CHAIN LETTER EVOLUTION

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410 kilobytes

Abstract: Billions of paper chain letters circulated in the 20th century. Using a sample of over 525 dated letters, predominant types are identified and analyzed for their replicative advantage. The major emphasis is on traditional English language luck chain letters. After thousands of generations, these accumulated remarkable methods of getting themselves copied. Complementary testimonials developed, one exploiting perceived bad luck, another exploiting perceived good luck. Some letters could appear Catholic to Catholics and Protestant to Protestants. Key events in chain letter history are examined in detail, including the puzzling origin of money chain letters. A reconstruction of uncollected intermediate forms suggests that around 1932 a luck chain letter actually brought unexpected money in the mail to some who lived in small towns. In 1935 the first money chain letter appeared, the infamous "Send-a-Dime," which was copied over a billion times within a few months. Newly discovered sources are used to argue that the unknown author of Send-a-Dime was a Denver woman motivated by charity.

The collection of letters is presented on-line in HTML format in the Paper Chain Letter Archive. An Annotated Bibliography on Chain Letters and Pyramid Schemes contains over 350 entries. A Glossary facilitates the independent reading of sections.

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TABLES

Acknowledgments

I could not have conducted this study without the assistance and friendship of Dr. Michael J. Preston, University of Colorado English Professor and folklorist. He obtained scores of letters, gave me copies of his files and put me up in his home while I worked in the CU Boulder library. The help of Dr. William F. Hansen, folklorist and Head of the Department of Classical Studies at Indiana University was also indispensable. He provided many useful chain letters and translations, and his interest and encouragement have been sustaining.

Special thanks also go to Alan E. Mays, who sent many chain letters, his bibliography on chain letters and the Himmelsbrief, and archived chain email. Paul Smith also provided scores of letters and an extensive bibliography. Anna Guigne sent a stack of chain letters and answered questions. Steve Glickman helped with microfilmed Denver Post articles at UC Boulder. Carol Petty copied local newspaper articles in Springfield, Missouri, where chain letters rampaged for a few days in 1935. John Burkhardt shared his thoughts early in the project and emailed digitized letters. James H. Patterson has provided photocopies of many rare chain letters from his collection of "unmailable" items. Sandy Hobbs recently sent photocopies of every chain letter that has appeared in the publications *Dear Mr. Thoms* and *Letters to Ambrose Merton*.

I have received much needed help with foreign language chain letters. Sarah Winter translated several chain letters and an entire article from French into English. Ianina Tishchenko found several Russian chain letters and articles, and translated published letters in Polish and Russian to English. Dr. Jean-Bruno Renard has sent chain letters from France and Brazil, and a bibliography of French publications. Natalia Kasprzak sent two Polish articles on chain letters and translated a Polish letter into English. Bill Clark translated some chain letter Tagalog.

Though I am solely responsible for the approach and presentation here, this effort was sustained because a few people expressed interest. I am especially thankful for the encouragement of Richard Dawkins, who suggested I write "a book on chain letters, with all your detailed examples and analyses." This is not a book, but likely it is enough detail for most readers.

A list of those who provided one or more paper chain letters appears on the information page for the archive.

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1. Paper Chain Letters

1.1 Introduction.

Seeking paper chain letters. *Overview*. *Files and Conventions*.

Seeking paper chain letters.
If you have any information on where we may obtain more paper chain letters please email. Chain letters can be sent directly to D. VanArsdale, PO Box 2335, Lompoc, CA 93438. Include the date you received the chain letter and its method of delivery, as by enclosing the postmarked envelope if the letter came in the mail. Letters nearly identical to one already collected are very useful. Foreign examples, clippings, obscure or foreign references, beliefs and rumors about chain letters, stories of receiving unexpected money in the mail or other personal experiences with chain letters are also welcome. Your comments and suggestions for this article are appreciated.

Overview.
Texts that appeal to superstition to encourage their copying or publication have circulated for over a thousand years. Beginning around 1900, copy quotas and deadlines were added, and claims of divine authorship and magical protection were removed. The resulting "luck chain letters" still circulate, and in over four thousand generations of copying (with variation) they have accumulated ways to increase replication that challenge our understanding.

Using a collection of over 525 dated paper chain letters, we have identified types and variations that appear and disappear over the years. Unexpectedly, it was discovered that, repeatedly, a single letter bearing some new innovation will propagate so abundantly and rapidly that within just a few years its descendants replace all similarly motivated letters in our collection.

Subtle methods that increase replication include:

- The use of ambiguity to deal with such questions as:
  - Does simply passing on the received letter avoid bad luck?
  - Does distribution of copies **after** the deadline bring good luck?
  - Is the letter from a Catholic or Protestant source?
- The transfer of key text from a foreign letter to an indigenous letter, cueing an ethnic minority to misidentify the indigenous letter as the "same letter" that circulated in their home country.
- The assemblage of complementary testimonials, such as
  - One that exploits perceived bad luck by one who is holding the letter, another that exploits perceived good luck.
  - One that motivates an office supervisor to comply, another that motivates a subordinate to comply.

Though most successful variations first appear as deliberate innovations, often the resulting advantage to replication could not have been anticipated. And some highly successful variations likely first appeared as copying errors. By testing hundreds of thousands of variations, chain letters have discovered and exploited secret fantasies and vulnerabilities. In addition to this relentless probing of their audience, they have an internal history marked by the irreversible appearance of new technologies and deadly competition between variations. Our collection supports the view of chain letters as a "mind virus" (Goodenough & Dawkins), a self perpetuating subversion of human will and action. They have evolved independent of our real needs and beyond our control. Billions have been distributed despite near universal public condemnation. Chain letters are "designed" to replicate, not to help anyone. Hope and fear, truth and error, charity and greed, all may be used in service to reproduction. Yet in this terrible freedom lies their one service to humanity: they instruct us on the generality and inexhaustible opportunism of evolution.

Files and Conventions.
Here are the directories (folders) and files in directory /chain-letter/, all pertaining to paper chain letters.

evolution.html **("Chain Letter Evolution" - this file)**
bibliography.htm (Annotated Bibliography on chain letters and pyramid schemes)
glossary.htm (Definitions of terms used for paper chain letters)
/archive/ (Directory containing The Paper Chain Letter Archive, 525 + HTML files)
/archive/!index.htm (Index of filenames in directory /archive/)
/archive/!information.htm (Information on The Paper Chain Letter Archive)
/archive/!search.htm (Search through the /chain-letter/ directory. Provided by FreeFind.)
/e-archive/ (Directory containing emails and posts, 15+ HTML files)
/e-archive/!index.htm (Index of filenames in directory /e-archive/)

The Annotated Bibliography contains over 350 entries and was designed for the author's use in preparing this treatise. Since it may be of use by other researchers I have placed it on-line as a single HTML file and linked citations here to internal targets in the Bibliography. We have chosen terminology that is easily remembered. However many concepts, such as "circulation," have a specialized definition here. Such terms are given in bold when first introduced and defined; some later appearances are linked to a Glossary where formal definitions are given. This facilitates reading sections independently. All paper chain letters cited appear in the /archive/ directory as separate HTML files (archive Information). Errors in the original texts are preserved in the archived versions, and when feasible, each keystroke is preserved. Paper chain letters are our principal focus - email chains are mentioned only incidentally. Those several that are cited appear in the /e-archive/ directory as separate HTML files.

When chain letter text is given in-line it may be slightly edited. Complete texts are indented and may be reformatted. Hypothetical letters and events are given in red. In a sequence of in-line letters, changes over the prior letter are in italics. Italics are also used for text within a paragraph.

The following conventions help the reader decide whether to pursue a link.

- Links to a chain letter are in square brackets. Often the date of a letter is used. Examples: [1959], [Billy].
- Navigational links ahead in this documents begin with a ">". Example: (> Media Chain Letter).
- Navigational links back in this document begin with a "<". Example: (< Start of this section)
- Links to the bibliography are in parentheses, often using the author's name. Examples: (Budge), (NYT, 1935-20).
- Links to the glossary are by the defined word used in a sentence. Example: The Martin letter was self-terminating.
- Links to remote WWW pages are in curly braces. Example: {USPS}.

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1.2 Motivational Categories

Piety. *Luck*. *Charity*. *Petition*. *Money*. *Exchange*. *Parody*. *Chain Email*.

A **chain letter** explicitly directs the recipient to make and distribute copies of itself. Examples reveal that the form and content of a chain letter are highly correlated with the principal motive for its replication. For paper chains the following seven motivational categories apply to almost all the examples one encounters.

Piety.
The **Letters from Heaven** claim to have been written by God or some divine agent. They often command

Sabbath observance and promise the bearer magical protection from various misfortunes. They have circulated in Europe and elsewhere for centuries and were reprinted during World War II. The Letters from Heaven do not quite fit our definition of a chain letter since they do not ask that copies be made. However some did ask the bearer to "publish" the letter, and threatened those who disbelieved. We discuss them later (> Heaven) as predecessors to luck chain letters. The filenames for the Letters from Heaven begin with the letter "h" in the Paper Chain Letter Archive.

Luck.

Luck chain letters appeal primarily to superstition, promising good luck if the letter is replicated and bad luck if it is not. They are often called "prayer" chains because many prior types started with a prayer or Bible verse. They probably developed as a secularization of promises and threats in the Letters from Heaven. The English language paper luck chain letters of the twentieth century will be our principal topic. Most examples in the last few decades are highly traditional, having gradually accumulated varied devices to promote propagation. Luck chains have also been common on the Internet. Though originally these were simply digitizations of paper letters, they subsequently specialized to the email medium [e1995]. Filenames for paper luck chain letters begin with the letter "l" in the archive.

Charity.

A **charity chain letter** requests money or some item be sent to a fixed address, ostensibly for charitable, political or memorial purposes. An 1888 letter solicits dimes for the education of "*the poor whites in the region of the Cumberlands*." This letter states it is an adaption of a previous solicitation, and asks that four copies be sent to friends. For compliance ". . . *you will receive the blessing of Him who was ready to die for us*" [1888]. This is the earliest known chain letter. In an 1889 example an American college student solicited dimes and ten copies [Martin]. This letter claimed to be **self-terminating**: recipients were asked to increment a generation count at the top of the letter until it reached some preset maximum at which time the chain was to stop. This practice continued at least through 1916 [Billy]. But a few years after a letter was launched, only those circulated which had inflated the maximum (NYT 1917). We have two examples of a solicitation for used postage stamps to build a children's ward in Australia (OED). The first is from [1900] and is number 173 of 180 maximum. The second, highly modified, was still in circulation ten years later [1910] and is number 375 of 480 maximum. Recent charity chains are "endless" and some do not ask for money. The Craig Shergold appeal requested get well cards for a dying child (since recovered), intending to break a Guinness world record that existed at the time. It was launched in September 1989 by FAX, email and chain letters. By December 1990 a record 33,000,000 cards had been received (Guigne). Despite efforts to stop the appeal, hundreds of millions have now been sent. Charity chain letters were an influence on early luck chain letters and, 40 years later, enabled the beginning of money chain letters. They are common on the Internet but most are hoaxes {Jessica Mydek}. We include in this category a single example of a request for prayers for missionaries [1905], this in form being very similar to the charity letters of the time. Archive filenames for charity letters begin with "c".

Petition.

Chain petitions request their own reproduction, circulation and delivery of signatures. A early example was an attempt to draft Calvin Coolidge as the Republican nominee for President [1927], but their use in political campaigns goes back at least to 1912 (NYT). An unauthenticated chain letter from the Democratic Congressional Committee asks that three copies be written [1906]. Since this asked that a dollar be sent we have classified it as a charity letter. Other chain petition causes include Czech independence [1949], nuclear disarmament [1985], protests of apartheid [1988], and a misinformed boycott of Proctor & Gamble [1986]. Chain petitions also appear on the Internet, including a perennial appeal to support National Public Radio [e1996]. Paper chain petitions have filenames beginning with "p" in the archive (index).

Money.

Money chain letters urge the recipient to send money to one or more prior senders, claiming that one can

likewise benefit in the future. A managed list of names and addresses is provided. Money chain letters originated in the United States in the spring of 1935 with the "Send-a-Dime" letter, also called "Prosperity Club" [Denver]. We show how a prior luck chain letter [1933] was used as a model for Send-a-Dime (> Origin $). Money chain letters have influenced the content and distribution of luck chain letters up into the 1950's and possibly beyond (sections 4.2 and 4.3). They continue as an omnipresent nuisance to this day, both in paper [2002] and as E-mail [2001]. Money chains and pyramid schemes violate Federal {USPS}and State (West's CA) laws. If filenames in the Paper Chain Letter Archive are ordered by name, money chain letter filenames will appear in a block, all beginning with an "m."

Exchange.

The **exchange chain letters** ask that an item small value, such as a recipe or postcard, be sent to one or more prior senders, promising that if the chain is not broken the sender will in turn receive many such items. They first appeared in 1935, modeling the infamous Send-a-Dime money chain letter [1936]. Within several years they had diverged in form, usually reducing the list of senders [1937]. Unlike luck chain letter types, the copy quota on exchange chain letters varies considerably, as does the number of names present. Exchange chains continue to circulate in paper [1996], but only one example in email form has been collected (a used paperback book exchange). A certain postcard exchange chain letter has specialized to circulate among children [1999], and the most recent versions have dropped the request for postcards and instead rely solely on a new motivational category - the setting of a world record for chain letters [2001]. There is no such record, nor a reasonable means to establish it. Filenames for exchange chain letters begin with an "x" in the archive.

Parody.

Very soon after the first publicity (April 19, 1935) of the Send-a-Dime craze, **parodies** appeared that mocked both the language and the geometrical progression of Send-a-Dime. Examples mentioned in the press include "Send-a-Pint" and the "Drop Dead Club" (shoot the first person on the list). We have obtained complete texts of three early parodies [1935]. The next known examples are the familiar "wife exchange" [1953] and "Fertilizer Club: "*go to the top address on the list and crap on the front lawn*" [1971]. Perhaps these had circulated, uncollected, since 1935. Parodies are often published, but still circulate in different versions like photocopied office humor. There is no serious request for copies, thus technically they are not chain letters. Parodies have probably served to educate the public on the fallacies of money chain letters, and have influenced the content of luck chain letters. They are very common on the Internet [St. Paul]. Paper parodies of chain letters appear in the archive with filenames beginning with "j" (for joke).

