

Boudon Reexamined

Nuts and Bolts for Contemporary Sociological Science

Gianluca Manzo (Ed.)



Boudon Reexamined presents a selection of short essays by leading scholars from several generations who critically engage and enter into dialogue with the work of Raymond Boudon. Each chapter focuses on a specific topic from his extensive writings. Readers will follow this intellectual trajectory through analyses of early correspondence with Lazarsfeld and Merton, his typology of sociological styles, and his contributions to contemporary analytical sociology, including the notion of middle-range theory. In addition to already well-discussed aspects of Boudon's work, namely his understanding of methodological individualism and the theory of ordinary rationality, the book also explores less frequently discussed topics, including his early interest in formal modeling in sociology and his understanding of the link between interdependence structures and social change. Included in the following pages are new assessments of Boudon's well-known analyses of the inequality of educational opportunity and intergenerational social mobility, as well as his lesser-known substantive contributions to the study of relative deprivation and his early dialogue with game theory. The book also outlines Boudon's study of classical authors, especially Tocqueville, before two final chapters conclude by examining how Boudon's works can be used to teach sociology at the undergraduate and master's levels. Our hope is that *Boudon Reexamined* provides readers with a fresh assessment of his legacy – how his work can be applied to conduct theoretical and empirical research in contemporary sociology, as well as to promote high-quality scientific standards for new generations.

Gianluca Manzo is Professor of Sociology at Sorbonne University and a Fellow of the European Academy of Sociology. His research applies computational models and social network analysis to the study of social stratification and diffusion dynamics. He is the author of *La Spirale des inégalités* (PUPS, 2009) and of *Agent-based Models and Causal Inference* (Wiley, 2022). He also edited *Analytical Sociology: Actions and Networks* (Wiley, 2014) and the *Research Handbook on Analytical Sociology* (Edward Elgar, 2021). More information is available on his webpage: www.gemass.fr/member/manzo-gianluca/.



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Chapter 12

Boudon and the Extraterrestrials. A Generative Model of the Emergence of a Religion

Jörg Stolz

ISBN : 979-10-231-5279-1



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du social

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The great books of the sociological tradition are either works of theory and epistemology or empirical studies structured by a profound theoretical or epistemological reflection. Émile Durkheim's first three books, *The Division of Labour in Society*, *The Rules of Sociological Method*, and *Suicide*, each fall into one of these three categories. This heritage represents an impressive growing legacy of authors and works that foster an understanding of social life through the formation of new concepts, models, and interpretations, thereby providing a pathway to deciphering the thickness and chaotic nature of human societies.

Gianluca Manzo (Ed.)

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for Contemporary Sociological Science

SORBONNE UNIVERSITÉ PRESSES
Paris

With the support of Sorbonne University
and of the Fondation Simone et Cino Del Duca – Institut de France.

Sorbonne Université Presses is the publishing house of Sorbonne University,
affiliated with the Faculty of Arts and Humanities.

© Sorbonne Université Presses, 2025
Print version ISBN: 979-10-231-4019-4
Epub ISBN: 979-10-231-4587-8
Full pdf ISBN: 979-10-231-4588-5

Page layout: Laurent TOURNIER
PDF: Emmanuel Marc DUBOIS/3d2s

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BOUDON AND THE EXTRATERRESTRIALS.
A GENERATIVE MODEL
OF THE EMERGENCE OF A RELIGION

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The emergence of new religions remains poorly understood, partly due to the lack of detailed historical data on their earliest stages. Festinger et al.'s seminal book *When Prophecy Fails* is a counterexample. This book provides a very detailed ethnographic account of the unplanned emergence of a small UFO religion, including the formation of supernatural beliefs, rituals, and leadership structures.

This paper asks how this new religion could emerge in an unplanned way so quickly. This process includes several *astounding facts* in the sense described by Boudon (1976): First, the leaders do not set out to create a new religion, yet within just six months, a religion emerges, complete with beliefs, rituals, and norms; second, the extraterrestrial messages are often vague and unclear, yet the resulting religion develops into a relatively well-structured system; third, the group's prophecies and predictions invariably fail, yet rather than leading to the group's immediate collapse, these failures often spur further ideological development; fourth, despite the fact that the group has successfully created a religion, it does disintegrate.

The central question I address is: What social mechanisms enabled the unplanned emergence and subsequent disintegration of this small religion? I define social mechanisms as typical causal relationships that operate within one or more social games (Stolz 2023).¹ Furthermore, I conceptualise religions as social games of exchange with supernatural players (a definition elaborated further below).

I thank Gianluca Manzo, Richard Breen, Andreas Diekmann, David Voas, Lukas Spinner, and Denise Hafner Stolz for their helpful suggestions and critique. All remaining possible errors are mine.

¹ For a discussion of different definitions of “mechanism”, see Hedström (2005), Manzo (2014).

To address my research question, I develop a generative model in the Boudonian tradition – namely, a dynamic model that explains the phenomenon (explanandum) using simple assumptions and mechanisms (Boudon 1979, 1981).² Unlike statistical models, such models have the form of games in which simplified players conjointly create an emergent outcome (Manzo 2007). My model takes the form of an improvisational game between leaders and followers, aimed at establishing communication with a supernatural player.³ Drawing on literature from theatre improvisation, I identify the rules and techniques that inform the model. The central argument of this paper is that some religious groups employ techniques similar to those used in theatrical improvisation, albeit in a latent way.

To the best of my knowledge, this is the first theoretical attempt to model the unplanned emergence of religion in this manner. The paper makes three key contributions: first, it introduces a novel model to explain the unplanned cultural evolution of religious groups; second it proposes a mechanism, which underpins cultural improvisation more broadly; and third it advances theoretical understanding of the Brotherhood case described by Festinger et al. (2008 [1956]).

Note that I use the book *When Prophecy Fails* in an unusual way. Festinger et al. (2008 [1956]) examined the Brotherhood, a small UFO group that incorrectly predicted the end of the world, with an interest in cognitive dissonance. The large literature following this publication is concerned with testing Festinger et al.'s theory that failed prophecies will lead to increased evangelizing. This research has led to a significant number of disconfirmations of the theory (for

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- 2 Using such models, the researcher in a first step presents a simple model that is able to recreate the *astounding facts*; in a second step, it has to be shown that the supposed mechanisms actually played a role in the case to be explained. It is in part for this technique of seeking out puzzles in the social world and constructing simple game-like models that produce the puzzling phenomenon as their outcome that Boudon has become famous (1976, 1981, 1982; Hauser 1976). In a famous exchange with Hauser (1976), Boudon (1976) writes: "Given my objective, that is, to answer a number of questions of the why type, I came to the idea of building a model roughly describing the basic mechanisms responsible for educational and social inequality, to see whether it generated the 'paradoxical' outcomes some of which are listed above." For a discussion of rational models as explanatory tools, see Raub (2020).
 - 3 Such models can be seen as games that players may play, but do not necessarily have to take the form of economic game theory (Stolz 2023). For an introduction to economic game theory, see Kreps (1990), Gibbons (1992b). For game theory in sociology, see Breen (2009). For an analysis of the improvisational creation of narrative in children's play see Sawyer (2002). I thank Gianluca Manzo for pointing the Sawyer reference out to me.

overviews, see Johnson 2011; Dawson 1999; Melton 1985).⁴ My paper, on the other hand, is concerned with the question of how new religions may appear in an unplanned way, seeing the Brotherhood as an especially well-documented test case.

Although this paper focuses on the evolution of religion, it does not engage with the literature on the long-term evolution of religion over the course of human history. Instead, it addresses how evolutionary mechanisms, such as variation and selection, can shape specific religions over relatively short periods.⁵

THE CASE: THE BROTHERHOOD AND THEIR SCIENTIFIC OBSERVERS

The case of the Brotherhood, which formed around Dorothy Martin and Charles Laughead, was first described by Festinger et al. (2008 [1956]).⁶ The group comprised approximately 20 to 30 members, excluding the scientific observers, and operated in two locations: Oak Park, Illinois, where Martin lived (called Lake City in the book), and East Lansing, Michigan, where Laughead resided (referred to as Collegeville in Festinger's account) (Jenkins 2013). The group existed for roughly 7 to 8 months.

