement of Science, the American Philosophical Association,[321] and the American Philosophical Society.[322] Abroad he is a corresponding fellow of the British Academy, an honorary member of the British Psychological Society, a member of the Deutsche Akademie der Naturforscher Leopoldina,[321] and a foreign member of the Department of Social Sciences of the Serbian Academy of Sciences and Arts.[323] He received a 1971 Guggenheim Fellowship, the 1984 American Psychological Association Award for Distinguished Contributions to Psychology, the 1988 Kyoto Prize in Basic Sciences, the 1996 Helmholtz Medal,[321] the 1999 Benjamin Franklin Medal in Computer and Cognitive Science,[324] the 2010 Erich Fromm Prize,[325] and the British Academy's 2014 Neil and Saras Smith Medal for Linguistics.[326] He is also a two-time winner of the NCTE George Orwell Award for Distinguished Contribution to Honesty and Clarity in Public Language (1987 and 1989).[321] He has also received the Rabindranath Tagore Centenary Award from The Asiatic Society.[327]Chomsky received the 2004 Carl-von-Ossietzky Prize from the city of Oldenburg, Germany, to acknowledge his body of work as a political analyst and media critic.[328] He received an honorary fellowship in 2005 from the Literary and Historical Society of University College Dublin.[329] He received the 2008 President's Medal from the Literary and Debating Society of the National University of Ireland, Galway.[330] Since 2009, he has been an honorary member of International Association of Professional Translators and Interpreters (IAPTI).[331] He received the University of Wisconsin's A.E. Havens Center's Award for Lifetime Contribution to Critical Scholarship[332] and was inducted into IEEE Intelligent Systems' AI's Hall of Fame for "significant contributions to the field of AI and intelligent systems."[333] Chomsky has an Erds number of four.[334]In 2011, the US Peace Memorial Foundation awarded Chomsky the US Peace Prize for anti-war activities over five decades.[335] For his work in human rights, peace, and social criticism, he received the 2011 Sydney Peace Prize,[336] the Sretenje Order in 2015,[337] the 2017 Sen MacBride Peace Prize[338] and the Dorothy Eldridge Peacemaker Award.[324]Chomsky has received honorary doctorates from institutions including the University of London and the University of Chicago (1967), Loyola University Chicago and Swarthmore College (1970), Bard College (1971), Delhi University (1972), the University of Massachusetts (1973), and the International School for Advanced Studies (2012).[96] Public lectures given by Chomsky include the 1969 John Locke Lectures,[324] 1975 Whidden Lectures,[97] 1977 Huizinga Lecture, and 1988 Massey Lectures.[324]Various tributes to Chomsky have been dedicated over the years. He is the eponym for a bee species,[339] a frog species,[340] an asteroid,[341] and a building complex at the Indian university Jamia Millia Islamia.[342] Actor Viggo Mortensen and avant-garde guitarist Buckethead dedicated their 2003 album Pandemoniumfromamerica to Chomsky.[343]Main article: Noam Chomsky bibliography and filmographyLinguisticsSyntactic Structures (1957)Current Issues in Linguistic Theory (1964)Aspects of the Theory of Syntax (1965)Cartesian Linguistics (1965)Language and Mind (1968)The Sound Pattern of English with Morris Halle (1968)Reflections on Language (1975)Lectures on Government and Binding (1981)The Minimalist Program (1995)PoliticsAmerican Power and the New Mandarins (1969)For Reasons of State (1973)Counter-Revolutionary Violence: Bloodbaths in Fact & Propaganda with Edward S. Herman (1973)The Political Economy of Human Rights (1979)Towards a New Cold War (1982)The Fateful Triangle (1983)Pirates and Emperors (1986)Manufacturing Consent (1988)Necessary Illusions (1989)Deterring Democracy (1991)Letters from Lexington (1993)The Prosperous Few and the Restless Many (1993)World Orders Old and New (1994)Objectivity and Liberal Scholarship (1997)Profit over People (1999)9-11 (2001)Understanding Power (2002)Middle East Illusions (2003)Hegemony or Survival (2003)Getting Haiti Right This Time (2004)Imperial Ambitions (2005)Failed States: The Abuse of Power and the Assault on Democracy (2006)Interventions (2007)Gaza in Crisis (2010)How the World Works (2011)Making the Future (2012)Occupy (2012)Requiem for the American Dream (2017)The Withdrawal (2022)Anarchism in the United StatesAmerican philosophyList of linguistsList of peace activistsList of pioneers in computer scienceTheory of language^ Pronounced /nom tmski/ nohm CHOM-skee^ a b Fox 1998: "Mr. Chomsky... is the father of modern linguistics and remains the field's most influential practitioner."Tymoczko & Henle 2004, p.101: "As the founder of modern linguistics, Noam Chomsky, observed, each of the following sequences of words is nonsense..."Tanenhaus 2016: "At 87, Noam Chomsky, the founder of modern linguistics, remains a vital presence in American intellectual life."