Chain E-mail.

For "chain e-mail" (frequently forwarded e-mail) there are a large and growing number of motives for replication. Hoaxes, humor and expressions of friendship are prominent. The following is an alphabetic list of some of the many topics observed since 1993: admonitions (duty to friends, sobriety, safe sex), anti chain letters, aphorisms, ASCII art and scrollers, communication experiments and demonstrations, consumer warnings, friendship, hoaxes (virus warnings, charity, giveaways, false quotations), human rights alerts, humor (single jokes and lists, office humor items, stories), inspiration, Internet protection (modem tax, phone charges, anti-censorship), good luck (often in sex or romance), missing children, money chains, number guessing tricks, parodies, patriotism, personality tests, petitions, poems, political commentary, practical jokes (especially April Fools Day), prayer requests, protests, rumors, school & exams, seasonal (Christmas, St. Valentine's Day, Halloween, Thanksgiving Day), speeches, surveys, tag (snowball fight, mooning), urban legends (warnings, humor), Web page suggestions and voting recommendations. Many of these topics appear in combination, such as a humor item with a short luck chain attached.

Though some e-mail chains begin as digitizations of paper chain letters [e1994] or office humor items [e1995], their subsequent history in the electronic medium, and the chain e-mail genre as a whole, differ significantly from paper chain letters. The main reasons for this are that email is usually reproduced exactly,

and can be distributed in great numbers with little effort or cost. Another difference is that e-mail chains are often posted on various lists and group venues, and likewise if there are any denunciations and refutations these may also receive the same exposure. In comparing e-mail to paper letters, let us disregard the many "fun and friendship" type emails which have no counterpart in paper chain letters, and focus on superstition and deception. We then find that for chain e-mail: (1) few minor variations are present and virtually no accidental variations, (2) initial propagation is accelerated but items have a shorter life span, (3) readers replicate messages for a greater variety of motives, (4) motives for innovation are dominated by hoax and vandalism, (5) probably no innovations are introduced by believers, (6) the e-mail genre through time progresses by large jumps rather than modifications within an identifiable lineage. Though there are some "traditional" themes in chain e-mail, such as virus warnings, there is very little traditional text. Nor is there a future for tradition in e-mail replicators. Increasingly, incorporation of traditional text in a chain e-mail innovation facilitates its automated detection and deletion.

Most genres of chain email are reviled by veteran Internet users for their dishonesty and "waste of band width." On the last point, by reading denunciations one would judge that chain letters are far more despised than pornography. But a typical chain email, including some forwarding statements, uses about 2 kilobytes, whereas a typical color picture uses about 50 kilobytes.

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1.3 SOURCES

The collection of letters . *Table 1 - Contents of the Paper Chain Letter Archive*.
Publications. *Web Sites*. *Interviews*.

The Collection of letters.
I began collecting chain letters in 1973 with the hope they would reveal an evolutionary sequence. This effort was renewed several years later after discovering the folklore literature, particularly Michael Preston's 1976 article "Chain Letters" (Preston). This documented chain letters in a state of flux. Subsequently I placed ads for chain letters in collectibles magazines. Collecting large numbers of more recent letters began in June 1995 when Dr. Preston solicited chain letters for me from folklorists. In recent years I have also purchased old chain letters on Ebay, the immense on-line auction. Sometimes copies were provided free by the seller or buyer, or a transcript could be made from auction photographs.

All of the datable letters (except for some foreign examples and recent money chain letters) have now been digitized in HTML format and each is accessible on-line as a separate file in the Paper Chain Letter Archive. The archive directory also contains an information page and index. The entire /chain-letter/ directory can be searched, including the text of all the letters in the archive, using a site search engine provided by FreeFind. Transcriptions in the archive preserve the errors in the original letter unless otherwise noted. The medium of the letter, its date of circulation, how it was delivered, the provider and other information is documented after the text.

Table 1 - Contents of the Paper Chain Letter Archive.
Chain letters presently in the Paper Chain Letter Archive are tabulated below by year of circulation and motivational category. The Letters from Heaven (13 in number) and foreign chain letters (25), though present in the archive, are excluded from the table.

Years	Luck	Charity	Petition	Money	Exchange	Parody
1885 - 89		3				
1890 - 94						

1895 - 99		2				
1900 - 04	1	3				
1905 - 09	4	3				
1910 - 14	13	1				
1915 - 19	6	4	1			
1920 - 24	9					
1925 - 29	4		1			
1930 - 34	3					
1935 - 39	1	1		37	14	6
1940 - 44	3	1		7	16	
1945 - 49	4		1		7	
1950 - 54	5	1			3	5
1955 - 59	3				2	4
1960 - 64	1	1			1	3
1965 - 69	5				2	1
1970 - 74	11				2	1
1975 - 79	26			6 (a)	6	2
1980 - 84	34			3	4	2
1985 - 89	32	1 (b)	10	2	7	6
1990 - 94	44	1	1	3	4	1
1995 - 99	48	1		3	16	
2000 - 05	5			1	5	
Totals	262	23 (b)	14	62 (a)	89	31
	Luck	Charity	Petition	Money	Exchange	Parody

(a) Over 150 money chain letters have been collected since 1975 but most have not been digitized..
(b) The Craig Shergold appeal circulated widely beginning in 1989 (Guigne). Only two are archived.

The numbers in the table are not reliable measures of relative circulation. An exception are the numerous money chain letters from 1935-1939, all from the 1935 "Send-a-Dime" craze. However the gap afterwards in this column means in part that I did not start saving money chain letters until after 1975. These can be collected by the bushel by answering "sucker ads" and thus getting on "opportunity seekers" mailing lists.

Publications.
Of the over 500 letters in the Paper Chain Letter Archive, over 80 were found in publications, mostly from folklore sources and newspapers. The *New York Times Index* located a few older texts [1916] and a mention of a McKinley Memorial chain before it was collected (NYT 1906). Some French (Le Quellec) and Polish (Robotycki) publications contain many chain letters that have yet to be entered into the archive or translated. The Annotated Bibliography currently contains over 350 entries, many of them newspaper articles on money chain letters or pyramid schemes.

Web Sites.
There are many thousands of WWW sites that match a search on "chain letter." The vast majority of these are

about email chains, which are not our topic here. A useful list of annotated links appears in {Watrous}, and we will not duplicate this. To find the texts of luck chain letters, paper or early email versions, one can search for traditional text such as "*Dolan Fairchild*" or "*Dalan Fairchild.*" A few transcriptions of paper luck chain letters found this way have been entered into the Paper Chain Letter Archive [e.g. 1998]. Others are present on the WWW, but it is difficult to judge if they are complete and unedited. An entertaining survey of chain letters appears in {Meditations on the Chain Letter} by John Burkhardt. Included is a typical paper luck chain letter (a "DL" type) in which many variant readings have been added in parentheses. An article by Charles Bennett, Ming Li and Bin Ma, titled "Chain Letters & Evolutionary Histories" appears in the June 2003 issue of *Scientific American* (Bennett). This uses phylogenetic inference algorithms to construct a cladogram for 33 DL type chain letters. The 33 chain letters used, and 8 additional foreign and outlier types, are also available {chain.html}.

Interviews.
I have obtained some information about chain letters and people's attitudes toward them by informal questioning of acquaintances. Several inquiries about foreign circulation have been made on USENET newsgroups. Much more could have been learned by systematic interviewing. However, people who send out chain letters, for luck or money, are often reluctant to reveal their activities and motives. Nevertheless, some interview material in newspapers and popular magazines has been very useful for understanding replication (e.g. Marilyn Bender, *New York Times, 1968*).

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2. LUCK CHAIN LETTERS

2.1 PREDECESSORS

Ancient documents that advocate their own perpetuation. *The Letters from Heaven*. *Transitions to chain letters*.

Ancient documents that advocate their own perpetuation.
Many ancient texts survive which provide diagrams, incantations or prayers that claim to benefit those who learn them. Some come close to our definition of a chain letter by urging that a personal copy be made. The Ancient Egyptian "*Book of that which is in the Underworld*" states (of a picture it provides):

> The man who shall make a picture of the things which are to the north of the hidden house of the Tuat shall find it of great benefit to him both in heaven and on earth; and he who knows it shall be among the spirits near Ra, and he who recites the words of Isis and Ser shall repulse Apep in Amentet, and he shall have a place on the boat of Ra both in heaven and upon earth. The man who knows not this picture shall never be able to repulse the serpent Neha-hra. (Budge)

Some Buddhists Sutras promised good fortune or spiritual merit for reproducing the text. This spurred innovations in printing technology in Asia.

> The world's oldest extant examples of printing are *dharani*, or magical incantations, printed in Japan between 764 and 770, during the reign of Empress Shotoku. A total of over one million copies of four different dharani from the Great Dharani Sutra of the Spotless and Pure Light . . . were printed to be placed in . . . [one million pagodas] built at the command of Shotoku. In this sutra it is stated that if a person were to build several million small pagodas and place copies of dharani in them, that person's life would be lengthened, evil karma would be expunged, and rebels and enemies would be vanquished. (Mizuno, p. 172)

Most of these dharani were likely printed using copper plates. Surely this Sutra set the all time record for the most copies requested. The Great Dharani Sutra was appealing to monarchs, as with the promise that rebels would be vanquished. The small "pagodas" were probably intended to preserve the documents.

Another Buddhist text, the Diamond Sutra, is the oldest (868 AD) extant book printed by wood block reliefs. It promised great merit to those who "*observe and study this Scripture, explain it to others and circulate it widely . . .*" (Goddard, p. 96)

The Surangama Sutra states:

> "Ananda, should any sentient beings in any of the kingdoms of existence, copy down this Dharani on birch-bark or palm-leaves or paper made of papyrus or of white felt, and keep it safely in some scented wrapping, this man no matter how faint-hearted or unable to remember the words for reciting it, but who copies it in his room and keeps it by him, this man in all his life will remain unharmed by any poison of the Maras." (Goddard, p. 275)

The instructions concerning paper and "scented wrapping" probably intended to promote the long term physical survival of the text. The Diamond Sutra speaks of readers 500 years in the future. Though perhaps unintentional, texts that are traditionally placed in graves may gain readers much further in the future.

The Letters from Heaven.

The "Letters from Heaven" (often called by the German "Himmelsbrief") claim to have been written by God or some divine agent. Many authors restrict the term to apocryphal Christian letters. These often claim miraculous delivery to Earth, magical protection for the possessor, blessings to those who "publish" them and divine punishment for disbelief of their claims. The original copies are often claimed to have been written in gold letters, or with the blood of Jesus. Many published versions were illuminated. An early and frequent feature is the command for extreme Sabbath observance, as in the Madgeburg Himmelsbrief [text].

A German authority on the Himmelsbrief, H. Stube, said the letters long predated Christianity (Oda). Examples in Greek, Arabic, Armenian, Syrian and Ethiopic have been published with German translations. Jewish and Islamic Himmelsbrief are also reported (Hand). These may all derive from an early Greek source (Bittner). A letter which was said to have fallen from heaven existed in the third century AD (Hippolytos, *Refutation of All Heresies*). The oldest Letter from Heaven for which we have a full text is the Latin "Letter from Heaven on the observance of the Lord's day," the original of which dates from the close of the sixth century (Priebsch). St. Boniface denounced this as a "bungling work of a madman or the devil himself." Eckehard (1115 AD) wrote that it had spread over the whole globe then known to man. It has circulated in English in many versions [1863].

Jacob, organizer of the Crusades of the Shepherds, claimed (ca. 1251) the Virgin Mary appeared to him and gave him a letter. While in public he always carried it in his hand. A cult of uniformed flagellants appeared in Germany in 1261 claiming to possess a heavenly letter that had descended upon the altar of the Church of the Holy Sepulcher in Jerusalem before a multitude. The text has survived: God, angry at human sin, has decided to destroy all life, but the Virgin intercedes and God grants humanity one last chance to reform. Any priest who refused to pass on the divine message to his congregation would be eternally damned. During the Black Death (1348-9) the same letter, with a paragraph on the plague added, was used as a manifesto by a revived flagellant movement. At gatherings the manifesto was read publicly, the audience being "swept by sobbing and groaning." (Cohn)

Some Letters from Heaven specialized in protection, and accumulated long lists of weapons by which the possessor could not be harmed. The Count Philip Himmelsbrief [1895] granted protection against "*spear, sword, sabre, cutlass, knife, tomahawk, rapier, helmet, burdon, . . . , and everything prohibited by holy writ, that is from all kinds of weapons, artillery, cannon, musket, rifle, gun or pistol*." A preamble mentions its use

in the American Revolution and claims that Count Philip of Flanders sponsored it after he was unable to execute a condemned prisoner who had secreted a copy on his person. Even in this century, copies of Letters from Heaven were circulated during both World Wars.

Letters claiming divine authority are also reported from India. Chain letters circulated in Shahabad in 1864 that condemned the breeding of pigs and consumption of alcohol. They were said to be from Heaven. In North Tirhut, 1872, cow protection was advocated by "strange papers" which "warned that Jaganath (Lord of the World) would curse any one who did not pay heed to this message and would burn down the house of any one who failed to pass it along to other people." Letters advocating cow protection in 1893 mandated recipients "*make and then issue copies to at least five villages*" - a very early example of a copy quota. (Yang)

An email chain posted to an Islamic coins mailing list [1999] consists of: (1) an Islamic "Letter from Heaven," which likely first circulated in paper, and (2) a reduced version (testimonials only) of a paper luck chain letter we call the Lottery24 type.