Dorothy Martin, referred to as Marian Keech in Festinger's book, was a housewife with a substantial background in holistic practices. In the spring of 1954, she began practicing automatic writing. Initially, she claimed to receive messages from her deceased father, but she soon became convinced

4 In my view, this literature has clearly shown that Festinger et al.'s thesis must be rejected - and did not work already for the Brotherhood themselves. Cults that fail with their apocalyptic prophecy (in the sense that the world does not end) may, but most often do not, react with increased evangelizing (Dawson 1999). And the Brotherhood themselves were faced not with one but with many failed predictions - to which they reacted with a host of different strategies, evangelizing being only one of them (and not the most important) (Tumminia 2005).

5 For a discussion of different types of theories of evolution in the social sciences, see Diekmann (2004).

6 In Festinger et al.'s book (2008 [1956]), Dorothy Martin was given the pseudonym Marian Keech and the co-leader, Charles Laughead, was labelled Dr. Armstrong. In this paper, I use the real names of the people and places involved as described in Clark (2007) and Jenkins (2013). Additional information on the case, its historical background and the continuing fate of Dorothy Martin (who later called herself Sister Thedra) and the Laughead couple is given in Clark (2007). There are current spiritual entrepreneurs who work in the continuity of Dorothy Martin. See for example Alexandriah Stahr who acknowledges her indebtedness to Sister Thedra, <https://www.star-essence.org/about/lord-sananda-and-sister-thedra>, accessed on July 7, 2025.

that extraterrestrial beings were contacting her. A small group of individuals became interested in her claims and assisted her in typing the messages. Doctor Charles Laughead, a medical doctor employed at Michigan State University, led a student group focused on UFOs (referred to as The Seekers). In the spring of 1955, Charles Laughead and his wife reached out to Dorothy Martin due to their interest in her messages. The couple's close collaboration with Martin led to the emergence of the Brotherhood and the informal integration of the Seekers into the overall group.

222 Leon Festinger, Henry W. Riecken, and Stanley Schachter, all social psychologists with a keen interest in cognitive dissonance, came across an article about a group predicting the imminent end of the world. Recognizing a unique opportunity to study cognitive dissonance in action, they joined the group as covert participants and enlisted two student observers to assist them. The period of observation lasted from November 19 to December 27, 1955. However, the researchers were able to reconstruct events from the preceding months through accounts and documents provided by group members.

The group experienced not just one but a series of failed prophecies. Some of the most notable examples include: on July 23, the aliens were expected to land in a nearby field. Between December 17 and 20, the aliens were predicted to arrive on three separate occasions to collect the believers. On December 21, the cataclysm was supposed to occur, and on December 24, the aliens were anticipated to appear during a carol-singing event. However, the aliens never arrived, and the cataclysm failed to materialise. These disappointments normally led to interesting new cultural elements of the group's ideology. It is this fact that we will analyse in depth in this article.

A GENERATIVE MODEL OF THE EMERGENCE OF A RELIGION

RELIGIONS AS SOCIAL GAMES WITH SUPERNATURAL PLAYERS

Social games. For our analysis of the Brotherhood, we start out with a newly formulated general theory of social games (Stolz 2023). The theory of social games analyses social life as a multitude of interacting social games. A social game is a form of organization of the social sphere in which players engage in actions, which are shaped by resources and goals, rules and sanctions, as well as symbols and meanings. The social game creates game space, game time, and leads to game outcomes. The game takes place in a context. For example, the theory of social games analyses conversations, ping pong clubs, criminal gangs, large organizations, or countries as social games. In contrast to other theories, the theory of social games claims that every game action is always influenced

by resource-goal, rule-sanction, and representation-meaning considerations. For example, the action of playing “Rock” in Rock-Paper-Scissors is played with the goal of winning (resource-goal dimension), it is following the rule that only three actions are possible (rule-sanction dimension), and it consists of making a fist that represents a “Rock” (representation-meaning dimension). The theory claims to be more straightforward and to have a clearer link to empirical research than other grand theories. It incorporates economic game theory for the purpose of modelling the deep structure of games, but claims to be especially useful for empirical, qualitative, and quantitative research (Stolz and Lindemann 2019).⁷

Religions: Social games with supernatural players. Religions can be reconceptualised as social games that incorporate supernatural players (Figure 1). These supernatural players—referred to as Gods, spirits, angels, devils, and similar entities—are fundamentally different from regular players. They are believed to possess significant powers to influence human life. As a result, humans engage in various forms of exchange with these players, such as offering sacrifices, praying, (dis)obeying, and expecting rewards or punishments in return. Often, specialists like priests, shamans, or prophets emerge, claiming expertise in interacting with these supernatural players. From the perspective of social game theory, supernatural players are representations within the game—imagined entities that gain a social existence only to the extent that the group participates in the religious game. Note that the fact that religious games generate their own Gods, remains latent. The group believes in the independent existence of its God.⁸

The Brotherhood as a religion. In a very short time, The Brotherhood had come up with a social form that can be interpreted as a religious game as defined above. Let us look at some of its components:

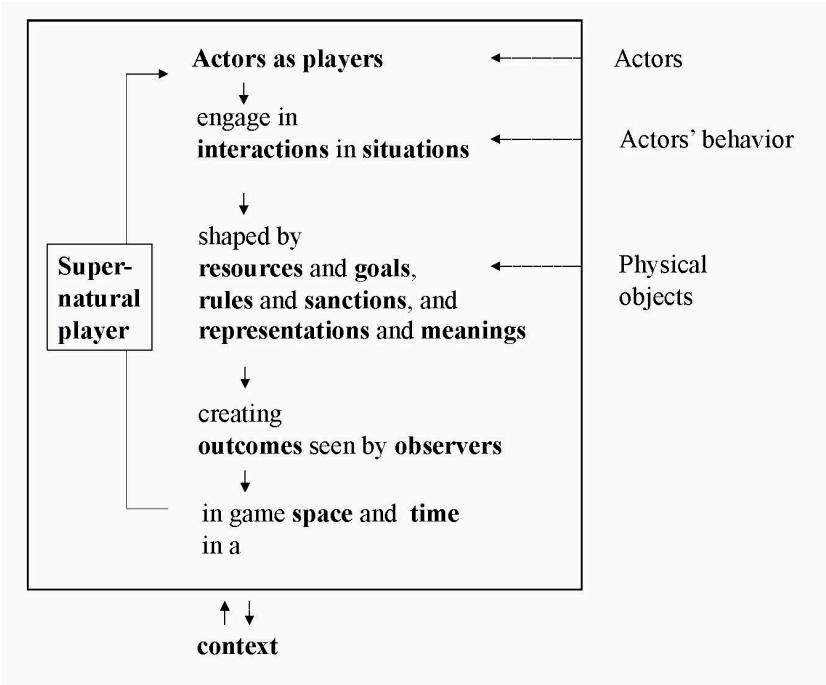
The rituals or *game-actions and -interactions* of the Brotherhood consisted of “sitting for messages,” which involved the group gathering for sessions of automatic writing to receive teachings and directives from the supernatural entities Sananda or the Creator. Members could also participate in the reading of previously received messages or individually “sit for messages” when seeking advice on personal problems.

The overarching *goals* of the Brotherhood game included spiritual growth, attaining more “light” and “inner knowing,” and achieving a “higher density”

7 I do not have space to explain the differences between social game theory and economic game theory more extensively, but plan to do this in further publications.

8 Historically, humanity took a long time to recognise this phenomenon. This insight became a central theme of the Enlightenment and its aftermath, with Ludwig Feuerbach (1983 [1843]) being a pivotal figure in exposing this latent process.

Figure 1: Religion - Social Games With Supernatural Players



Note: The arrows pointing into the rectangle signify that the game transforms actors into players, actors' behaviour into game actions and physical objects into game resources. The arrows inside the rectangle point to the fact that games are recursive.

with the guidance of extraterrestrial beings. Another significant aim was to be saved and transported aboard a spaceship before the anticipated cataclysm.