^ Smith 2004, pp.107 "Chomsky's early work was renowned for its mathematical rigor and he made some contribution to the nascent discipline of mathematical linguistics, in particular the analysis of (formal) languages in terms of what is now known as the Chomsky hierarchy."Koerner 1983, pp.159: "Characteristically, Harris proposes a transfer of sentences from English to Modern Hebrew... Chomsky's approach to syntax in Syntactic Structures and several years thereafter was not much different from Harris's approach, since the concept of 'deep' or 'underlying structure' had not yet been introduced. The main difference between Harris (1954) and Chomsky (1957) appears to be that the latter is dealing with transfers within one single language only"^ Koerner 1978, pp.41f: "it is worth noting that Chomsky cites Hjelmslev's Prolegomena, which had been translated into English in 1953, since the authors' theoretical argument, derived largely from logic and mathematics, exhibits noticeable similarities."Seuren 1998, pp.166: "Both Hjelmslev and Harris were inspired by the mathematical notion of an algorithm as a purely formal production system for a set of strings of symbols.... it is probably accurate to say that Hjelmslev was the first to try and apply it to the generation of strings of symbols in natural language"Hjelmslev 1969 Prolegomena to a Theory of Language. Danish original 1943; first English translation 1954.^ Macintyre 2010Burris 2013: "Noam Chomsky has built his entire reputation as a political dissident on his command of the facts."McNeill 2014: "[Chomsky is] often dubbed one of the world's most important intellectuals and its leading public dissident..."^ Hamans & Seuren 2010, p.377: "Having achieved a unique position of supremacy in the theory of syntax and having exploited that position far beyond the narrow circles of professional syntacticians, he felt the need to shore up his theory with the authority of history. It is shown that this attempt, resulting mainly in his Cartesian Linguistics of 1966, was widely, and rightly, judged to be a radical failure"^ McNeill 2014: "[Chomsky is] often dubbed one of the world's most important intellectuals..."Campbell 2005: "Noam Chomsky, the linguistics professor who has become one of the most outspoken critics of US foreign policy, has won a poll that names him as the world's top public intellectual."Robinson 1979: "Judged in terms of the power, range, novelty and influence of his thought, Noam Chomsky is arguably the most important intellectual alive today."Flint 1995: "The man once called the most important intellectual alive keeps his office in... the campus of the Massachusetts Institute of Technology."^ Knight 2016, p.2: "In 1992, the Arts and Humanities Citation Index ranked him as the most cited person alive (the Index's top ten being Marx, Lenin, Shakespeare, Aristotle, the Bible, Plato, Freud, Chomsky, Hegel and Cicero)."Babe 2015, p.xvii: "[Chomsky] was the most cited living scholar between 1980 and 1992 (according to the Arts and Humanities Citation Index)."^ a b Chomsky 1991, p.50.^ Sperlich 2006, pp.4445.^ Slife 1993, p.115.^ Barsky 1997, p.58.^ Antony & Hornstein 2003, p.295.^ Chomsky 2016.^ Harbord 1994, p.487.^ a b c d e f Barsky 2007, p.107.^ Smith 2004, p.185.^ a b Amid the Philosophers.^ Persson & LaFollette 2013.^ Prickett 2002, p.234.^ Searle 1972.^ a b c d e Adams 2003.^ Gould 1981.^ "Kyle Kulinski Speaks, the Bernie Bros Listen". 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So you blame the victims. Leibowitz's warning was a direct reflection of the continued occupation, the humiliation of people, the degradation, and the terrorist attacks by the Israeli government. We have many historical examples of that. Europe has plenty of them. And I think that's what you are seeing in Israel," he explained.^ "Noam Chomsky: Israeli Apartheid 'Much Worse' Than South Africa". IMEMC. August 20, 2015. Retrieved December 15, 2023.^ Pilkington 2010.^ Bronner 2010.^ Al Jazeera 2010.^ Democracy Now! 2010.^ Kalman 2014.^ Said, Edward (February 16, 1984). "Permission to narrate". London Review of Books. 06 (3). Retrieved January 18, 2024.^ Said, Edward (1984). "Permission to Narrate". Journal of Palestine Studies. 13 (3): 2748. doi:10.2307/2536688. ISSN0377-919X. JSTOR2536688.^ Rich, Melanie S. (December 16, 2008), "10. 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