Transition to chain letters.
Authors writing shortly after 1900 saw chain letters as new versions of Letters from Heaven (Fogel). Presumably they were familiar with transitional forms now lost. This connection is often reasserted, but without evidence. However, speaking of the apocryphal Letter from Jesus Christ [1915], Edgar Goodspeed wrote "it is sometimes sent through the mail with a request that the recipient send copies of it to three others, as some great misfortune is likely to befall him if he does not" (1931). Such a practice must have long predated 1931. Chain letters may have evolved from the preambles and postscripts to Letters from Heaven. At some stage the divine communication was replaced by a less pretentious "prayer," followed by entreaties to copy it. This is the form of an early type of luck chain letter [1905], the "Ancient Prayer," discussed in the next section. Some versions of Ancient Prayer promise deliverance "*from all calamities*" and threaten "*eternal punishment*" [1906] - as do some Letters from Heaven [Madgeburg]

More collecting, and examination of German sources on the Himmelsbrief, should clarify the transition to chain letters. However, the first luck chain letters may also have been influenced by early charity chain letters [1888], which likely introduced copy quotas.

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2.2 THE MAINLINE

Features of 20th century luck chain letters.
Around 1900 chain letters were influenced by increasing literacy, international mail and postcards, and changing attitudes about religion and miracles. Also chain letters themselves accumulated new technologies of increasing replication. Whereas the prior Letters from Heaven often urged the reader to "publish" the letter, chain letters gained more exposure by relying on individual copying with specific copy quotas and deadlines. The following features characterize luck chain letters of the 20th century.

(1) **Brevity**. The Letters from Heaven typically had over 500 words and were often elaborately printed. By contrast, a widespread luck chain from 1905-17 had about 100 words and was usually distributed by handwritten postcards.

(2) **Secularity.** Luck chains originating in the 1900's dropped claims of divine authorship,

delivery from heaven to earth, granting protection from fire or weapons, divine punishment for disbelief, and miracles generally. A Saint, missionary or military officer may be attributed as the author of the letter, but never Jesus. Promises of good luck and threats of bad luck exploited vague popular superstitions rather than naive piety.

(3) **Copy quota.** Chain letters state a minimum number of copies that the recipient is encouraged to distribute.

(4) **Deadline.** This task is to be completed within a stated period.

(5) **Waiting period**. But according to most letters, one must wait a certain number of days before receiving good luck.

(6) **Testimonials.** All English language luck chain letters since the 1930's contain accounts of fortune and misfortune allegedly experienced by prior recipients of the letter. These testimonials are told in the third person, usually of a named individual.

(7) **Circumnavigation.** Almost all luck chains since 1910 have either (1) declared they are to go "all over" or around the world, or (2) claimed a certain number of completed circumnavigations.

(8) **Lists.** When someone signs their name on a chain letter, a recipient may faithfully copy this name. And another person may sign on, and both names may be copied. The growing list suggests to others that they in turn sign on. Thus chain letters often accumulated long lists of senders [1922]. Initials, dates received [1982], and company letterheads [1990] have similarly accumulated. Lists may reach fifty or more names and become a burden to copy (Lardner). Some chain letters avoided this by instructing, for example, "*Copy the above names, omitting the first, add your name last*" [1933]. If obeyed, this maintains an escalating list of fixed length which we call a **managed list.** Other chain letters forbade "signing on" - notably postcard chains [1911] and Internet luck chains [e1994]. The presence of a senders list on a chain letter may change the motives for sending it and the choice of recipients.

The succession of types.

Chronological arrangement of English language luck chain letters reveals a succession of distinctive **types** that appear and disappear over the years. Changes in the copy quota, deadline, or waiting period (the numerical **specifications**) of a luck chain letter usually change only when there are other key changes in the text. Thus these numbers often provide a convenient means of classification into types.

All known North American luck chains dated from 1905 to 1917, twenty in number, are very closely related letters and postcards which ask that nine copies be made. We have designated this the **Ancient Prayer** type. Thereafter we discover a sequence of types which (1) circulate abundantly for a while, and (2) share much text in common with the prior type. Beginning with Ancient Prayer, we call this succession of related types the **mainline**. The mainline concludes with the "Death-Lottery" type, a group of around two billion letters all derived from a single letter that appeared in the 1970's. Focus on the mainline tradition helps us understand how chain letters "respond" to changing social conditions, and how textual innovations affect replication. Three or four types outside the mainline have also replicated in abundance, possibly dominating the circulation of luck chain letters for a year or so. These are foreign or specialized traditions and, along with some rare types, are discussed in the next section (> Outliers).

Successive mainline types are listed in the table below. Note that there is little temporal overlap except for the 1960's when both quota five and quota twenty letters circulated. Nor is there any significant regional variation within the U.S., nor even between North America, Australia and England. For the **standard** example of a type we use the oldest letter that does not have a major deletion. These standard letters are

needed to define exactly what we mean be a variation within a type. The word counts in the table are for the standard examples, and exclude names in any list that may be present. The deadline and waiting periods are measured in days.

Table 2. Mainline types.

No.	Type	Sample	Years	Standard	No. Words	Quota	Deadline	Wait
1	Ancient Prayer	24	1905-25	Atwood	105	9 (a)	9 (a)	9 / 10 (b)
2	Good Luck	12	1922-32	Birmingham	66	9 / 5	1	9
3	Prosperity (c)	4	1933-45	Hyatt	102	5	1	9 / 4
4	Luck by Mail	10	1952-67	Halpert	132	5 (d)	1	4
5	Death20	7	1959-77	Bloomsbury	193	20	4	4
6	Lottery-Death (LD)	13	1974-75	Maryland	383	24 & 20 (e)	4	9 & 4
7	Death-Lottery (DL)	160	1973-04	AFC	351	20	4	4

(a) Two postcards from England have quota, deadline and wait all seven [1916, 1925]. A late US postcard example has quota 10 copies, deadline 10 days and wait 11 days [1924].
(b) Some examples read nine days, others ten.
(c) Includes two Prosperity type letters re-titled "The Luck of London," [1944, 1945].
(d) "*Send this copy and four others*" - also on a Prosperity example. [1939].
(e) Both numbers appear on the earliest examples.

Of our 254 examples of dated English language luck chain letters, 227 are from the mainline and 27 are outliers. Any paper luck chain letter received in the 1990's was very likely a mainline letter, and the product of over 4,000 generations of copying going back to an original letter probably composed in World War I. But this lineage includes many deliberate innovations, and the addition of an entire Latin American letter onto a mainline letter around 1973. We now describe the mainline types and their inter-relationships. This also provides an opportunity to introduce some topics we will investigate in more detail later in this treatise.

1. Ancient Prayer.
Our earliest example of the "Ancient Prayer" chain is a letter postmarked in Leeds, Maine on January 6, 1905.

> Oh, Lord Jesus Christ, we implore Thee, O Eternal God, to have mercy upon mankind. Keep us from all sin and take us to be with Thee eternally. Amen
>
> This prayer was sent by Bishop Lawrence, recommending it to be rewritten and sent to nine other persons. He who will not say it will be afflicted with some great misfortune. One person who failed to pay attention to it met with a dreadful accident. He who will rewrite it to nine other persons commencing on the day it is received - and sending only one each day will on or after the ninth day experience great joy.
>
> Please do not break the chain. [1905]

This is the oldest luck chain letter in our collection. Here "*He who will not say it will be afflicted . . .*" seems to imply that recitation of the prayer is sufficient to avoid punishment for noncompliance. "Bishop Lawrence" was the Episcopalian Bishop of Massachusetts and a well known author, at least among Protestants. He actively denied that he had anything to do with the chain letter (1926). Later in 1905 a similar letter was denounced in a Catholic publication from France (Bayonne). This version was more influenced by

the Letters from Heaven: a voice heard in Jerusalem during the holy Liturgy predicts terrible punishment for those who do not comply. Beginning around 1910 a persistent new version of Ancient Prayer appeared on U.S. postcards.

> An Ancient Prayer
> Oh Lord I implore thee to bless all mankind. Keep us from all evil and take us to dwell with thee eternally.
>
> *This prayer was sent to me. It is being sent all over the world.* It was said in Jesus time that all who would write it and pass it on would be delivered from all calamities. Those who would not write it on would meet with some misfortune. Those who write it before nine days, ***stating*** the day received, to nine of their friends will on the ninth day receive some great joy. So do not break the chain. *Received Oct. 6. Name unsigned.* [1910]

Above we use italics for text that is essentially different from what is in the prior example. The false attribution to Bishop Lawrence has been dropped, and in its place two statements debut that will appear in various forms on millions of subsequent chain letters. We discuss the advantages to replication of "*all over the world"* later (> circumnavigation). The reward of "*great joy*" for compliance is present on nearly all examples of Ancient Prayer we have discovered (even in Russia?, see Viola, note 59). Most later U.S. versions [1911] introduce the playful suggestion to copy it and "*see what will happen,"* which has persisted [1998].

An interesting feature in the above 1910 text is the word "***stating,***" seen to be a copying error for "*starting*" by comparison to other examples [1908, 1911]. The recipient has responded to this error by writing the date (Oct. 6). An abundant variation was soon established in which the date of receipt was recorded [1912, 1914, 1915]. The advantage to replication of this practice was probably that it reminded the recipient of the impending deadline, whereas undated postcards could be more easily ignored until the recipient realized the deadline had passed with no ill effect. The role of copying errors in chain letter evolution can be overestimated, as compared to deliberate innovations. But for any copying error to produce a successful variation is remarkable, and we will investigate further possibilities of this (> Quota 24).

Some Ancient Prayer examples are self titled "*The Endless Chain*" [1911], or "*The Endless Chain of Prayer*" (Fogel, 1908, 1925). Chain letters as we know them were originally called "Endless chain letters" (NYT, 1906) to distinguish them from the then familiar self-terminating charity chains.

With U.S. entry into World War I in 1917, Ancient Prayer proliferated and differentiated. Some were exclusive within various fraternal organizations; some prayed for "peace" and others for "victory." The chain was so numerous that the editors of the *New York Times* proposed that it originated as a German plot to clog the mails (NYT, 1917d). A wartime postage rate increase, from one to two cents for postcards, may have cooled the chain off and foiled the Huns. The same chain postcard with substituted titles had also served the martial spirit of the Central Powers. A German language version, postmarked in Austria a year before the start of World War I, begins "*We Germans fear God, and Nothing else on Earth!*" [1913]. After the war was over Ancient Prayer declined in the U.S. and England. Some resented that "during the First World War they and many people they knew had received letters threatening death or horrors to their loved ones in the trenches of France if the chain was broken." (Simpson 2000). One isolated late example has copy quota ten and a new prayer [1924]. This suggests that the war related prayers [1916, 1917] had completely captured circulation, and thus the end of the war required invention of a new prayer. Foreign collecting will likely reveal the worldwide circulation of Ancient Prayer.

2. Good Luck.
According to early reports (1948, 1968) and some chain letters, the Good Luck letter was started by an

American officer serving in World War I [later, on a "*Flanders battlefield,*" 1927]. However our earliest examples come from 1922, a boom year for the chain both in England and the U.S. These usually had long lists of paired names at the top, sender to receiver [1922]. Here is an example published by Ring Lardner (he omitted the names):

> Good Luck
> Copy this and send to nine people you wish good luck. The chain was started by an American officer and should go three times around the world. Don't break the chain for whoever does will have bad luck. But do it in 24 hours and count nine days and you will have good fortune. [1922]

The text was brief, secular and had no testimonials. It did not borrow much actual text from Ancient Prayer, but employed the potent tools of copy quota, deadline, waiting period and circumnavigation that Ancient Prayer and uncollected predecessors had pioneered. It retained the use of nine for its copy quota and waiting period. However it shortened the deadline from nine days to "*twenty-four hours*." In 1928 the letter was still circulating in England (Burrell), as were longer French, Italian and Swiss versions (Deonna). A late example [1931] from Florida contains the leading paired names characteristic of the 1922 English language letters, but otherwise is closely related to a Good Luck letter given by Deonna three years previously, very likely being a translation from the French [1928]. Further into the Great Depression, quota nine luck chain letters disappear from our collection and "*prosperity*" is sought rather than "*luck*." Luck returns to favor during World War II, but we never again see a request for nine copies in North America. However, fragments of the Good Luck letter, such as sending to "*people you wish good luck*," still appear on chain letters from around the world [1990].

3. Prosperity.

Folklorist Harry M. Hyatt reported (1935) that "during the latter part of 1933 a 'chain letter' fad appeared" and he gave a nearly complete [text]. This letter had a list of six sender's names and cities at the top of the letter and instructions to:

> *Copy the above names, omitting the first. Add your name last.*

This is our earliest example of a **managed list**, a crucial technology of chain letters. The body of the letter shared features of the prior Good Luck chain, including the attribution to an American officer, the 24 hour deadline and nine day wait. However the copy quota is reduced from nine to five, as on two chain letters [1929, 1932?] which are intermediate between Good Luck and the Hyatt letter. Here is the full text of an unpublished example [1939] of this "**Prosperity**" type:

> The good luck of Flanders was sent to me and I am sending it *within twenty four hours*. This chain was started by an American Officer in Flanders and is going around the world *four* times - and one who breaks it will have bad luck. Copy this letter and see what happens to you four days after mailing. *It will bring you good luck.* Send this copy and four others to people you wish good luck. Do not keep this letter. *It must be in the mail twenty four hours after receiving it.*
>
> *Mrs. Gay Field received $5000, five hours after mailing.*
>
> *Mrs. Ambrose received $4000, four hours after mailing.*
>
> *Mr. Nevin broke the chain and lost everything he had.*
>
> *Here is definite proof for the good luck sent prayers.*
>
> *Good luck to you and trust in God. He who suffers our needs.*
>
> *This brings prosperity to you in four days after mailing.*

> *Do not send money. Cross the top name off and put yours at the bottom.*
>
> [A list of 8 names and cities of residence follow, the first two crossed out.]

The three testimonials are similar to those on Hyatt's 1933 example. Testimonials of receiving money appear on French letters from 1928, but apparently these letters did not have lists of recipients [Deonna]. Probably the Prosperity letters developed after someone added the list management instructions to a Good Luck letter. These changes eventually led to the advent of money chain letters in 1935 (> Section 4.1).

Note that the command "*Do not send money*" has been added near the bottom. This appears on all subsequent mainline letters to this day. We analyze the replicative advantage of this command in Section 4.2 (> Divergence). Some text in this 1939 letter (. . . *was sent to me, . . . see what happens*) suggests it has been influenced in some circuitous route by an Ancient Prayer letter.