Membership in the Brotherhood required adherence to several informal *rules*. Members were expected to believe in the messages received by Dorothy Martin and avoid critical thinking or questioning. Commitment was demonstrated through regular attendance at meetings and the execution of instructions from the messages, such as spreading light, fasting, abandoning work, or relocating to live with Martin. Members are also encouraged to refrain from smoking and consuming meat.⁹

The group shared a set of *beliefs* or *symbolic representations* centred around supernatural players. According to their worldview, the universe contained numerous planets, including "Clarion" in the "constellation of Cerus," as well as a universal school called "the Losolo", inhabited by advanced, human-like beings

9 Page numbers in the Festinger et al.'s book are in the following given without every time citing the author and year information.

known as the “Guardians”. The leader of these beings was called “Sananda”. According to the group’s beliefs, Sananda and his allies had for a long time been engaged in a cosmic battle against “Lucifer and the scientists”, a struggle that extended to Earth. Through Dorothy Martin and the “Brotherhood”, Sananda and his allies communicate with humanity, offering warnings and guidance.

One of the group’s core beliefs was tied to an impending global catastrophe predicted to occur in December 1955. This event, involving a massive earthquake and flood, was expected to devastate the earth. However, shortly before the catastrophe, spaceships – referred to as “tola” or “avagada” – were expected to arrive to rescue the group members. The group also employed a unique *terminology*. For instance, “Beleis” meant “hello,” “scice” referred to “the one in disguise,” “lear” denoted an “earthbody,” and “inner knowing” signified “conviction guided by the aliens.” The phrase “I left my hat at home” served as a password for gaining access to the spaceship.

This fully formed religion was created in only six to seven months. Readers familiar with the literature on UFO religions from the 1950s will recognise many of the Brotherhood’s themes as recurring motifs in the broader UFO or abductee milieu.

However, Dorothy Martin and her followers have crafted a distinct new religion by weaving these familiar elements into a narrative uniquely tailored to the individuals making up the Brotherhood. To understand how this was possible, we now turn to ideas from theatre games.

THEATRE GAMES AND THE EMERGENCE OF NEW IMAGINARY WORLDS

Theatre improvisers use simple yet powerful techniques to swiftly create new imaginary worlds (Johnstone 1981). For spectators witnessing skilled theatre improvisation for the first time, the experience can be astonishing—how do performers spontaneously craft intricate stories with characters, plot twists, and engaging narratives? The secret lies in a set of fundamental rules that guide improvisers, encapsulated in the acronym AIJR: Accept, Improve, Justify, Reuse (Halpern, Close and Johnson 1993; Johnstone 1981; Salinsky and Frances-White 2012).

The first rule, *Accept*, is foundational in the improv world and often phrased as “saying yes” to what others contribute. Acceptance means embracing the reality implied by a fellow improviser’s offer. Accepting does not necessarily imply reacting positively within the story. For instance, if Improviser A says, “I’m the plumber, here to fix your sink,” an accepting response from Improviser B might be, “Thank goodness you’re here; we’ve been waiting for hours!” or “I hope you can do better than the last three guys. They were useless!”

In contrast, a blocking response – rejecting the reality of the offer – might be, “We don’t have a sink,” or “You’re not a plumber.” Blocking disrupts the flow of improvisation by denying the premise introduced by a fellow performer, stalling the collaborative storytelling process.

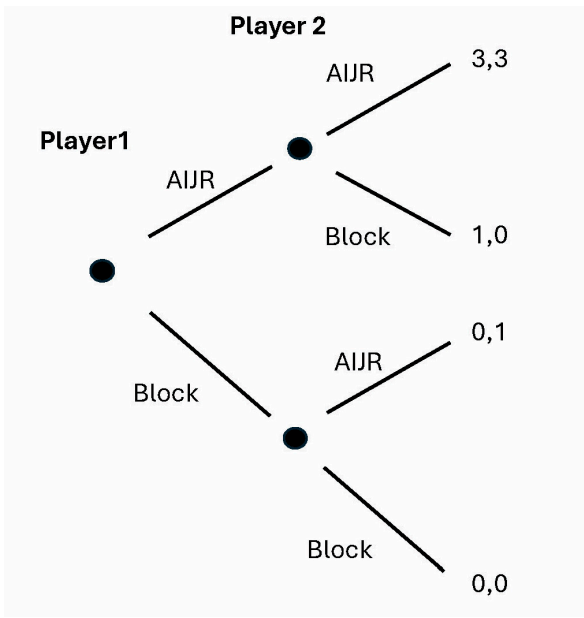
Second, *Improvise*. Improvisers must not only accept offers from their fellow players but also contribute new material spontaneously (Halpern et al. 1993). Spectators often marvel at how performers introduce unexpected, original elements that seamlessly integrate into the unfolding story. The key to this skill is the improviser’s willingness to courageously suggest new ideas without knowing what they will lead to, that is, without planning ahead. This approach is often summarised as “don’t be prepared,” and “say the first thing that comes to mind.” This spontaneity can only be successful if all other improvisers follow all other core techniques—acceptance, justification, and reuse—which collectively ensure that even surprising ideas are supported and incorporated effectively into the story.

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Third, the principle of *Justify* ensures that every element introduced into an improvisation, no matter how random, puzzling, or accidental, becomes meaningful (Halpern et al. 1993; Johnstone 1981). Justifying involves providing an explanation for enigmatic elements by connecting them to established details in the scene. For example: If Improviser A raises her arm without explanation, Improviser B might say, “Please hold on to the handle; the bus is about to turn.” If two players act as if the coffee machine was in different spots, a third might compliment them on having put their coffee machine on rollers. If A is introduced as Jack, but later claims that his name is John, one of the improvisers will explain that “this is Jack, but everybody calls him John because it’s easier to pronounce”. By using justification, mistakes are transformed into opportunities, and external disruptions – such as a phone ringing, a spectator snoring, or noise outside – are treated as purposeful and integrated into the evolving narrative. This technique ensures that no improvised element is ever seen as a mistake.

The rule of *Reuse* involves revisiting and integrating prominent elements introduced earlier in the story. For instance, if a scene begins with an elderly woman called “Jane” living alone on an island, improvisers will see to it that the elements “elderly woman called ‘Jane’”, “living alone”, and “island” will be reincorporated in the future happenings. By doing so, the story will naturally condense around these concepts and bring a story to light that could not have been anticipated. Players create a story “by remembering incidents that have been shelved and reincorporating them” (Johnstone 1981). This technique not only gives the story coherence but also provides a sense of satisfaction to the audience, as earlier threads are tied together in meaningful ways.

Figure 2: Theatre Improvisation Game



Note: Numbers are preferences of Player 1 and Player 2, respectively.

Theatre improvisation: a symmetrical AIJR model. Theatre improvisation between two players can be modelled with economic game theory as in Figure 2. Player 1 is influenced by an initial stimulus, either by initial suggestions by the public or the previous game. She can either use the combined rules AIJR or block. If she blocks, Player 2 can either use AIJR and rescue the scene, or she can block herself. If she uses AIJR, the scene may go on, but for simplicity, we only consider the case of two moves. The payoff matrix shows that in the theatre game, both players will try to follow the AIJR rules. Provided players have enough practice in AIJR, an unplanned improvised cultural world will emerge very quickly. The added insight of presenting the game in such a formal way is to show that the theatrical improvisation is a coordination game with one equilibrium in (AIJR, AIJR). Players prefer cooperating in any case and defect only by mistake. Note also that both players are on an equal footing (even though they may have a different status in the played scene). Both points will be different in the religious improvisational game we will analyse below.

THE AIJR MODEL APPLIED TO THE BROTHERHOOD

Two changes to the model: latency and asymmetry. We now seek to apply the AIJR model to our case, the Brotherhood. We find two main differences.