3a. The Luck of London (sub-type)

We have located only eleven luck chain letters that date from 1930 to 1951. Thus at present it is difficult to delineate a mainline in this period, or to estimate relative circulation. But we can rely in part on observations at the time. The previous Prosperity type was, according to Hyatt, a fad in Illinois in 1933, and hence we can presume it was a fad elsewhere. "The Luck of London" chain letter is said to have originated during the blitz (1940) and continued to circulate after the war (DeLys, 1948). The following example was collected by Jean Reherman in Oklahoma.

> *One flag, One country*
> *The luck of London*
>
> *The luck of London* was sent to me, I am sending it *on to you.*This was started by an American officer, -It has been around the world four times. Copy this and see what happens four day's later! Send this and four copies to people you wish luck.
>
> Grace Field won $45,000 after sending it. *Dr. F. A. Anderson won $25,000 but lost it because he broke the chain.* It will bring *luck* to you four days after mailing it. Do not send money. Do not keep this letter. It must be mailed 24 hours after receiving it. *Good Luck.* The one who breaks the chain will have bad luck. [1944]

With its changes in italics, we see that the Luck of London letter is basically a Prosperity type letter with a new title, "*The Luck of London,"* replacing "*The Good Luck of Flanders*" [1939, and < as above]. Also the "*American officer*" is no longer located in "*Flanders*," further suggesting to a reader that the letter is a World War II creation. All the numerical specifications remain the same. No list of prior senders is present on our two examples, whereas these were present in the mainline before and after. There is a shift from seeking "*prosperity*" back to promising "*luck*," understandable considering the full employment and high war casualties of the time. Despite these shifts in motivation, the actual changes in the text are so small that we have classified The Luck of London chain letter a variation of the prevailing "Prosperity" luck chain letter of the Depression Era.

Someone must have deliberately replaced the previous title, "The Good Luck of Flanders," with "*The Luck of London*" title as above. Some, or all, of the other changes may have already been made on the letter at that time, such as the updating from World War I to II. This is typical for successful chain letter innovations: not too much is added, and changed text often mimics the prior text. A traditional chain letter is exactly what has survived thousands of receipts. Successful innovation requires respect for this received tradition since the

letter will bear adaptions that are not understood. Further, there will be recipients who have a magical loyalty to the traditional letter, perhaps because it seemed to work for them once. They will not remember the exact wording of the letter they used, but they are unlikely to tolerate a complete rewrite. Thus in the history of chain letters, certainly since the 1920's, successful innovations are overall conservative: they may be bold in updating themes, but are unlikely to introduce entirely new themes. We examine successful innovations very closely in this treatise. This reveals the mastery of those few anonymous folks who deliberately nudge chain letters along now and then.

4. Luck by Mail.

In 1952 Folklorist Herbert Halpert received a chain letter which we have designated a new type, "Luck by Mail," even though the numerical specifications were unchanged. The text follows, with novelties in italics.

> This Prayer has been sent to you and has been around the world four times. The one who breaks it will have bad luck.
>
> *The Prayer. Trust in the Lord with all thy heart and lean not on thy own understandance in all thy ways acknowledge him and he will direct thy path.*
>
> Please copy this and see what happens in four days after receiving it. Send this copy and four to someone you wish good luck. It must leave in 24 hours. Don't send any money and don't keep this copy. *Gen Patton received $1,600 after receiving it. Gen Allen received $1,600 and* lost it because he broke the chain. *You are to have good luck in 4 days. This is not a joke and you will receive by mail.* [1952]

This is the debut, in our sample, of Proverbs 3:5-6 ("The *prayer*"). This was copied on hundreds of millions of subsequent chain letters, though it is absent on some other Luck by Mail examples [1953, 1954].

Note the famous General Patton appears here, and also, well known at the time, Major General Terry de la Mesa Allen. The implication that a highly esteemed General sent the letter out could certainly boost replication. The descendants of these testimonials still appear fifty years later, the names and amounts having undergone countless variations due to copying errors. Such changes are often the first discrepancy noticed by observant readers, and thus may serve to discredit chain letters with the public.

The Luck by Mail type also introduces "*this is not a joke*" and the qualification that you will receive your luck "*by mail*." These are now mainline universals, and we judge the latter to have been the innovation most responsible for the predominance of this type in the 1950's. This hypothesis involves a possible relationship with money chain letters (> Luck Follows Money).

A less obvious innovation in Luck By Mail is the unconditional declaration that by receiving the chain letter "*you are to have good luck*." In contrast, the Luck of London letter promised luck "*four days after mailing it*." This illustrates two contradictory beliefs about chain letters: in the first only the act of distributing copies brings good luck, in the second the letter is a talisman which by mere possession brings good luck. We give more examples of this dichotomy later (> Copy First, Copy Later), and discuss how textual ambiguity on this issue may benefit replication.

Luck by Mail continued to circulate well into the 1960's, in many variations. This is surprising since a potent innovation appeared in 1959.

5. Death20.

A chain letter mailed from Bloomsbury, New Jersey in 1959 has large blocks of text in common with the Halpert "Luck by Mail" letter given above, including the corrupted Proverb, four day deadline and nine day wait. But near the end a new testimonial has been added:

> *While in the Philippines, General Walsh lost his life 6 days after receiving his copy. He failed to circulate the prayer. However, before he died, he received $665,000.00 he had won.* [1959]

This is the first appearance of an implied death threat in the mainline, though we have Wickets' account that the Sabbath letter [1902] accumulated a much more severe threat. This "**Death and Money**" testimonial is now on all mainline letters. Immediately after news of this shocking reversal of fortune appears the polite request:

> *Please send 20 copies and after see what happens to you on the fourth day.*

The copy quota has been increased from five to twenty! Because of this burdensome quota, backed by an implied death threat, we call this new type "**Death20**." It also seems to have introduced the puzzling title "*Think a prayer*" (or "*Thing a prayer*") which was common until 1979. This may have been a corruption of "This prayer." All Death20 letters collected contain a trailing list of senders.

It is reasonable to suppose that chain letter copy quotas have increased because of the availability of photocopying. But in 1959 copiers were not readily available - this is the same year that Xerox introduced its first plain paper copier (the Xerographic 914).

Our next example of Death20 is from 1967 (Ace). Without the 1959 Bloomsbury letter one might have guessed at a much later origin for Death20. Possibly it circulated largely in the business and professional communities in its early years. The Bloomsbury letter comes from a hospital and appears to be typeset.

The Death20 chain still circulates, but an entire chain letter has been added to it.

6. Lottery-Death (LD).

Apparently in the early 1970's a quota twenty-four chain letter was translated from Spanish into English and put into circulation in the U.S. or Canada. Abundant copies of this letter exist combined with Death20, but no examples of it as an independent letter have been collected. We name this type "Lottery24" because of the original copy quota and its introduction of the "Boss Wins Lottery" testimonial:

> *Constantine Diso received the chain in 1953. He asked his secretary to make 24 copies and send them. A few days later, he won the lottery of 2 million dollars in his country.*

State lotteries were spreading in the U.S. in the 1970's and this letter must have appealed to those holding lottery tickets. Since Lottery24 by itself is an outlier that has never been collected in North America, we do not include it as a mainline type. Probably it did circulate abundantly in South America in both Spanish and Portuguese versions, and it was there that it acquired its testimonials adapted to office culture and state sponsored lotteries.

Around 1973 Lottery24 (L) letters were combined with Death20 (D) on single pages in the two orders LD and DL. This event was documented with unedited multiple examples by Michael Preston (1976). Perhaps a motive for combining the chain letters was to reduce photocopying costs after the two had been received at about the same time. Our earliest example of the combination Lottery-Death (LD) is a letter mailed from Maryland in 1974.

Saint Antoine's

> *This chain that comes from Venezuela was written by St. Antoine de Sedi missionary from South America. Since this chain must make a tour of the world, you must make 20 copies identical to this one, and send it to your friends, parents or acquaintances and after a few days you will get a surprise.*
>
> *Take note of the following:*

Constantine Diso received the chain in 1953. He asked his secretary to make 24 copies and send them. A few days later, he won the lottery of 2 million dollars in his country. Carlos Brandt, an office employee, received the chain. He forgot it and lost it. A few days after, he lost his job. He found the chain, sent it out to 24 people, and nine days later, he got a better job. Zerin Berreskelli received the chain, not believing in it he threw it away. Nine days later he died.

For no reason whatsoever should this chain be broken!!!!!! Make 20 copies and send them. In nine days you will get a surprise. Write F.E.G.E. in the right hand corner of the envelope instead of a stamp.

THINK A PRAYER
Trust in the lord with all your heart and all will acknowledge that he will light the way. This prayer has been sent to you for good luck. The original copy came from the Netherlands. It has been around the world nine times. The luck has been sent to you. You are to receive the good luck within four days after receiving this letter. It is not a joke! You will receive it in the mail. Send 20 copies of this letter to people you think need good luck. Please do not send money. Do not keep this letter. It must leave within 96 hours after you receive it.

A U.S. officer received $7,000. Don Elliot received $68,000, but lost it because he broke the chain. While in the Philippines, General Walsh lost his life six days after he received this letter. He failed to circulate the prayer. However, before his death, he received $775,000, which he won.

Please send 20 copies and then see what happens the fourth day after. Add your name to the bottom of this list and leave off the top name when copying this letter.

[A four column list of 33 names follows, six struck out, several in different hands] [1974]

The copy quota in the Lottery portion is stated as both 20 and 24. The earlier 24 quota was soon changed to 20 for consistency with the Death20 block. Lottery24 proclaims Venezuelan origin, contains Spanish surnames, and cognate letters still circulate in Brazil [1994]. Further, it is unlike Mexican letters, so its South American origin seems likely. The title "Saint Antoine's" is a traditional European and Latin American attribution for chain letters.

The above device, "*Write F.E.G.E. in the right hand corner of the envelope instead of a stamp,"* appears on many LD chain letters. Various initials were recommended (some without the instruction to omit the stamp), and examples also come from France (Bonnet and Delestre) and the USSR. The instruction to omit a stamp seems severely counter-replicative. However the original initials may have been "F.M.B.H" standing for "Free Matter for the Blind and Handicapped." Current postal regulations allow free postage for legitimate purposes if the quoted sentence is written where normally a stamp would appear. Someone in the early 1970's probably misused the privilege in order to mail chain letters for free, protected from official reprisal by anonymity. Most recipients would be baffled by this suggestion, but many would repeat it to save postage. Since the initials were meaningless to most copiers, they would soon be corrupted. In disbelief, some copier dropped the instruction to omit a stamp and advised the initials be written on the upper left hand corner of the envelope. These versions may have benefited by being opened more often than a letter with nothing at all where one expects a return address. The mysterious initials may have themselves spurred interest in the chain. Current U.S. postal regulations require that an envelope claiming free matter be unsealed to allow examination of the contents. Dr. Jean-Bruno Renard has collected an interesting chain letter in France that revives the use of initials as a substitute for a stamp [1999].

The LD type was prolific in 1974 - 1975, and also circulated in the U.K (Times, 1974). Some Hungarian chain letters [1983], though much reduced, reveal descent from an LD source. By 1980 the Lottery-Death

letters had been completely replaced in North America by our final mainline type, the "Death-Lottery" letters.

7. Death-Lottery (DL).
The DL combination first appears in our sample with a Canadian example [1973] published by John Robert Colombo (1975). However, since its lineage had major deletions, we have chosen a letter supplied by the American Folklife Center, Library of Congress, as our standard for the type [1974]. At first the Death20 block retained its customary senders list, now as an internal list, the Lottery block following. This awkward requirement was deleted in the mid 1970's and such versions were more propagative. Though we do not use formatting to infer lineage, the most common paragraphing of a DL letter violates the unity of the Lottery24 block, placing "*Please send 20 copies of the letter and see what happens in four days"* immediately before "*The chain comes from Venezuela and was written by . . ."* [1983]. This may aide propagation by disguising the compound nature of the letter and its resulting redundancy and contradictory claims of origin.

The DL type was temporarily eclipsed by LD letters during 1974-75, but a hyper-competitive lineage of DL letters completely replaced them before the end of the decade (the It Works postscript described in > Section 4.6). Thus all mainline luck chain letters since 1980, certainly over a billion, have been the DL type. Within this type are variations that compete with each other for the attention and resources required for replication. The advantages of some of these variations are easy to explain (> Section 4.7).

The Death-Lottery type luck chain letter has proven to be the most successful paper chain letter in history, not only in the sheer numbers produced but also in its migration to other countries. Surely it originated in North America (around 1973), since this region nurtured the independent circulation of the Death20 component, and the many early variations, including the unsyncretized 24 copy quota in the Lottery24 component (in LD letters only, as < above). From North America it has spread to many countries. Examples so far collected are listed below - each of the foreign language texts is supplied with an English translation.

- A French chain letter [1979] is a translation of the early DL variation with an internal list of senders [cf. 1975] .
- A later French letter [1995] is based on another translation [cf. 1994].
- A Polish letter [from 1986] is a reduced and rewritten descendant of a 1970's DL translation [cf. 1973].
- A later Polish letter [1992] "*has been sent to you to make you happy."* [cf. 1987]
- We also have a much reduced Russian example [1989] that "*has been around the world 800 times*."
- A 1996 English language letter headed by devotional images [text, image], collected in the UK but presumably from India, asks that you ". . . *make 30 copies and send them after worshipping Shri Saibaba in your house***."**
- An English language email post [1999], derived from some uncollected paper source, has an Islamic Letter from Heaven followed by a component containing descendants of three classic testimonials of the Lottery24 type (Boss Wins Lottery, Lost Job - Better Job, and Unbeliever's Death). These could have derived from an independent Lottery24 letter, but more likely derive from a DL letter in which the entire Death20 component has been replaced.

Despite the success of the DL type letters in the 1990's, their circulation, at least in English, has collapsed since the new millennium (> *All fall down*).

< Start of above section < Start of Chain Letter Evolution - Contents

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2.3 OUTLIERS

Sabbath. *Anthony13*. *Novena*. *Chain of Good Luck*.
The Brill Letter. *Mexican Letters*. *Romance Game*. *Others*.

We have 27 examples of English language luck chain letters that lie outside the mainline. These group into several types.

Sabbath.
The Sabbath letter [1902] circulated shortly after the turn of the century and was self titled "The Prayer Chain." It is known from only one obscure source, Donald Wickets, writing over thirty years later (1935). The letter protested Sabbath violations such as Sunday theater and beer sales and did not promise any personal benefit to participants. Promotion of Sabbath observance was characteristic of many Letters from Heaven. The chain set a copy quota of seven and a deadline of seven days. This is the earliest example of a deadline on a luck chain letter - a feature present on most subsequent chain letters. Later a harsh threat against breaking the chain was added which accelerated replication, including international circulation. According to Wickets the letter folded because some early senders "received their echoes" and because it failed to halt the activities it protested.

No example of a Sabbath chain letter has been collected, but a commercial "traveling postcard" advocating temperance is present in the "various" category in the archive [1908].

Anthony13.
A brief article in the *Pittsburgh Press* (1938) mentions a "message to St. Anthony," that was "making the rounds." Though little text is given, it asked for 13 copies and circulated on postcards. It was very likely an ancestor of the following chain letter mailed anonymously on a postal card from Cumberland, Maryland in 1941:

> *This Prayer: Prayer of Safety must go all over the world by card. So when you get this card send it to thirteen persons and on the 13th you will receive $86 dollars. One woman made fun of it and on the 13th day her daughter went blind. So pray attention to this card. God bless you . Read Matthew 10th chapter.* [1941]

We have one other example, a postcard from California [1942]. These two collected luck chains have dropped mention of St. Anthony and both threaten blindness in the family as a punishment for ridicule. From the earlier 1938 title we name this type **Anthony13**. It is somewhat similar to a published quota 13 Polish chain [1984], a "Letter to St. Antony." Perhaps an ancestor of this Polish letter circulated among Eastern European immigrants in the Pittsburgh area in the late 1930's, its English translation giving rise to the "message to St. Anthony." One reporter recalls (1952) that the Anthony13 chain postcard dominated luck chain letter circulation during the 1940's.

In 1941 the Post Office would have considered the Anthony13 postcard chain to be unmailable, as it violated U.S. Code Title 18, section 1718, which prohibited language of a "threatening character" on postcards or the outside of an envelope. However, this law was ruled unconstitutional in 1973 because it was "overly broad and violative of First Amendment guarantees of freedom of expression" (Tollett v United States, 485 F2d 1087, from USCS). Luck chain letters inside envelopes have always been mailable. Thus, despite many statements to the contrary, mailing luck chain letters, threats and all, is not against the law. Presumably this applies to E-mail also. The *ethics* of communicating threats is a different issue. Money chain letters violate various Federal and State laws {USPS}.

Novena.
A rare prayer chain letter from the closing months of World War II asks that one say a Hail Mary or Our Father once a day for nine days, this as a prayer for peace [1945-02]. Four copies are requested within four days, but the letter claims it is "*not a chain letter*." The sender gives her name and address, and also, as requested in the text, the name of the person from whom she received the "*Novena.*" "*Notice what happens to you on the fourth day."*

From Canada and the new millennium we have another short chain letter that calls itself a "*Novena*" [2000]. It asks that you say four Our Fathers and four Hail Marys on the day of receipt. It also asks for four copies ("*hand written*") and denies it is a chain letter. "*Watch what happens*." This could be a distant relative of the 1945 letter.

Chain of Good Luck.
We have collected two corrupted examples [1949-Burma, 1949-Japan] of the self titled "Chain of Good Luck." These are said to have been started by a French officer in Africa and bear testimonials about a private in the Philippine army and U.S. President Franklin Roosevelt. The first copy states a copy quota of 12, high for the time. The second copy, found in Japan, is close to the Burma letter but even more corrupted. It has even lost its copy quota, which is surely a fatal mutation. That both our examples are foreign letters (in English) probably represents more collecting bias than a feature of the letter's distribution. It is probably the same type of letter that is mentioned in the *Berkeley Daily Gazette*, as cited in *Western Folklore* (1950).

The Brill Letter.
Starting around 1979 a comical rewrite of a DL letter circulated that featured a long list of celebrity names [Brill]. Said to have originated in the Brill Building, it asked for thirty copies and used entertainment industry parlance. All four of our examples date from 1979-80. Perhaps it died out because the celebrity names escalated off the list.

Mexican Letters.
English translations of Mexican letters circulate in the U.S. in low volume. A 1984 example [text] from Oxnard, California has a brief Tagalog addition at the end, and a comment on this in English. The letter has a quota of twenty-four copies, a deadline of nine days, and a thirteen day waiting period. I have been informed that older Mexican letters had a copy quota of thirteen. A recent related letter has two blocks of Tagalog and much transformation of the testimonials [2004].

An English only example [1995], from North Carolina, represents a separate tradition. It states: "*This chain would be sent with five cents which will be donated to the church*." There was a nickel taped head up on the letter. This request was also present in an untranslated Mexican letter mailed from Pasadena [1980]. A dime was taped on this letter. This sending forward of money seems to be unique with Mexican luck chain letters and is a striking contrast to U.S. mainline letters of the same period which instruct "*do not send money."* This command on U.S. mainline letters appeared in the 1930's and functioned to differentiate luck chain letters from the exploding population of money chain letters at that time (> Section 4.2). Thus this forwarding of a small coin may date from the 1930's also, and may be a different solution to the same discard problem that English language luck chain letters faced. It may also have served to differentiate Mexican letters from translated U.S. luck chains. Hopefully older Mexican letters will be discovered that can explain the origin of this feature.

Romance Game.
We have four examples of a classroom note typically passed between young teenage girls. The following was intercepted from a 13 year old girl by a teacher in California in 1995.

> To a girl in school,
> This is a romance game from 1812. Copy this letter word by word within 4 days. Give it to 8 people (no guys). This is no joke. It has worked for 70 years. On the fourth day drink a glass of milk and say his name (the boy you like) 5 times. Within the 6th day he will ask you out. If you break the chain you will have bad luck. This starts as soon as you read this letter.
> GOOD LUCK [1995]

These hand copied letters are highly variable. Our paper examples date from 1992-98. In recent years it has invaded the Internet and appears in diversified forms on email replicators dealing with sex and romance

[e1995].

Others.
A chain letter request that prayers be said for missionary efforts has a generation number (152) but does set a termination [1905]. A luck chain letter titled "The Fortune Chain," featuring early testimonials, is a translation of a French language letter [1931]. We have collected only one circulating paper luck chain letter that is composed completely independent of any textual tradition [Xmas, 1975]. Though it is little more than an obsession with geometric progression, the photocopy appears to have gone through several generations. From the Southern U.S. comes a "prayer exchange" letter that asks the recipient to "*say a little prayer for each of the five persons listed below*" [1985]. Beginning in 1989, a quota five luck chain letter characteristic of those circulating twenty-five years before experienced a dramatic revival. We describe this "Media Chain Letter" in > Section 4.5. Like marine mammals, an email luck chain [1998] has returned to the paper medium from which it originally crawled in the early 1990's.

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3. HOW CHAIN LETTERS WORK

3.1 POPULATION DYNAMICS

Propagation. *Exponential growth*. *Circulation and generation time*. *Billions of chain letters*. *The Great advantage of a small advantage*. *Immunization*. *Exponential decline*. *The One-in-a-hundred rule*.

Propagation.
Modeling chain letter circulation and its changes requires terminology be defined with care. We will refer to a chain letter variation, say V, and a given time t. Here V may be a single chain letter or a group of related letters. First we specialize the use of the term "propagation" so it measures the "fitness," or replicative success, of a chain letter.

> The propagation of variation V at time t is the total number of receipts of V in the month following t.

By "receipts" we include passing on of a received letter, first generation copies and any subsequent generations that are received within the month. The one month interval is somewhat arbitrary, but is long enough that if a letter is going to replicate, first and second generation copies should have been received by then. Propagation as an absolute number can only be roughly approximated and is not used here. Instead we analyze what may affect propagation positively or negatively, or compare two propagations. A basic assumption of this treatise is that the propagation of a variation roughly corresponds to the number of examples in our dated collection. However there are many collecting biases:

- old chain letters are more likely to have been lost or destroyed than recent ones
- however chain letters mailed after 1950 are unlikely to be offered by collectibles dealers
- postcards are more likely to be saved than letters
- envelopes with foreign stamps are more likely to be saved than those with US stamps
- students usually supply chain letters received during months when school is in session
- hoards of chain letters received in a narrow range of time become available
- our methods of collecting and the effort spent on this vary widely over time.

Exponential growth.

Many perceptions of chain letter "booms" are reported and some show up in our collection. To model these booms we use a familiar type of population change called "exponential growth." **The reader may skip the mathematics in this section with no loss of comprehension later.**

During **exponential growth** the increase in a population is proportional to the number of individuals in that population. If y = y(t) designates the population at time t, this condition is dy/dt = ky, k a constant called the **growth constant**. Solving this differential equation gives

(1) $y(t) = y_0 e^{kt}$

where the constant $y_0 = y(0)$ is the population at time t = 0 (the "initial value" of y).

The word "growth" here can be misleading. The population y is decreasing if $k < 0$, stable if $k = 0$, and increasing if $k > 0$. For a chain letter variation V, we interpret the population y as the number of "active" letters present, that is, ones that have been received and still have a reasonable chance of being copied. This might be the letters received within the last month. Approximate exponential growth will occur when a replicator first enters and disperses through a large homogeneous population of enablers, "homogeneous" in the sense that the population's susceptibility to producing copies is constant throughout.

For some interval of time P, the "P rate of growth" compares receipts in successive intervals of P days. For a chain letter variation V let y(t) be the number of active letters at time t. Then the **P-rate of growth of V at time t**, $p(t)$, is

(2) $p(t) = [y(t+P) - y(t)] / [y(t) - y(t-P)]$.

So with P = 30 days, the "**monthly rate of growth**" at time t is the propagation at t divided by the propagation a month previously. In contrast to the growth constant, rates of growth greater than 1 produce a population increase. If V is undergoing exponential growth then by equation (1), $y(t) = y_0 e^{kt}$ where k is the growth constant. Using this for y(t) in definition (2) gives $p = e^{kP}$. Note this is independent of the initial population y_0 and the time t, but it does depend on the time interval P. Solving $p = e^{kP}$ for k gives $k = \ln p / P$. So if a population is doubling ($p = 2$) per month (P = 30 days), then the instantaneous growth rate is $k = \ln p / P = \ln 2 / 30 = .023$ (time measured in days). Using $k = \ln p / P$ in (1) gives the population y at t days as

(3) $y(t) = y_0 p^{t/P}$

where, as before, y_0 is the starting population of active letters. So if a variation is launched with 20 copies, and (presuming exponential growth) its monthly rate of growth is m, after t days there will be an active population of $y = 20m^{t/30}$ of these letters. We do not have a sufficient sample to accurately estimate the growth constant of a variation, or even to verify if its growth is exponential. Exponential growth is used instead as a conceptual tool to understand rapid increases and decreases in propagation. Such changes are very evident in the collection.

With money chain letters, one hopes that some solicitation or possibility of receiving money increases exponentially. Of course not all these opportunities result in a payment, but perhaps a constant ratio of them will. We call such a process of multiplying opportunity **exponential feedback**. It is (taken in historical order) the goal of pyramid sales, money chain letters, pyramid schemes and multilevel marketing. The reality of all these schemes escapes our simple numerical formulation. But the importance of exponential feedback processes is more as an idea, a vain hope, rather than a reality.

Circulation and generation time.

The propagation (receipts in the next month) of a chain letter depends not only on the number of copies circulating, but also on how fast they are being replicated. Circulation can be given a precise definition.

> The **circulation** at time t of a chain letter variation V is the number of V received after time t whose parents were received prior to t.

The "parent" of a chain letter is the letter from which it was copied - it is extremely rare that a letter may have more than one parent, or none. The circulation at a given time is simply the number of letters in transition from one person to another, which includes those letters being held but which will eventually be distributed, and those in the mail or otherwise awaiting receipt.

Certain phenomena, notably astronomical appearances, regularly repeat after an exact amount of time has elapsed, called the period or **generation time**. Some ancient social replicators also repeat regularly; such as sabbath observances and seasonal ceremonies. We identify yearly ceremonies with their calendar date, but historically the solar calendar itself can be seen as a technology to better perpetuate existing seasonal replicators.

A chain letter may be copied over and over, and if the time between these events were always the same (the generation time), we would have a periodic replicator**.** Such regularity does not occur for chain letters, but for estimation purposes we may assume it does, and use the following average for its generation time.

> The **average generation time** of a chain letter variation V is the arithmetic average of elapsed times from receipt to receipt of V.

Surprisingly, the average generation time can be estimated fairly closely for some letters. The mainline luck chain letters since 1970 have specified that the letter "*must leave your hands in 96 hours***.**" Adding three days in the mail suggests the generation time may be about one week. Confirmation of this comes from letters which bear lists of dates. Apparently these developed after a single date was placed at the end of a copy and a recipient behaved the same without removing the prior date. The list of dates suggested to downline recipients to add the date also, probably most not realizing there was no such instruction in the letter. In one example there are 72 dates from Aug. 7, 1979 to Dec. 23, 1980 [Bloomington]. This gives an average interval from receipt to receipt of 7.0 days. A second example has 34 dates with an average interval of 7.8 days [Wenatchee]. Probably some senders did not add a date, so the average generation time for these two letters was likely somewhat less than one week.

It is convenient to assume that copies of a chain letter appear periodically, and take the universal period to be the average generation time. Our arithmetic average does not work so well for this, since it will appear in an exponent. But calculations are very rough here, and the error involved under-estimates propagation as we wish, since we are going to estimate some very large numbers. For a periodic letter V with generation time exactly G days, every letter in circulation will be received once between times t and t + G. So the circulation of V at t is simply the count of receipts from t to t + G. Thus the generation time provides a natural choice of a time interval for approximations involving exponential growth and circulation. Circulation of a chain letter is analogous to the familiar notion of circulation of a periodical - the number of copies mailed per issue. Like propagation, actual circulation numbers for chain letters are not easy to determine, though rough estimates can be made.