For one thing, in contrast to theatre improv, religious improvisation in the Brotherhood is latent. Theatre improvisers are aware that they are creating a new cultural world from scratch, the Brotherhood believes that they are discovering an existing world, consisting of extraterrestrials, spaceships, and cosmic battles.¹⁰ For another thing, while theatre improv is symmetric, the Brotherhood improvisation is asymmetric. Leaders are more powerful than followers, have the monopoly on using AIJR techniques, and can sanction followers. Followers mainly have the choice of staying or leaving.

Three examples. In what follows, I show how the Brotherhood uses similar techniques as theatre improvisers – namely, the AIJR model. In our first example, we see how the Brotherhood learns the meaning of a new word and acquires a new mythical story.

Example 1: The appearance of the Scice

The example starts with a message received by Dorothy Martin through automatic writing:

Sara and Justine were cast as the boy and the girl; to each a love of the Creator. As they came to the great city of the centre of the Earth, which is called the CITY of the self – the child, Sara, asks Justine: “Which way to the Father’s house?” To Sara, Justine said: “To be a Carter, or one who finds his way, is the great cast for which he was created”. As they journeyed to the city of the Self, in the centre of the Earth, they were overtaken by the coy little scice, which was a mink. He was in disguise of the rabbit, which was a cousin to the grouse. (p. 74.)

In this example we can see that Dorothy Martin uses AIJR techniques on the level of the individual messages. New words are *accepted*, and additional words are *improvised* by chaining them to already existing words. For example, the words “Sara and Justine” are accepted by the newly improvised words “were cast as the boy and girl; to each a love of the Creator”. The main characters Sara and Justine are given some kind of role by a new character: the Creator. The next sentence again accepts that the story is about Sara and Justine and improvises that they come to “the great city of the centre of the earth”. New words and

¹⁰ If readers doubt the existence of latent improvisations, there is a party game showing its possibility. In this game, player 1 is told that she should guess “What happened to grandma.” She can find out by making hypotheses and checking them with player 2 who can only answer with yes or no. What player 1 does not know is that player 2 answers randomly, according to a list of random zeros and 1’s given to her. This game will lead player 1 to invent a wild story out of randomness – because she believes that there is actually such a story out there.

sentences also *justify* previous elements to make them understandable. We are told that Sara and Justine come to “the great city of the centre of the Earth”. The following words explain that this city is the “city of the self”. The previous sentence is justified by giving it some symbolic meaning, in that we now understand that the characters are on a journey to increased self-understanding. Salient words are *reused* and the meaning of the message forms around these words. By reusing the words “Sara”, “Justine”, “City of the self”, and “centre of the Earth”, the story naturally assembles around these concepts. Of course, since every step also adds new elements, many questions remain. One of them is just what is meant by the enigmatic word “SCICE”.

An important point to understand is that the group does not only use AIJR at the level of the messages received by Dorothy Martin, but in the course of the entire group’s life. Thus, to continue with our example, it so happens that in another message the group is told that the extraterrestrials will land on the Lyon’s field in the near neighbourhood on a specific date. When the group stands awaiting the extraterrestrials for hours at the Lyon’s field, no aliens show up. However, a man walks along the road and Dorothy Martin briefly interacts with him. Dorothy Martin finds that the man has a mysterious allure. The group drives home, somewhat disappointed, but Dorothy Martin now receives the following message:

It was I, Sananda, who appeared on the roadside in the guise of the scice. (p. 6.)

This is a classic example of AIJR justifying. The meeting with the man (and the non-appearance of aliens) is now understandable. The man on the roadside was really the extraterrestrial they had been waiting for. He was Sananda. At the same time, the group has now learnt what the word “scice” means (“one who is in disguise”). Note the structure of the justifying technique. A previous and enigmatic element (“scice”) is made understandable by justifying it through a current element, thereby at the same time presenting the current element as intended by the previous element.

Example 2: The child in Collegeville

In our second, historically earlier, example, the Laughead couple (Dr. Laughead and his wife), who live in Collegeville contact Dorothy Martin by letter since they have heard from her spiritual activity and propose a meeting. Dorothy Martin is thrilled. She remembers that she has previously received a message by the extraterrestrials saying:

Go to Collegeville. There is a child there to whom I am trying to get through with light. (p. 57.)

In her view, the child from Collegeville can be no other than Mrs. Laughead. The “Getting through with light” means that the message of Dorothy Martin (the “light”) should be given to Mrs. Laughead. In this way, the previous enigmatic message is justified, made understandable and is seen to predict the fact that Mrs. Laughead and her husband now seek contact with Dorothy Martin.

Example 3: The end of the world and the Christmas message

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Our third example is the most complex, since it involves several steps, it also includes the central failed prophecy that made the group famous. On the 15th of August, Dorothy Martin receives the following message.

When the resurrected have been resurrected or taken up - it will be as a great burst of light... the ground in the earth to a depth of thirty feet will be bright... for the earth will be purified. [...] In the midst of this it is to be recorded that a great wave rushes into the Rocky Mountains. (p. 72.)

Dorothy Martin and Dr. Laughead interpret this message as saying that there will be a great catastrophe on earth on the 21st of December (possibly referring to the winter solstice).¹¹ This interpretation is again a nice example of accepting and justifying, as this message explains why the group has not yet had direct, face-to-face contact with the extraterrestrials. The group now understands why: The extraterrestrials are waiting to save the group just before the planned catastrophe.

After the aliens fail to arrive on three separate occasions as predicted between December 17th and December 21st, and even the catastrophic event expected on December 21st does not occur, Dorothy Martin receives the following message:

Not since the beginning of time upon this Earth has there been such a force of good and light as now floods this room and that which has been loosed within this room now floods the entire Earth. As thy God has spoken through the two who sit within these walls has he manifested that which he has given thee to do. (p. 199.)

11 I thank David Voas for this suggestion (personal communication).

This serves as a compelling example of AIJR. It can be interpreted to mean that the aliens did not arrive, nor did the catastrophe occur, because of the group's actions. The group generated so much positivity and light that a catastrophe –and the aliens' intervention – are no longer necessary. Simultaneously, the group appears to have a new mission: spreading the light ("that which he has given thee to do"). This new improvised element both justifies and explains the puzzling previous events (the absence of the aliens and the catastrophe) while reframing them as preparatory and predictive of the current element. Additionally, the Brotherhood now has the foundation for a new myth: through their collective actions of goodness and light, they averted a great catastrophe on Earth.

How the Brotherhood used AIJR: some general points. Having presented three examples, we can now attempt to make broader observations about how the Brotherhood employs AIJR mechanisms.

The group uses the technique of *accepting* in a remarkably consistent way. In particular, the group leaders appear willing to embrace nearly any message or sign—no matter how peculiar or questionable—as legitimate communication from extraterrestrials. Everyday skepticism seems to have been completely set aside. This principle is strictly adhered to, as both Dorothy Martin and Dr. Laughead exemplify this behaviour and actively reprimand members who challenge the validity of messages or express doubt about extraterrestrial signs. For example, on December 17, when someone claiming to be "Captain Video" calls, Mrs. Laughead is (understandably) inclined to suspect it is a prank.¹² However, she is criticised, and the message is upheld as genuine (p. 166). A similar incident occurs when five college students arrive, presenting themselves as extraterrestrials. Although Kurt Freund remarks, "They looked like college kids to me," he too is criticised and overruled. The group's eagerness to accept anything extends to embracing a new medium, Berta Blatsky (as named in Festinger's book), despite her messages from the "Creator" often contradicting Martin's and seemingly catering transparently to Blatsky's psychological needs (from an external perspective). This uncritical openness underscores the group's deep commitment to their belief system, prioritizing acceptance over discernment.