Billions of chain letters.

Based on informal polling, a typical adult receives about 4 luck chain letters per decade. Thus for a recipient population of a quarter billion English speaking adults (U.S., Canada, and the U.K.), in the two decades from 1980 to 2000, two billion English language luck chain letters were received. Approximations here are crude, but numbers derived likely under-estimate the phenomenon described.

As calculated above, mainline luck chain letters during these years had a average generation time of one week. Then the estimate of 2 billion received for 20 years (1043 weeks) implies an average circulation (receipts per week) of around 1.9 million. Many chain letters are distributed by hand. Considering this and taking three days from posting to receipt of a letter, on a typical day during 1980 - 1999 there were over a half million English language luck chain letters in the mail.

The Great advantage of a small advantage.
We illustrate the ideas above in the following scenario of a new variation being introduced. Suppose the active population of a mainline chain letter type is **stable**: for every 100 received these generate about 100 receipts in turn. To simplify, assume all these letters are periodic with generation time exactly one week. Under this assumption, the active letters are those that have been received in the last week. Suppose John Doe gets a degenerate photocopy of one of these letters and retypes it before making copies. He happens to add the postscript "*Do not send money!*," thus creating a variation V, makes 20 copies and distributes them. When Jane gets a copy of a chain letter in the mail she habitually glances at it and throws it away without reading the body of text, figuring it wants her to send money. When she gets a copy of V she glances at the title and at the bottom of the letter where one might look to see who the sender was. There is no sender listed, but the words "*Do not send money!*" appear prominently. This communicates at once that this letter does not ask for money. Jane reads the full text and, since she is waiting to hear if she got a part in play, she is persuading not to take a chance on bad luck and complies with the demand for 20 copies.

Some others may react as Jane did: say the new postscript induces just **one additional person per hundred** to fully and effectively comply to the demand for 20 copies. So now for every 100 V letters received about 120 receipts are generated in turn. This is a weekly rate of growth of $p = 120/100 = 1.2$, and as long as this is maintained the circulation of this variation will undergo exponential growth. Using equation (3) for this example: $y_0=20$, P=7, $p=1.2$, and the active population y after t days is $y = 20*(1.2)^{t/7}$. With this growth rate, the population will double every month since $y(t+30) / y(t) = (1.2)^{30/7} = 2.18 > 2$. Starting with 20 copies, two years of such doubling would produce a quarter billion receipts per week - more than the number of adults in the United States.

The scenario employed in this example is realistic: in fact the postscript "*Do not send money!*" did appear on a mainline luck chain letter around 1939 and rapidly expanded its numbers (> Section 4.6).

Computer simulations by John Burkhardt provide additional evidence for the "great advantage of a small advantage." For twenty letters initially launched, and (in effect) a weekly rate of growth of $p = 1.$, of 150 simulated launchings not one produced a lineage of over 1000 letters. But when the weekly rate of growth was increased slightly to 1.02 then 85 of the 150 simulating launchings still continued after 1000 generations {Meditations on the Chain Letter}.

Immunization.
In the example above, the model of exponential growth produced a doubling of circulation every month. Obviously such growth cannot be sustained for years. The number of possible recipients is limited, and there is an **immunization** effect whereby receiving more than one chain letter of the same category makes one less likely to comply with copy demands. If one variation of a luck chain is abundant, another variation may be deprived of the attention and resources required for making and distributing copies. Eventually the abundant variation will foul its own nest by the same process. Thus for population booms, the exponential growth model applies only at the onset. More sophisticated mathematical models of growth are available but we will not pursue that approach.

Exponential decline.
The exponential growth model may also be applied to a declining chain letter variation. In the John Doe

example above, consider the fate of the unimproved mainline letters (call them variation "U"), which were just hanging on before the V letter appeared. For U, every 200 hundred letters received were producing about 200 receipts in turn. For simplicity, assume that all these 200 out were the result of 10 recipients who fully complied to U and sent out the quota of 20 copies. Now along comes variation V, doubling every month. Suppose just one of the ten U boosters, Joe, gets the now common V letter a week before a U arrives. Joe is likely to throw U in the trash, having already complied to V, and thereby having enough good luck due him to counter any problems this discard could cause. Note that this immunization effect happens even if Joe is one of the 99 out a 100 people who have no preference between U or V. If this spoiling is typical, for every 200 U letters received, now only 180 copies are sent out. This represents a rate of "growth" of 180/200 = .9 per week. Since $(.9)^7 = .48 < .5$, the circulation of U is being cut in half about every seven weeks. The initial circulation of U could have been quite large when the innovation V first appeared. We estimated above that average mainline circulation in recent decades was around 1.9 million letters. Here, when variation V is first introduced, variation U consists of all other luck chain letters in North America. So the initial circulation of U could be as high as 2 million ($2x10^6$) letters in transit. Using this, we can calculate the future circulation under exponential decline.

- Circulation of U after one year: $2x10^6 \times (.9)^{52} = 8349$
- Circulation of U after two years: $2x10^6 \times (.9)^{104} = 34$
- Circulation of U after three years: $2x10^6 \times (.9)^{156} = .15$

So at one year we might get lucky and collect a U letter from that time period. After two years U is all but extinct. This corresponds to what we see in the Archive (> Table 6, > Table 7). These extinctions are due to the advent of new variations, with what appear to be only small advantages. This example is useful in understanding the evolution of luck chain letters so we summarize it.

The One-in-a-Hundred Rule.

> **Consider a stable population of quota 20 mainline luck chain letters with a generation time of one week. If a variation arises that gets just one extra person in a hundred to fully comply, the circulation of this variation will double every month and within three years it will be the only mainline luck chain letter still circulating.**

Such captures of circulation by new variations or types are a common and striking feature of chain letter history. Analysis of **why** a new variation predominates may be difficult, especially if several innovations are present. Because of the One-in-a-Hundred Rule, this replicative advantage could derive at least in part from infrequent or secretive factors in the recipient population, such as paranoia, uxoricidal fantasies, minority ethnic identification or participation in money chain letters.

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3.2 Distribution Networks.

Chain Letter Distribution. *Core Networks*. *Efficient Flow*.

We will consider in Section 3.8 how certain chain letter content influences the selection of recipients (> Effective Distribution). Here we speculate about the flow of chain letters through a population, how flow patterns may persist and change, and how this may affect the circulation of variations.

Chain Letter Distribution.

The following individual behavior holds with regard to certain social replicators, and affects their overall pattern of distribution. This applies to photocopied office humor, jokes, rumors and luck chain letters.

(1) **Single source**: New items are first distributed by only one source: all subsequent receipts of this item derive from this initial source.
(2) **Habitual transmission**: If two people are exposed to the same replicator and the first person distributes it and the second does not, then the first person is more likely than the second to distribute a subsequent similarly motivated replicator.
(3) **Habitual targeting**: And this subsequent distribution is likely to include many of the same people to whom the prior distribution was made.
(4) **Repetition taboo**: People are disinclined to distribute a replicator to anyone whom they know has already received it.

These facts are clearly true when the replicator is photocopied office humor. These are far too complex to be invented independently; and likely just one person is the source (though an item titled "*Useful phrases to know when traveling in Moslem areas"* [1995] is rumored to have been launched by the CIA while American hostages were being held in Lebanon). Almost all the photocopied office humor I received came from just one secretary, who reported that she got most of it from one other secretary. I showed these to the same friends each time; some often made copies and others never did. No one person ever gave me the same item twice. Likewise replicative oral jokes are extremely difficult to invent, except for substituting ethnic or national identities in an existing joke {e.g. search for "it's a local call from here"}. And each is likely the creation of a single imagination. In the office, the same few people told me jokes, and did so over the years. One male in particular, who claimed he had been in every bar in the county, was the source of most of the jokes I heard. I either forgot his jokes or told them to certain friends and not others. No one told me the same joke twice unless they had forgotten the first telling. Upon reminding them of this they immediately stopped

For luck chain letters, "single source" is generally true for significant changes except, possibly, deletions. Evidence for "habitual transmission" can be found in some interviews (NYT, 1968). This may begin when an individual correlates some good or bad luck with receipt of "the letter." "Habitual targeting" can be a matter of convenience, and also compliance with targeting instructions in the letter, which may suggest copies be sent to "*people who need good luck*." In a hoard of nine linen exchange letters received by one person, the lists of senders contain 22 names and addresses but there are only 12 different ones [xe1940]. Finally, "repetition taboo" is in part a restatement of the immunization phenomenon, which explains the cessation of chain letter crazes. Immunization is understandably a refusal to expend one's own time and money on repeated demands for copies. But when transmission is not anonymous a respect for one's recipients will be a factor. This may still operate for anonymous distribution, though not as strongly. From about 1922 to 1977 the great majority of luck chain letters contained lists of the most recent senders. After 1978 there is not a single mainline chain letter in the archive that bears such a list, and almost all the envelopes these chain letters were mailed in did not have a return address. So there was a dramatic shift to anonymous distribution. However most transmissions were still probably from friend to friend, with the prior "known friend to friend" networks still active.

Imagine the complete flow of a social replicator V through a population. We can represent this by a **network of transmissions** whose points (nodes) and directed connections (arrows) between pairs of nodes are specified as follows.

(1) Each person who sent or received V specifies one and only one node.
(2) If person A transmitted V to person B then node A is connected to node B.
(3) With each such connection there is associated the time of receipt of V.

The network of transmissions ignores variations of V, considering them all the same replicator. For a popular item, such a diagram might comprise millions of nodes and many more connections. "Habitual transmission" and "habitual targeting," particularly targeting of "friends and associates," suggest that such transmission networks have an independent existence rooted in social and work contacts, and the distribution of prior replicators. A subsequent variation will be passed along to many of the same people. We conjecture that

these networks have differentiated parts or "structures" that also persist and that affect the propagation of resident social replicators. An interesting possibility is that the same "single source" of V produces another successful replicator, say V'. If the network of transmission is fairly constant, as suspected, then even far out in the network from the source, replicators V and V' should usually be received in that order. Recording such sequences could be used to infer encore creations and the constancy of the network of transmission.

Core Networks.

The **core** of a chain letter network of transmission can be roughly defined as the largest subnetwork of mutually connected habitual senders. Several formal definitions of the core of a network are given in Doreian and Woodward (*Social Networks, 1994*), but we have so little data compared to the number of participants that computational methods can not be applied. We suspect this core, as defined, is more numerous and richly connected than would result from random linkages because:

> (1) Various forms of social stratification (gender, age, race, religion, class) suggest the existence of different chain letter transmission networks, particularly when senders are identified. Some evidence of this can be found on chain letters and in newspaper accounts [gender: 1922, 1933], [race: (1935), 1936] [religion: 2001]. Given that different chain letter transmission networks co-exist, the success of a chain letter variation depends not only on its text, but also on the state of the network that delivers it. These transmission networks are not static entities, but change with changing conditions such as participant age and interaction with other distribution networks. Thus competition between chain letter variations is, in part, competition between the established transmission networks that deliver them. Such competition makes a case for the existence of core networks, since the dense linkage of hundreds of people who habitually and rapidly comply would accelerate exponential growth and sustain circulation by recycling. Transmission networks with a smaller or less cohesive core would more likely disappear or be captured by a rival transmission network.
>
> (2) For over a half century, most luck chain letters had a senders list. And money chain letters require a managed list to function. Very early in the 1935 Send-a-Dime craze, women called friends to make sure they would re-transmit the chain letter and take the same precaution in choosing their recipients (DRMN-1). Such successful oral recruitment techniques would replicate along with the paper text. About the same time, this quest for prior consent appeared as a postscript in a Send-a-Dime letter [1935-04]. Such selection of recipients will link enthusiastic participants. And though the Send-a-Dime bubble soon burst, the transmission network that developed for money chain letters in 1935 probably survived for decades and influenced luck chain letter distribution as well (> Luck Follows Money).

Rapid changes in the circulation of a chain letter, up or down, may relate to events in networks that are not modeled simply by exponential growth and immunization within in a large population. Two networks will share some participants. A sudden increase could follow the incorporation of a rival core network by a new letter. Rapid decline of a letter may follow if the core of its transmission network loses connectivity, as by participant aging or immunizations by a rival letter.

Efficient Flow.

The "repetition taboo" implies that there will be an avoidance of duplicated arrows (A to B and A to B) in a chain letter transmission network. And short cycles (such as the dyad A to B and B to A) will be less frequent. This especially applies to letters with a senders list. If the list contains the last n senders, all cycles of length n + 1 or less can be avoided if one simply avoids distributing to anyone on the received list. Possibly, competition between networks will also develop this "efficient flow" since receipt of multiple copies by one person within a few weeks is wasteful. Those networks with long cycles should be favored. This could also involve a general westward movement of letters, or a tendency to move between three major cities in the same cyclic order. A very large sample would be needed to check for such patterns, nor should

we expect that the repetition taboo and immunization alone could bring them about. But my guess is that more persistent structure exists in the transmission networks of folklore than is presently observable. Perhaps some systematized method of sampling will eventually enable the observation of flow patterns. Presently we do not even know which paper luck chain letters are circulating, and in what quantity, if indeed any are.

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3.3 EVOLUTION

Descent. *Variation*. *Differential Replication*. *Chain Letter Evolution*.
Linked features. *Cladistics*. *Behavior that Affects Propagation*.

Descent.
Until the 1970's most paper luck chain letters were copied by hand or typed. When photocopiers became more common there was some debate if one could use them for chain letters and still receive good luck (NYT, 1968). One chain letter innovator declared "may Xerox" in a footnote [1975]. Predictably, the mainline photocopiers won this debate [but not for one outlier], and almost every letter that has circulated since 1980 is a photocopy, included originally hand written ones. But late generation photocopies must eventually be retyped because of image degeneration. In recent years this retyping is often done with a word processor.

When we use the word **copy** we allow that there may be errors, deletions, innovations, and even translation. But we require that at least half the text of the **parent** letter is carried forward on the copy with matching details. Such a first generation copy may itself be copied, producing a second generation copy, and so on. We say letter M is a **descendant** of letter L if M is some nth generation copy of L, and then L is an **ancestor** of M. All descendants of chain letter L, plus L itself, constitute a **descent group** (or **clade**), with L the **founder**. If every letter in a clade, except possibly the founder, has exactly one parent we say it is **uniparental**. The **lineage** of a letter M within a uniparental clade is the sequence beginning with M, then the parent of M, the parent of the parent of M, etc. until the founder of the clade is reached. Any two distinct chain letters in such a group have a unique "most recent common ancestor." This is the first member of the lineage of one which is in the lineage of the other. Because of the convention that a letter begins its own lineage, two letters in the same lineage also have a most recent common ancestor, which is the oldest of the two. On extremely rare occasions a chain letter may not have a parent [1975], or may have two (< e.g. the DL founder).

Two chain letters are regarded as **identical** if they have the exact same text, character for character. Differences in format, spacing or text style are not considered. Thus an **identical copy** of a chain letter reads out loud the same as its parent. Usually when chain letter L is photocopied, and possibly when copied by hand, an identical copy is formed, called a **clone** of L. A letter is not considered to be a clone of itself. "Identical twins" are identical to each other and have the same parent, but differ from this parent. Identical twins are not clones, a clone is an identical copy of a single parent letter. For any letter L not a clone, the **clone group** with **founder** L is constituted by (1) the letter L, (2) all letters identical to L with the same parent (twins, also considered founders), and (3) clones of members of the group. Clone groups are the natural unit to consider when describing the descent of variations. The glossary gives a more inclusive definition of a clone group.

All hyper-competitive innovation launched since 1975 will debut with a burst of a thousand clones! And this is assuming the innovator distributes no more than the quota, just 20 copies. We will suppose, as in a prior example (< Great advantage), that the innovation experiences initial exponential growth with a weekly rate of growth r = 1.2 (120 letters out for 100 received). We also assume: (1) all copies are photocopies, and all these are clones, (2) all continuing letters are retyped after the thirteenth generation and not before, and (3) no retyped letter is a clone. After 13 generations the total production P of letters will have been:

$$P = 20 + 20r^1 + 20r^2 + \ldots + 20r^{13} = 20[r^{14} - 1] / [r-1]$$

where r is the weekly rate of growth. We have used a familiar formula to sum the powers of r. For the hyper-competitive r = 1.2 this gives P = 1,184 total letters distributed. By our assumptions, these constitute a clone group with founder the initial innovation. Of course some early photocopies may have misalignment deletions, or someone may retype long before the thirteen generation. These events will lower the number of clones. But most photocopies are perfectly legible after 15 or more generations, and a retype may be a clone (this then producing hundreds of more clones). So our rough approximation seems reasonable. If we lower the weekly rate of growth to r = 1.1 we still estimate 560 clones. With r = 1.2, the number of letters circulating after 13 generations is about $20(1.2)^{13} = 214$. Of these about (214) x (1/20) = 11 letters will be retyped, these likely all different, at least in small details, from the founder.

The Paper Chain Letter Archive provides overwhelming evidence that chain letters inherit text from their ancestors. From a "Luck of London" letter we read "*It has been around the world four times*" [1944]. Over 50 years later we read on an Australian letter "*It has been around the world nine times*" [1997]. From a letter mailed in 1959 from Bloomsbury, New Jersey we read about money won but life lost in the Philippines [1959], just as we do on the 1997 Australian letter.

Inherited details reveal that the letters in the "types" we have designated are descended from a single founding letter for each type. If we start with the Good Luck letters [1922], these and all subsequent mainline letters form a single descent group that extends to the present, and whose founder was probably written in Europe around the time of World War I. This descent group numbers in the billions of letters and some of its lineages contain thousands of generations (over four thousand, if there is an average of one generation per week).

All luck chain letters since 1900 are probably influenced by the first letter with both a copy quota and a deadline. Present day familiarity with these devices masks their ingenuity: copy quota probably began with a single letter and the concept spread only with the distribution and translation of this letter. The same is likely true for deadlines, dropping claims of divine authorship, statements that the letter is to go around the world and non miraculous testimonials. Such innovations distinguished luck chain letters from the Letters from Heaven with which early luck chain letters were once identified (1908). The Letters from Heaven in turn probably have a conceptual founder, perhaps a Greek letter in the first century, and this in turn a pagan predecessor. If we presume there existed spoken rituals that demanded their own repetition [cf.. *"He who will not say it . . ."* in 1905], these may all have begun with a communication that claimed divine origin and contained an instruction for periodic repetition. As if echoing this primal origin, many of the Letters from Heaven [1863] and a very early "luck" chain letter [1902] emphasized rigid Sabbath observance.

Variation.

Hand written letters are often difficult to read and thus many variations are introduced as the copier tries to guess what is written. With photocopying, after some 15 or so generations the text becomes wiggly, spotted and unreadable in places. Titles and other text at the margins may be lost because of misplacement of a sheet in a photocopier and image expansion [1991]. Thus photocopied chains, to survive, must be retyped periodically, which introduces errors and wrong guesses at illegible or missing words [e.g. "*faxed*" for "*faded*" in 1997]. Lines of text are often omitted when copiers lose their place in the source letter [compare Newark1 to the close Newark2 - the later has omitted "*of receiving this letter*" and "*He failed to circulate the letter*"]. Or the copier may notice the omission, and enter the missing line in a new position in the letter [in 1979 "*Do not keep this letter*" has been transposed with "*It must leave your hands . . .*"]. In [1985] a misplaced period has shifted an important ethnic cue (the Philippines) from one testimonial to another. A few changes are the result of copying what was not intended to be copied, such as a date, personal postscript or signed name.

In addition to such copying errors, there are many intentional changes. The testimonial of The Unbeliever's Death is often deleted, presumably for ethical reasons [1981]. Attempts to improve the writing style are seen [1995], and reformatting is common [1991]. Often a brief salutation [1989] or postscript [1997] is added, usually never to appear on another letter in our sample. Sometimes a whole new title [1997], sentence [1991], or testimonial appears [1975]. With the use of photocopiers, and possibly before, a recipient of two chain letters may combine them on one page (Preston 1976). This process produced the "Death-Lottery" (DL) type letters that were extremely abundant from 1975-1998.

Probably there are thousands of major innovations every year, but most do not replicate sufficiently to find their way into our sample. There are so many variations, accidental and deliberate, that most retyped letters differ from their parent. We have never collected two identical luck chain letters. Paradoxically, ancestors can still be identified after hundreds of generations, and across translations and subsequent cultural modification [compare the ancestral 1974 to Hungary 1986, or to the second part of 1999].

There is convincing evidence in the archive that on rare occasions, in copying parent letter X to copy Y, text from a third letter (the "**donor**") is also placed on copy Y. This process, and the text involved, is called a **transfer**. Here are some examples.

- The "lost his *wife*" version of the Death and Money testimonial was translated and transferred to a quota 24 Spanish language letter that circulated in the U.S. and probably Mexico. (> D & M transfer)
- The "Kiss" title was transferred to a "Love" titled letter. (> KLC transfer)
- Both the Kiss title, and the "*she* had won" version of the Death and Money testimonial, were transferred to a Love titled letter. (> KCL transfer)

Any change in the text of a chain letter, from parent to copy, is called a **variation**. Variations include additions and deletions, and both accidental and deliberate modifications. Since we are extremely unlikely to possess the parent of a chain letter, and for other purposes, variations are described with reference to some **standard** letter. Ideally this would be the founding letter of a clade under discussion. But since any such single letter is unlikely to have been collected, or if so to be recognized, we often choose as a standard the earliest letter with the features defining the clade, provided it suffers no major deletions.

Differential Replication.
Very clear evidence that chain letter content affects replication is present in Table 6 and Table 7. These show that letters bearing certain variations have greatly increased in frequency over a few years, and letters without those features have totally disappeared from our dated collection. The succession of luck chain letter types (< Table 2) is also proof of the effect of content on circulation. The range of years in Table 2 records the earliest and latest year of circulation so far collected. Thus all the dozen Good Luck type letters were received during the 1920's, and you are no more likely to receive one today than to be asked to dance the Charleston at the senior prom.

For most variations we can be fairly sure that after some initial appearance, all subsequent appearances within some group of letters under discussion are descendants of this initial appearance. Or if the variation re-appears as a result of a transfer or re-invention, we may always be able to verify this by analyzing other variations present. We call such a variation a **feature**(or **character)**. Features are variations that can be used, at least in part, to infer that two letters bearing the variation had a common ancestor that also bore it.

Some variations are **not** features, or at least their use in diagnosing lineage poses difficulties. For example, deletion of the Unbeliever's Death testimonial occurs independently in separate lineages. Certain corruptions and varying forms of numbers may also appear and re-appear, such as $755,000, $755,000.00, $755000.00 or $75,500,000. The words "Philippines," "receive" and "ignore" are frequently misspelled in the same way. "St. Jude" may be added to a letter, and also removed.

Descent groups (clades) are often considered when their numbers significantly increase or decrease in our dated sample. Members of a descent group are recognized by the presence of shared features. Some of these features may have a ***positive effect*** on propagation, others ***neutral***, and some may have a ***negative*** result. Questionably positive, neutral and negative features of an increasing clade are called **riders**, since they proliferate without themselves motivating significant replication. Usually there is one **key feature** judged to be primarily responsible for the increase of the group. Sometimes it may be difficult to select a key feature from two or more positive features present.

Small copying errors will generally be neutral, but some may have had a positive effect on propagation and increased in frequency as a result. Here are three candidates for this curious phenomenon:

- On [1910] "stating" was written for "starting." See Ancient Prayer (< stating).
- On [1979] "Sol" was written for "St." and later "Sol" was changed to "Saul" [1982-01]. See It Works (> Sol).
- On [1989] "51 days" was written for "six days." See the example below for "post-linked" (> 51 days).

Major deletions will usually be negative, but in a some cases the results may be very positive.

- The claim of Divine authorship was dropped from a Letter from Heaven (< Section 2.1).
- An internal list of senders was deleted from a DL letter (> Section 4.6).
- The "Trust" prayer was deleted (or replaced) on a DL letter (> Section 4.7)

Probably most changed numerical specifications do not replicate sufficiently to show up more than once in our collection, such as the quota ten (instead of twenty) on the paper DL letter [1987]. But when DL luck chain letters crossed over to the Internet, the traditional quota twenty was soon replaced by quota ten (see "q20" versus "q10" in e-index). New types usually introduce new specifications, and there is indirect evidence that one such transition in Latin America was due to an accidental change of the copy quota (> Section 4.4).

The descendants of a single letter have repeatedly replaced all other mainline letters in our sample. We call such a descent group (or its founding letter, or the key feature) **hyper-competitive**. For example, all mainline letters after 1983 are the descendants of a single letter that first appeared around 1979! This descent group numbers over two billion letters. The key feature responsible for this spectacular replication was probably a new postscript (> It Works). We say this "It Works" postscript (or the first letter bearing it, or its clade) **captured** the mainline. Such striking examples of differential replication are surprisingly common in chain letter history.

- Each new mainline type eliminated the prior type in a few years, except Death20 which took about 8 years (< Table 2).
- According to Donald Wickets**,** a harsh threat was added [around 1902] to the Sabbath letter and this version captured circulation of this early prayer chain and spread internationally.
- Both the addition [1905], and subsequent removal [1910], of "*Bishop Lawrence*" captured Ancient Prayer circulation in the US.
- By the 1950's (possibly as early as 1939), all mainline luck letters were descended from a letter on which "*Do not send money*" had been added (> Section 4.2).
- The earliest letter that bore "The original is in *New England*" captured the mainline in a few years (> Kiss & Love). This feature was, however, a rider on two new titles that appeared in 1983.

Sparse sampling may leave hidden several successive captures in the transition from one type to another. Some hyper-competition within types may similarly be undocumented, especially during 1928-1967. Each traditional sentence and testimonial on a mainline letter, in fact every feature, was once either a hyper-competitive feature or a rider on one. Even if several came in together on a translated Spanish block, if

we could go back into the Spanish language history of the block, we should expect to find a series of killer innovations that smothered their cousins in paper.

The term "funneling event" from population genetics may be applied to captures, since they reduce the inheritable variation present in a population. These events not only establish highly replicative innovations, but also reset details of text with the features that happen to be present on the founding letter, for better or for worse. Chain letter evolution is characterized by a succession of funneling events through single letters. If a variation, a "small improvement," is merely increasing in the population of letters, it is subject to total elimination by the next hyper-competitive variation. Nevertheless, small improvements do appear to accumulate on chain letters, for example with the mix of testimonials (> Office) or with instructions on to whom the letter should be sent (> Effective Distribution). This appearance requires explanation.

> (1) Small improvements are needed to increment the effectiveness of a letter bearing a key innovation to hyper-competitive power.
> (2) Variations that are more frequent because of small improvements are more likely to receive a hyper-competitive innovation.
> (3) A universal feature that appears to be a "small" improvement may have previously been hyper-competitive, perhaps during a period of low circulation. Low circulation events are difficult to document.
> (4) The author of a key innovation may have also composed small improvements, or selected and transferred them from other letters.

Explanations (1) and (2) are apparently active in the frequency shifts documented in Table 6 for the sequence of innovations leading to the full It Works postscript. Explanation (4) may apply to the many seemingly concurrent changes that appeared with two new titles in the early 1980's (> Kiss and Love).

Chain Letter Evolution.
We have described the descent and variation of chain letters, and their differential replication depending on copied features present in the text. These processes assure that chain letters "evolve" - that is, they accumulate inheritable features that increase or sustain propagation. It is this evolution that ultimately explains "how chain letters work," and why they worked even as public attitudes and beliefs changed over generations. This success is even more remarkable considering the universal condemnation of chain letters from both secular and religious authorities, and the lack of any real service they provide to their hosts apart from dealing with the false hopes and empty threats that chain letters themselves created.