Overall, the group exhibits very little of the opposite of acceptance: *blocking*. Members almost never openly acknowledge that a prediction has failed, even

12 "Captain Video and His Video Rangers" is a television series being aired at the time and since the Brotherhood has received national prominence by this time, there is objectively a very high probability that a Captain Video calling by phone is a prankster.

in the most glaring cases, such as when promised spaceships or the anticipated cataclysm fail to materialise. Rarely do they express doubts or deny the validity of extraterrestrial messages or, more broadly, the existence of extraterrestrials. For instance, much to the frustration of the scientific observers, followers never discuss prophetic failures immediately after a disappointment. It is always the observers who raise questions, such as “why the saucers had not come” (p. 168). Instead of openly blocking, members often resort to latent blocking, quietly disengaging. Time and again, we hear of individuals simply disappearing from the group after being disillusioned by failed predictions. This raises an intriguing question: why is there so little overt blocking in the form of resistance to interpretations, challenges to “orders,” or outright rebellion? Why do members either comply with extreme directives—such as quitting their jobs, moving in with Mrs. Keech, or traveling long distances to await the aliens—or leave silently in the night without protest? This behaviour is typical in many new religious movements. The most compelling explanation lies in the group’s reliance on the leaders’ charisma (Palmer 1988). Discontented members likely sense that directly challenging the leader is futile. If unsuccessful, such a challenge would result in a significant loss of status, often leading to their departure. If successful, it would undermine the leader’s charisma and potentially dismantle the group. Thus, the most pragmatic choice is simply to leave.¹³

Improvisation—the creation of new elements within the religious framework—primarily occurs through Dorothy Martin’s automatic writing and Berta Blatsky’s oral channelling of the “Creator”.¹⁴ A secondary source of improvisation arises from the group’s interpretation of their environment. Highly attuned to potential signs from extraterrestrials, the group often reinterprets seemingly mundane events as supernatural communications. For example, a phone call to Dorothy Martin is assumed to be from an extraterrestrial, an arriving scientific observer is seen as an alien, the prank call from “Captain Video” is accepted as genuine, and the five college students claiming to be “boys from Clarion” are equally believed to be extraterrestrials. Because of their heightened expectations, even non-events can serve as improvisational elements. For instance, the failure of the extraterrestrials to arrive is reframed as a test, while the absence of the anticipated cataclysm is

¹³ Moreover, other members also perceive the fragile dependence of the group’s existence on the leader’s charisma and often react strongly against any challenge to their authority. They recognise that such challenges could destabilise the leader’s aura of legitimacy, upon which the group’s cohesion is built.

¹⁴ We use the name given in the Festinger’s book since the real name of this person is apparently not known in the literature.

celebrated as a Christmas miracle in which the group's efforts to spread light are credited with saving the world.

*Justifying*¹⁵ frequently occurs after group discussions, with Laughead or Martin often deciding which explanation prevails. A wide variety of justifications are employed, sometimes in combination. For instance, the aliens' failure to arrive is explained by: first, it being a test, requiring the group to undergo further training; second, the presence of strangers deterring the aliens; third, an error in the date; fourth, the aliens arriving invisibly; fifth, the aliens arriving in an unexpected form; or, sixth, the aliens finding no reason to come because the group had already spread sufficient light. Justifications are not limited to alien no-shows but are a general technique for explaining unexpected or surprising occurrences. They are used to interpret unknown terms in messages (e.g., "scice"), the inexplicable behaviour of supposed extraterrestrials (such as the five "spacemen" challenging Dorothy Martin's views, later rationalised as a test or a retraction of her teachings), unfortunate events (such as Dr. Laughead's dismissal, framed as freeing him for extraterrestrial work), or puzzling attitudes (like Mr. Martin's lack of conviction, explained by the possibility that he might die and be resurrected as a believer).¹⁶

The technique of *reusing* contributes to the construction of the religious world developed over several months. Concepts such as "Clarion," "Guardians," "Sananda," "inner knowing," "Beleis," "Parich," and the "Cataclysm of December 21st" originate from initial messages and are repeatedly incorporated into subsequent messages or group discussions. Through this iterative process, these elements undergo a form of cultural condensation, becoming ingrained in the minds of group members. Over time, their consistent repetition establishes a cultural reality that, in turn, shapes the beliefs and evolution of the group itself.

Authority, power, and belief. The Brotherhood cannot be fully understood without examining the *authority* and *power dynamics* within the group – an area surprisingly overlooked in the literature. Authority can be defined as the

15 For a similar list of justifications of non-healing among Pentecostals, see Stolz (2011).

16 The funniest story in the book, in my opinion, involves Mr. Martin, the husband of Dorothy Martin. Unlike his wife, Mr. Martin never believed in her prophecies but also never opposed them. Festinger describes him as a "man of infinite patience, gentleness, and tolerance" (Festinger et al., p. 53), enduring everything that unfolds in his home with stoic composure. When the extraterrestrials fail to appear at midnight on December 20, the group is told by the Creator that they will instead witness a miracle: the death and resurrection of Mr. Martin. At this point, however, Mr. Martin is soundly asleep in bed. Undeterred, the group checks his bedroom three times to see if he has died – each time finding him very much alive. To resolve this perplexing situation, the Creator proclaims that Mr. Martin is still alive because he has already died and been resurrected (p. 193).

ability of individuals to influence others based on perceived intellectual or moral superiority. Members grant authority to a leader when they believe that following the leader's guidance will yield benefits due to the leader's superior insight or knowledge. Power, on the other hand, is the ability to influence others using sanctioning threats – actions intended to impose negative consequences on non-compliant individuals. While authority motivates through respect and trust, power operates through fear of sanctions.¹⁷

234 Members follow Martin because of her “gift of writing,” which establishes her as a direct channel to the extraterrestrials. Laughead commands authority due to his advanced understanding of spiritual and extraterrestrial matters. However, manifest power is exercised largely by the supernatural figures communicated through Martin's messages. These extraterrestrials issue directives that members perceive as binding, such as fasting, quitting jobs, moving in with Martin, or traveling long distances to attend meetings. Many members describe themselves as being “under orders”. For instance, Dr. Laughead lost his job due to his devotion to the extraterrestrial cause and remains on “twenty-four-hour alert” for the Guardians.

Sanctions imposed by the extraterrestrial entities are both immediate and long-term. Immediately, non-cooperative members face the potential scorn of the group, loss of status, or even expulsion (though no actual case of expulsion is reported). In a longer perspective, non-compliance may risk losing one's “ticket” aboard a spaceship when the time comes. This dynamic of authority and power serves to suppress dissent, ensuring that members rarely block (voice objections to) messages or decisions from the leaders. Instead, they accept unsettling improvisational elements out of fear of sanction and the desire to retain group benefits. Note that the power of sanctioning is effective only as long as members perceive positive outcomes from their group involvement.

Note that the leaders' influence depends on followers continuing *belief* in leaders being true prophets, in extraterrestrials, the predicted catastrophe, and the benefits of group membership – such as emotional support and friendships. If these beliefs or perceived benefits weaken, the leaders' ability to control member behaviour diminishes. Below we will construct a model where these beliefs will be formalised.

AN ASYMMETRICAL AIJR MODEL

The improvisational dynamics within the Brotherhood can be schematically represented using economic game theory, as shown in Figure 3 (A). We set

¹⁷ See for somewhat different definitions: Coleman (1990).

up the game as a repeated Bayesian signaling game (Gibbons 1992a).¹⁸ The structure of this game differs from the simple improvisational game above in three respects. First, it is asymmetric. This means that only the leader holds the right to improvise, employing the AIJR techniques; alternatively, the leader may block, for example by admitting that a prophecy was incorrect. The follower, on the other hand, has two choices: to accept or to block. Second, this is a signaling game. By choosing between AIJR move and admitting failure, the leader signals to the follower whether she is a true prophet or a fraud. Third, this is a repeated game in which the follower updates her belief in the leader being a true prophet in every round.

More specifically, the game is set up as follows.

1. There are two players, a religious leader and a follower. From the point of view of the follower, the religious leader could be either a true prophet or a fraud.
2. The follower has a belief. She believes that the religious leader is either a true prophet (tp) or a fraud (f) with an initial belief $p(tp) = \mu$ and $p(f) = 1 - \mu$.
3. Nature draws a religious leader with $p(f) = 1$. Somewhat pessimistically, we assume that the religious leader is in reality always a fraud, that her predictions will fail in every round, and that she always justifies. This means in practice that the leader's behaviour is exogenous.
4. The follower's initial belief about the leader is $p(tp) = p(f) = 0.5$. The fact, that she does not know whether the leader is a true prophet, or a fraud is represented by the dashed lines between nodes in Figure 2. In terms of the model, the follower does not know at what node she currently finds herself.
5. We assume that, in the eyes of the follower, both a true prophet and a fraud would be likely to justify their failed prophecies with AIJR, but that the true prophet would be more likely to admit her failure. In our main model we use the $p(J|tp) = 0.8$ and $p(J|f) = 0.99$. The idea is that the fraud knows that she lies; she will therefore justify her failure in any case. The true prophet, however, believes in her powers and should be genuinely bewildered by her failure. She is still very likely to justify her failure by seeking explanations and signs that might make her vision come true—but she is nevertheless prepared to admit failure under at least some circumstances. Note that these two probabilities do not need to sum up to 1.

The play then proceeds through several rounds. In a first round, the religious leader chooses between AIJR (justifying the failed prophecy) and blocking (admitting an error, failing to justify the failed prophecy). As a result of the leader's move, the follower updates her belief about whether the leader is a true prophet or a fraud. She then chooses between accepting the leader's move (e.g.

¹⁸ I thank Richard Breen for having suggested a model along these lines.

remaining in the group) and blocking (e.g., leaving the group). If the follower has not blocked in the previous round, the game enters a further round with an updated belief on the side of the follower. The follower updates her belief according to Bayes rule as follows:

where

$$\mu' = p(tp|J) = \frac{p(J|tp) * \mu}{p(J|tp) * \mu + p(J|f) * (1 - \mu)}$$

tp = true prophet; f = fraud; J = justification for failure

μ = prior belief (that leader is a true prophet)

μ' = updated belief (that leader is a true prophet)

$p(tp|J)$ = probability of a true prophet, if a justification has been given

$p(J|tp)$ = probability that the true prophet justifies

$p(J|f)$ = probability that the fraud justifies

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If the follower continues to accept the AIJR moves of the leader, she will find herself immersed in a wondrous evolution, a rapidly evolving cultural narrative. The game continues until the follower blocks.

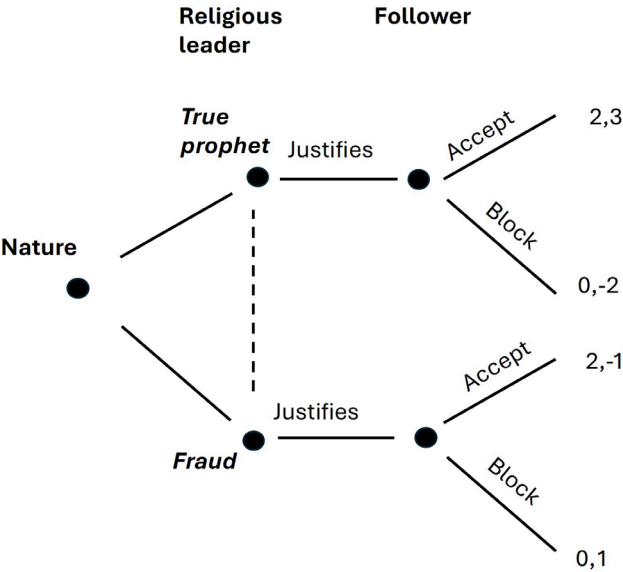
The payoffs in this model are designed to reflect the motivations of both the religious leader and the follower: For the religious leader, utility depends on whether the follower cooperates. The leader gains utility if the follower stays in the group (accepts the justification) and receives nothing if the follower leaves (blocks). This applies whether the leader is a true prophet or a fraud. For the follower, the stakes are higher and hinge on the true nature of the leader: the best possible outcome for the follower is when the leader is a true prophet and the follower accepts the justification—this outcome offers the promise of true salvation.

The worst possible outcome is when the leader is a true prophet, but the follower chooses to leave (block). In this case, the follower misses out on salvation—resulting in the lowest utility in the model. A second negative outcome, though less terrible than rejecting a true prophet, happens when the leader turns out to be a fraud and the follower stays. In this case, the follower continues to follow a false leader and becomes a misguided believer (or a dupe, a deceived follower, depending on tone—choose the wording that fits your style). The follower gains a small positive utility (1) when she correctly identifies the fraud and leaves—this reflects the relief or benefit of escaping a deceptive situation.

Since this is a repeated Bayesian game, we can analyse it in terms of belief dynamics, strategies, and long-term payoffs. Generally, we assume that the follower is choosing an optimal strategy, that is, maximizing her payoffs.

We can now look at the Bayesian updating process and calculate in what round a rational follower would block (exit the group).

Figure 3: Repeated Bayesian Signaling Improvisational Game Between a Player and a Follower



Note: Numbers are preferences of Religious Leader and Follower respectively. Dashed lines represent incomplete information of the Follower about the node she finds herself on.

Substantively, the model may be interpreted in the following way. Under the assumptions made in the model, the group may continue to operate even though multiple predictions fail, since the religious leader provides convincing justifications (with AIJR techniques). However, with every new failure and subsequent justification, the follower’s belief in the leader being a true prophet declines. At a certain threshold, the follower switches to blocking.

The threshold is the situation in which the follower is indifferent between accepting and blocking. To calculate the threshold, we get the expected utility of accepting and blocking for the follower if the leader justifies (using the payoff matrix):

$$\begin{aligned}
 EU_{\text{Accept}} &= 3\mu + (-1)(1-\mu) = 4\mu - 1 \\
 EU_{\text{Block}} &= (-2)\mu + 1(1-\mu) = -3\mu + 1
 \end{aligned}$$

The threshold is given when the follower is indifferent between accepting and blocking:

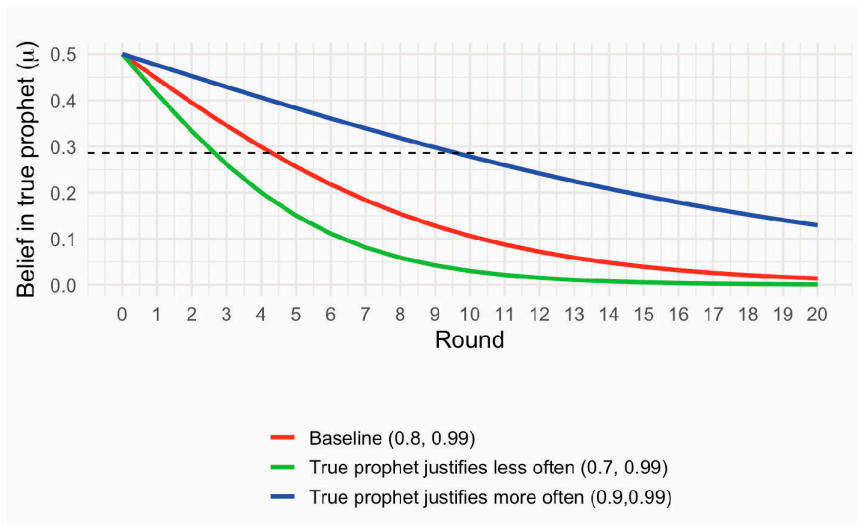
$$\begin{aligned}
 EU_{\text{Accept}} &= EU_{\text{Block}} \\
 4\mu - 1 &= -3\mu + 1 \\
 7\mu &= 2 \\
 \mu &= 0.286
 \end{aligned}$$

This means substantially that the follower is accepting justifications until there is only a 28.6 percent chance that the leader is a true prophet.

In Figure 4, we see that under our baseline model with $(J|tp) = 0.8$ and $p(J|f) = 0.99$, the follower will block at the fifth failure of prophecy (red line). If the follower assumes that a true prophet would justify less often, she will block already at the third failure of prophecy (green line). On the other hand, if she assumes that a true prophet would justify more often, she will block only at the 10th failure (blue line).

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Figure 4: Repeated Bayesian Signaling Improvisational Game Between a Prophet and a Follower



Note: Every round consists of a failed prophecy and a justification by the Religious Leader. The dotted line represents the threshold below which the Follower will block.

Can this model make sense of what happened to the Brotherhood? If the assumptions of the model are feasible, it explains why the Brotherhood survived several significant failures of prophecies (around 5-6) but then disintegrated. The model explains this by the fact that the members reached the threshold value.

Our model can also explain why the Brotherhood collapsed earlier in East Lansing than in Oak Park, Illinois.¹⁹ This is because the leaders in Oak Park, Illinois (Dorothy Martin and Charles Laughead) remained present and justified the failures. They showed their willingness to continue with the group and its beliefs. Accordingly, the Oak Park group could still survive for some days longer. In East Lansing, however, no leaders were present, and members were left alone with their knowledge that all predictions of the group had failed (Charles Laughead had joined Dorothy Martin in Oak Park, Illinois). This can be expressed in our model as a situation in which the leaders block, leading the followers to also block.

OTHER EXAMPLES IN THE HISTORY OF RELIGION

One way of evaluating the strength of a model is trying to find other examples of the proposed mechanism. Do other and historically more important religious groups behave in similar ways? In my view, the answer is yes, and I only very briefly mention four examples.

The *movement of Jesus and early Christianity* provides an excellent example of the use of AIJR techniques. The historical Jesus was an itinerant Jewish preacher who likely claimed divinity and unequivocally announced the imminent end of the world (Theissen 2001). His crucifixion by the Romans presented his followers with a significant challenge—a failed prophecy. While various justifications and explanations emerged, the interpretation that ultimately prevailed was that God had willed his own Son, Jesus, to die on the cross as a sacrifice for the sins of humanity (Bermejo-Rubio 2017; Lüdemann 2002). According to this explanation, Jesus had risen from the dead, appeared to his followers, and ascended to heaven to reunite with the Father. Believers could share in this miraculous transformation by being baptised into Jesus Christ and thus lead a life in righteousness and holiness. To construct this narrative, Paul drew on established Jewish traditions of atonement through sacrifice. For instance, in Romans 4:25, he alluded to Isaiah 53:4-5: “Surely he has borne our griefs and carried our sorrows; yet we esteemed him stricken, smitten by God, and afflicted. But he was pierced for our transgressions; he was crushed for our iniquities; upon him was the chastisement that brought us peace, and with his wounds we are healed.” Through this reinterpretation, Jesus’s crucifixion was both justified and presented as a fulfilment of Isaiah’s prophecy. The story of the Son of God who died on the cross for humanity’s sins became such a compelling explanation that it became the cornerstone of

19 Already Festinger et al. had remarked on this (p. 70).

a new religion – Christianity. This faith welcomed both Jews and Gentiles, offering a universal message of redemption and salvation.

The *Jehovah's Witnesses* provide a compelling example of the application of the AIJR technique. One of the most well-known cases involves their belief concerning the year 1914 (Beckford 1975; Chryssides 2010). According to their founder, Charles T. Russell, this year marked the end of the “time of the Gentiles” and the establishment of God’s kingdom on earth (Russell 1989 [1889]). However, when 1914 passed without visible fulfilment of these expectations, the movement faced a significant challenge. Joseph F. Rutherford, Russell’s successor, reinterpreted the prophecy, asserting that God’s kingdom had indeed been established—but invisibly (Rutherford 1933). He explained that Jesus had appeared in a new form in heaven during this year. Furthermore, dramatic worldly events such as the outbreak of World War I were framed as additional signs affirming this interpretation. Since then, 1914 has become a cornerstone of the Jehovah’s Witnesses’ explanation of world history and God’s eschatological plan, signifying the year when Jesus triumphantly began his heavenly reign in a new form.

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In Islam, the so-called “satanic verses” can be seen as an example of the AIJR technique (Cook 2000; Paret 1972). According to the accounts of al-Wāqidi, Ibn Sa’d, and al-Tabarī, there was an incident in which Muhammad recited verses acknowledging the three goddesses al-Lat, al-Uzza, and Manat as legitimate deities. These accounts claim that the verses of Surah 53:19–20—“Have you thought upon al-Lat and al-Uzza, and Manat, the third, the other?”—were originally followed by: “These are the exalted cranes (intermediaries) whose intercession is to be hoped for.” This addition, however, directly contradicted the strict monotheism central to Muhammad’s message. According to these biographers, Muhammad later retracted the verses, asserting that they had been a “satanic suggestion.” If historical, this incident would represent a clear example of AIJR. The apparent momentary acceptance of polytheism—likely an attempt to ease tensions with powerful Meccan leaders—was retrospectively reframed as a grave error attributed to satanic interference. This justification was further supported by referencing an existing element of the religious worldview, namely the devil’s capacity to mislead prophets, as mentioned in Surah 22:52: “And We did not send before you any messenger or prophet except that when he spoke (or recited), Satan threw into it (some misunderstanding).”²⁰

20 The later Muslim tradition has mostly rejected the possibility that Muhammad ever made such satanically informed claims, on the grounds that Muhammad was perfect and therefore could not possibly have made a mistake.

A final example can be drawn from Scientology. L. Ron Hubbard's method of self-development, originally called "Dianetics" and later evolved into "Scientology," was never accepted by scientifically trained psychiatrists (Miller 1987; Wright 2013). Early in the development of Dianetics, one of Hubbard's collaborators, medical doctor Joseph Winter, submitted papers on Dianetics to the journals of the American Medical Association and the American Psychiatric Association. However, these papers were rejected due to "a lack of clinical experimentation, or indeed of any substantiation" (Atack 1990, p. 106). This marked the beginning of a series of categorical rejections by psychiatric establishments in various countries (Atack 1990). Hubbard responded to these setbacks with an AIJR technique. He justified the rejection by claiming a global conspiracy of psychiatrists to subjugate humanity. He claimed that psychiatrists sought to "harm, injure, and kill patients without restraint" (cited in Atack 1990, p. 261). According to Hubbard, their sinister motives explained their unwillingness to accept his method, which promised genuine progress for millions of individuals. Consequently, he urged Scientologists to expose the abuses and crimes of psychologists and psychiatrists. This mission led to the creation of the Citizens Commission on Human Rights, an organization "dedicated to eradicating psychiatric abuses and ensuring patient protections."²¹

Note that in all these examples, the justifications devised to reinterpret the enigmatic elements have themselves become integral parts of the respective religious ideologies. The expiatory death of Jesus, the possibility of satanic intervention in the Qur'an, the invisible beginning of God's kingdom in 1914, and the global conspiracy of psychiatrists—all of these have, to varying degrees, become central components of their respective religious systems. These elements emerged and solidified through acts of religious improvisation. On a cautionary note, all these examples may well be interpreted with the AIJR model in mind, but since our historical data are much weaker than in the Brotherhood case, it is much harder to *prove*, that the model applies.

CONCLUSION

I set out to explore the social mechanisms underlying the emergence of a small religion as described in Festinger et al. (2008 [1956]) and to explain the following astounding facts associated with the case. First, the new religion emerged spontaneously within only six months. Second, the messages purportedly received from extraterrestrials were vague, yet the resulting

²¹ See the official website of Scientology, <https://www.scientology.org/how-we-help/citizens-commission-on-human-rights/#slide9>, accessed on December 15, 2024.

religion was relatively coherent and structured. Third, despite multiple failed prophecies, the group did not collapse but instead experienced an evolution in its ideology.

To address this question, I proposed a generative model inspired by Raymond Boudon, conceptualised as an improvisational game designed to produce these astounding facts. The central premise is that the group employed techniques akin to those used by theatre improvisers, albeit in a latent and asymmetric fashion. Unlike theatre improvisers, who are fully aware they are constructing a reality, the Brotherhood believed they were uncovering an already existing reality. Furthermore, while theatre improvisers operate on equal footing, the Brotherhood's process was shaped by authority and power dynamics, granting leaders greater influence over the improvisational process than followers.

242 I have on the one hand presented the model and, on the other, provided numerous examples to demonstrate its empirical applicability to the Brotherhood. *How could the new religion emerge without planning?* This becomes possible with AIJR techniques. The group first accepts all previously improvised elements as valid. Second, it freely improvises new elements without fear of future contradictions. Third, it justifies enigmatic elements by connecting them to earlier material. Fourth, it reuses salient elements, leading to the emergence of a coherent religious ideology and group structure centred around these focal points. In this way, much like theatre improvisers, the group collectively creates a new cultural world, even though no individual can fully control its evolution.

How could the new religion emerge so quickly? The speed of emergence is explained by the AIJR principle of “not blocking” (i.e., “accepting”). The group is prohibited from denying the assumed reality of improvised elements. With this rule in place and a continuous stream of new contributions, a new cultural world can form rapidly.

How could the religion become so coherent despite the often unclear and messy nature of the messages received? The *reuse mechanism* is especially critical here: many improvised elements are forgotten in the long run, while a select few salient elements become central to the narrative. These focal points provide the framework for the emerging religious world.

Why does the group not collapse with each new failed prophecy? The Brotherhood's history is filled with such failures: extraterrestrials fail to appear, UFOs do not land, catastrophes do not occur, and messages often contradict one another. According to our AIJR model, the group remains intact despite these disappointments because it can generate one or more justifications for any failed prophecy. These successful justifications are then incorporated into the group's evolving religious culture. In this way, failed prophecies do not

necessarily remain failures; over time, they may even become central symbols of the group's belief system, much like the crucifixion of Jesus in Christianity. However, the success of these justifications often depends on the leaders' ability to enforce their acceptance. If the group remains attractive to its followers, leaders can pressure members to accept even improbable explanations in exchange for continued membership and belonging. If, on the other hand, followers' belief that the prophet is a true prophet drop below a certain threshold, the group may disintegrate.

I do not mean to suggest that religions evolve solely through improvisational mechanisms. Religions can evolve in many ways, and the mechanisms discussed here represent only one possible pathway of social evolution. For example, religious change can occur through the action of a powerful figure, such as a king or prophet, or through collective decisions, as when a synod resolves a theological question (compare to Esser 2000). Nevertheless, AIJR may apply in more instances than one may expect. Faced with new turns of events, powerful religious leaders often must adapt their ideology to changes of society. It is then often useful to justify new elements in an AIJR manner, by linking them to some older element and presenting them as somehow implied or predicted by that former element. As David Voas comments:

It's not only prophecy that can fail: doctrine can also fail. Democracy replaces divinely anointed kings. Slavery is abolished. Contraception becomes almost universal, women become managers, and same-sex relationships come to be accepted. Churches that claimed that God condemns something have to concede that God supports it. The task is now much harder than back in the more spontaneous period of AIJR, but it amounts to introducing a sharp narrative turn while still arguing that it's all part of the same story.²²

The model presented here suggests that religious groups may emerge and evolve in unplanned ways, following a process of "social evolution." This raises the question of how our model relates to evolutionary models in biology. It seems that the three mechanisms identified in AIJR parallel the core mechanisms of biological evolution. The improvisational creation of new elements introduces *variation*. The reuse of some elements while discarding others resembles *selection*. Finally, the processes of acceptance and justification can be compared to *inheritance*. Thus, AIJR may be understood as functioning in a manner somewhat analogous to biological evolution—albeit at a much faster pace and involving agents with consciousness and intentionality.

²² Personal communication by David Voas from January 17, 2025.

Do our findings have implications for the theologies of different religious groups? In my view, AIJR explanations of a given religious message do not determine its theological “truth.” The message of the resurrected Christ may hold truth for a Christian regardless of how it was created, just as the interpretation of the “Satanic verses” may hold truth for a Muslim. Here, “truth” is understood not in the scientific sense but as something akin to “meaning-making value.” Nevertheless, if accepted, AIJR explanations are likely to have theological consequences, as they may rule out certain modes of argumentation – particularly those associated with fundamentalist approaches.²³

This article, of course, has its limitations. First, I have focused on a single, very small religious group. While I have suggested that the AIJR mechanisms may be applicable to other religious groups, these examples have been necessarily brief and illustrative. The extent to which the proposed mechanisms can be generalised remains an open question. Second, the relationship between social game theory and economic game theory requires further clarification. Third, when analysing the case, I have relied on the written-up record of Festinger et al., not on the primary data. Fourth, the game theoretical model presented is work in progress. While this model seems to capture some of the points that interest us, it also has its drawbacks. Are the assumptions, especially the assumed starting values, reasonable? I suspect that there must be better ways than what is proposed here to model this and other cases of religious improvisation.

In future studies, the AIJR model should be applied more widely, and better game-theoretic models should be devised. When this will happen, I predict, the world as we know it will come to an end, and a bright new era of research will begin.

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23 I thank Lukas Spinner for interesting discussions on this point.

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ACCLAIMS

This remarkably well-structured volume accomplishes two feats at once. It offers a critical engagement with the multiple facets and contributions of Raymond Boudon's sociological oeuvre, for example: the modeling of relative deprivation, the generative approach to social stratification, the plea for methodological individualism, the analysis of unintended consequences and social change, the epistemology of sociological investigations, and the reflection on rationality and belief formation. Through this critical engagement – here is the second feat – this volume tackles substantive and methodological issues central to contemporary developments in the discipline of sociology, whether the focus is on formal models, simulation work, counterfactual reasoning, social mobility and its measurements, the significance of Rational Choice, or our understanding of processual dynamics.

Ivan Ermakoff, Professor of Sociology,
University of Wisconsin-Madison

Without indulging in praise, this collective volume – bringing together 18 substantial chapters – aims to shed light on the enduring legacy of Raymond Boudon's sociology. It addresses a notable gap: the lack of a detailed, multifaceted examination of the work of one of the foremost figures in both French and international sociology. The reader will find not only an assessment of Boudon's intellectual contributions but also a critical appraisal of their limitations and the avenues they open for further research into contemporary issues. The book will appeal both to specialists familiar with the evolution of Boudon's thought over time and to those wishing to discover it, explore it in greater depth, or draw upon it for teaching purposes.

Gérald Gaglio, Professor of Sociology,
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This book is a splendid tribute to Raymond Boudon, one of the most important sociologists of the second half of the 20th century. The contributions, in their appreciative and critical aspects alike, clearly bring out the intellectual depth and challenging nature of Boudon's work and its continuing relevance in the study of modern societies.

John H. Goldthorpe, Emeritus Fellow,
Nuffield College, University of Oxford

This collection of papers, expertly curated by Gianluca Manzo, is as wide-ranging and thought-provoking as Raymond Boudon himself. It is sure to stimulate interest in a now-sometimes-forgotten giant of French sociology.

Neil Gross, Charles A. Dana Professor of Sociology,
Colby College (Maine)

This Memorial Festschrift honors Raymond Boudon (1934–2013) by considering his contributions to conceptualization, theory, and empirics, as well as their associated methods, across foundational topical domains in sociology and guided by expert commentators. It is not only a superb assessment, and its value will grow in three main ways. First, like most Festschriften, it provides a portrait of the growth and trajectory of Boudon's ideas, embedded in his relations with other scholars, both teachers, peers, and students. This portrait will grow over time. Second, as the historian David Knowles wrote about the *quaestiones quodlibetales* of the medieval university (especially the University of Paris) and the debates held during Advent and Lent when anyone could ask any question of any master, Festschrift discussions are a valuable index to what is “in the air” – in this case both when Boudon was working and now. Third, Boudon believed in the promise of mathematics, and it will be possible to trace over time the progress of the $X \rightarrow Y$ relations in the book, as they travel from general functions to specific functions.

Guillermina Jasso, Professor of Sociology,
Silver Professor of Arts and Science, New York University

This book is not a hagiography. Unusually, its title truly reflects its content. Twenty-two sociologists from different countries and different generations take a fresh look at the work of Raymond Boudon. In keeping with his approach but without complacency, they highlight the theoretical and methodological contributions of his sociology, its limitations, its errors, its relevance for teaching sociology to the new generations, and the perspectives that remain open in several thematic areas.

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