Richard Dawkins describes the mechanics of chain letter evolution in *River Out of Eden*, while also emphasizing that chain letters "are originally launched by humans, and the changes in their wording arise in the heads of humans" (1995, pp 146-150). Our collection reveals that there are a great many such changes but very few that significantly increase propagation. And very few of those that do are the result of an innovation designed to work in the way it does. Indeed, some successful changes are the result of accidents in copying. As in biological evolution, successful chain letter "mutations" are rare events that can exploit an opportunity for replication in a variety of unpredictable ways. So chain letters do "evolve," and apart from computer simulations, are probably the best documented and simplest example of evolution known. Yet, unlike computer simulations, chain letters are readable documents that exploit human hopes and fears. This provides chain letter evolution an unlimited palette of invention, and makes their history intelligible in human terms.

Are the similarities between chain letter evolution and genetic evolution worth our attention? In the previously mentioned (< S. 1.3) article "Chain Letters & Evolutionary Histories" (Bennett, Li, Ma), algorithms used for genetic sequences are applied to reconstruct the ancestry of 33 DL type luck chain letters. The authors state " . . . if algorithms used to infer phylogenetic trees from the genomes of existing organisms are to be trusted, they should produce good results when applied to chain letters. Indeed, their readability makes them especially suitable for classroom teaching of phylogeny (evolutionary history) free from the

arcana of molecular biology."

The following biological phenomena suggested or prompted guesses about chain letter adaptions.

- Parachutes and hooks on seeds => chain letter circumnavigation claims were a method of dispersion
- Balanced polymorphism (e.g. sickle cell anemia) => chain letters use ambiguity to maximize propagation
- Symbiosis => some luck chain letters circulated within the transmission network of money chain letters

Reciprocally, perhaps chain letter evolution will suggest some hypotheses to test for genetic evolution. In particular, their evolution may be similar to that of viruses, which display some striking analogies to chain letters (Goodenough & Dawkins).

There are, however, significant differences between chain letter evolution and biological evolution, and how each can be examined. In addition to the presence of deliberate and calculated human innovations in chain letter texts, we note:

(1) Chain letters usually replicate by the production of exact copies (photocopies) of a single parent letter. A successful new variation likely begins with over a thousand such clones.

(2) There is no natural way to define a "species" (type) of English language luck chain letter. Incremental variations are rapidly dispersed throughout the English speaking world. By contrast, most biospecies reproduce sexually within intra-breeding groups (species) that have geographic boundaries. Species are "real entities of nature."

(3) At least in part because of their asexual reproduction, chain letter history is characterized by the phenomenon of hyper-competition - the quick capture of an entire niche by descendants of a single letter. Presumably this does not occur with the genomes of biospecies, where funneling, if it has occurred at all, is through a taxon such as a genus or species.

(4) The text of a luck chain letter is analogous to the DNA of an organism, but is orders of magnitude shorter, comparable only to the length of a single gene, and like a gene has a beginning and end. Instead of being a sequence of nucleotides, a chain letter consists of readable sentences in a natural language.

(5) Not only can we read the entire "genome" of a chain letter, we can also make reasonable estimations of the effect on replication of any component.

(6) The raw data available for chain letters are far more complete than what are available for any biospecies. We have, in essence, the complete DNA for hundreds of examples, including accurately dated "fossil" forms.

Linked Features.
The first appearance of any feature, say H, will be placed on an existing parent letter which itself will already have many variations and features that do not appear on most other letters. Then if H is a hyper-competitive feature, as letters bearing it increase exponentially, all the "linked" features present on that first letter bearing H, the **founder** of H, will be carried forward and become universal along with H. However, we only have a tiny fraction of the millions of letters generated in any month, and thus can not be sure what the founder of H looked like. Chain letter phylogeny is essentially the knowledge of which features were added to what pre-existing features.

A tempting mistake is to presume that two features first appeared together on one letter. Every letter in the archive which bears feature H may also bear feature G, and visa versa, but this does not imply they appear

together on all letters ever produced (if so we say G and H were **concurrent**). It is quite possible that G could have appeared first and later H was added to a letter bearing G, but no example of G without H has been collected. For chain letters there is no way to deduce concurrence of two features solely from texts, unless one had every letter ever produced. If features G and H are both present in a group of letters under discussion, the following table lists the five possible ways they may appear with relation to each other. The symbol {G, GH}, for example, means that within the group of letters: (1) G appears without H on at least one letter; (2) G appears with H, in any order, on at least one letter, and (3) H does not appear without G, otherwise we would have written {G, H, GH}. The five possible relationships between G and H are all hypotheses, subject to revision depending on subsequent collecting or verification of certain deletions or transfers. None of these relationships depend on recorded dates of circulation for letters, though dates may be used in arguing for or against spoiling exceptions. However, the pre-linkage of feature G to feature H implies that G appeared before H.

Table 3. Feature linkage: terminology and consequences.

C. L. Evolution terminology: G is ____ to H.	All known presences of G and H in the group.	Cladistic terminology: G is ____ (relative to H)	If H becomes universal, G becomes ____	Spoilers	Possible origin
1. unlinked	{G, H}		absent	GH exists but is uncollected	G preceded H, but was not pre-linked
2. pre-linked	{G, GH}	plesiomorphic, or ancestral	universal	All G are by deletion from GH	G was on the letter that first received H
3. co-linked	{GH}	congruent	universal	G or H exist but are uncollected	G and H first appeared together
4. post-linked	{H, GH}	apomorphic, or derived	possibly frequent if GH came early	H was transferred to a letter bearing G	H was on the letter that first received G
5. transfer-linked	{G, H, GH}	homoplastic, or conflicting	as above	All G or H are by deletion from GH	G was transferred to a letter bearing H

Example 1: The DL letters with an early It Works postscript read "*I, myself, now forward it to you.*" But this never appears on a letter with a Kiss or Love title. "*I, myself, . . .*" was **unlinked** to these titles. When these titles captured the entire mainline around 1985, "*I, myself, . . .*" permanently disappeared from circulation.

Example 2: Our earliest Death20 type letter [1959], and all thereafter, bear both the Death and Money testimonial and the demand for 20 copies. No letter has been found which bears either of these features singly. Thus we say these two features are **co-linked**. They would be **concurrent**, if, say, they were both transferred from a foreign letter at the same time. If not concurrent, then one appeared without the other. But only if such a letter is collected would we then say the first is **pre-linked** to the second.

Example 3: Around 1988 a new testimonial, "Car," was added to a letter bearing the title "*With Love all things are possible*" ("Love"). The Car testimonial proved to be hyper-competitive within the clade of Love titled letters. The earliest example of Car [1988] (and almost all thereafter) also bears a duplication of the admonition against sending money, a feature we call "*send no money,"* which reads:

> You will receive good luck in the mail. ***Send no money.*** Send copies to people you think need good luck. Don't send money, as fate has no price.

There is a Love titled letter prior to 1988 which also bears "*send no money"* but does not have the Car testimonial [1987]. Thus "*send no money*" is **pre-linked** to the Car testimonial: Car was added to a letter that already bore this feature. But there is an example of Car that reads:

> You will receive good luck in the mail. Send copies to people you think need good luck. Send no money, as faith has no price. [1996]

This does not contain the duplicated admonition "*send no money*." However, probably this was the result of a copying error that misplaced "*send no money*" two sentences forward, replacing the usual "*Don't send money, . . .*" This letter contains details that were also present on early Love-Car letters which did have "*send no money*" (> Love gets a car). Thus some ancestor of this letter almost certainly had "*send no money"* in the usual place, and this was later deleted. We can thus say that "send no money" is **universal** in the Car clade, being a **pre-linked rider**.

Example 4: We noted in the above example that the Car testimonial was hyper-competitive within the niche of Love titled letters. These letters were very common in the 1990's, and if you examine them, most read:

> While in the Philippines, Gene Welch lost his wife ***51*** days after receiving the letter. [1989]

Here "*51* days" has replaced the older version in which the wife is lost "***six*** days" after receiving the letter. The "*51* days" variation was very likely a miscopy of the word "*six*" from a degenerate photocopy (I have one in which the "*x*" is barely visible). Our earliest version of Car bears the "*six* days" version [1988]. There is no example in the archive of "*51 days*" that is not accompanied by Car. In the entire population these features appear only in the combinations {Car, (Car)(51 days)}. So "*51 days*" is **post-linked** to Car - it was first written on a letter that already bore Car. During the exponential growth of the Love-Car letters, "*51 days*" proliferated as a post-linked rider, possibly contributing very little to propagation, though such assessments are difficult. If it did give Car letters a boost, say by suggesting very late compliance, this was not sufficient to eliminate the (Car)(six days) letters, which survived well into the 1990's [1996, 1997].

Example 5: In the early 1980's two titles, called "Kiss" and "Love," captured the mainline (> in Section 4.7). For about 10 years a mainline letter bore either one or the other title, so during this time these features were **unlinked**. However around 1993 both titles began to appear together on single letters. They now formed the combinations {Kiss, Love, (Kiss)(Love)} which implies a transfer had occurred, since deletions from (Kiss)(Love) had certainly not produced all the single titled Kiss or Love letters. In this case, the Kiss title had been transferred to a Love titled letter at least three different times. Kiss and Love were now **transfer-linked**.

We use the linkage of features to argue (with inherent uncertainty) for or against assertions of the following forms.

- all letters bearing a certain innovation are descendants of just one letter that initially bore it
- a certain universal or frequent feature does not itself motivate replication
- two letters are "close," that is, they are only a few retypes removed from their common ancestor
- one feature appeared before another
- a feature has been deleted from a letter.
- a feature has been transferred to a letter
- the author of a key innovation made other changes as well

Cladistics.

Skipping this subsection will cause no loss of comprehension in the sequel.
I will not attempt to present an adequate introduction to cladistics here. Instead we will briefly outline the subject and examine how it may be applied to chain letter evolution. In turn, our subject provides a new example of imperfect replication that may suggest approaches to phylogenetic inference in general. There are many on-line resources which can be found by searching on "cladistics." I have also relied on the book *Cladistics* (2nd ed., 1998) by Ian J. Kitching and others.

Cladistics is a method of classification that utilizes a "**sister**" relationship between two "taxa" (named groups of organisms), this holding when the two are more closely related to each other (have a more recent common ancestor) than either has to any third taxon. For cladistic analysis, a taxon must be a **clade -** an ancestor and all its descendants (a descent group). Sister relationships between "nested" taxa (taxa contained in taxa) are expressed by a bifurcating diagram called a **cladogram.** Usually, these relationships are determined using **characters** (inheritable features) present in some but not all of the taxa being considered. Cladograms are chosen which account for the distribution of characters in the "simplest" way, a principle called **parsimony.** In one approach, a parsimonious cladogram minimizes the number of non-inherited appearances (transfers) plus the number of losses (deletions) of features. Cladistics is formulated in such general terms that its methods, including computerized algorithms, can be applied to a group of related chain letters.

Chain letters usually reproduce by cloning. With this in mind, we develop some concepts that permit a precise definition of what an evolutionary tree is for a clade of chain letters, and how this tree determines the "true" cladogram for a sample of letters.

The nodes and connections of the **network of variations** for a descent group G of varying social replicators are specified as follows.

> (1) Each clone group of G specifies one and only one node.
> (2) If any member of the clone group V is the parent of a founder of clone group V' then node V is connected to node V'.

The nodes of a network of variations are groups of identical replicators, not recipients. For any arrow connecting two nodes there is a recipient who transmitted the corresponding change. But participants who always produced faithful copies are not represented by an arrow. There are no cycles in a variational network. This is a result of our definition of a clone group - if identical chain letters result from changes to different parents, these identical letters are in different clone groups and hence are represented by different nodes. Of course the production of identical letters in this manner would be extremely rare. A transfer event is not represented in a network of variations. If we should grant the donor of a transfer the status of a "parent," then transfers would be represented, and we would have a complete evolutionary network of the descent group G.

In a network of variations, multiple arrows converge to the same node only if there are multiple parents. For chain letters, our only documented occurrence of two parents is from the early 1970's (Preston). It is useful to divide chain letters into the largest clades in which all members (except possibly the founder) have one and only one parent. The DL type chain letters, from about 1973 to the present, are one such clade (provided transfer donors are not considered parents). There are over 140 English language DL letters in the Paper Chain Letter Archive, and more will likely be collected. These letters should be useful for testing phylogenetic inference procedures (Bennett, Li, Ma). For such a uniparental group of replicators, there are no convergent arrows in the network of variations, and the network forms a branching **tree**, all nodes ultimately deriving from the single founder of the descent group considered. We call such a network a **tree of uniparental variations**. Cladistics generally considers taxa, not individuals or clone groups. So even when the member organisms reproduce sexually, taxa are assumed to be related by a tree of uniparental variations (this excludes hybrid taxa).

Given a sample of n DL chain letters: $L_1, L_2, \ldots, L_n$, we can conceptually define the **true cladogram** of these letters using the tree of uniparental variations of the DL clade (the **ingroup**, or **primary clade**). Recall that a letter is considered the first member of its own lineage, which then proceeds backward in time through the sequence of ancestors.

(1) Define the set S of letters by S = $\{L_1, L_2, \ldots, L_n\}$ and the set N of nodes as null.
(2) Select a letter L of S.
(3) Find the first letter in the lineage of L, say A, that is in the lineage of a different member of S, say L'.
(4) Add nodes associated with L, L' and A to set N. Letter A could be the same as L or L'.
(5) Connect A to L (if A is not L) and A to L' (if A is not L'). Delete L and L' from S. Add A to S.
(6) If S has only one member left the cladogram is complete, otherwise return to step (2).

In step (3) we find the most recent common ancestor, A, of L and L'. Since all letters are members of the primary clade, we are assured that A exists. This may by L or L' itself if one is in the other's lineage. The practice in cladistics is to place each member of a sample at a terminal node. It is extremely unlikely that two random members of a large clade would be in the same lineage, and if they were, almost no information would be lost by representing them as sister taxa. For chain letters, we have collected a letter and its parent [1922-06-08 and 1922-08-13], but this issue is a matter of sampling coincidences and is of little importance in characterizing chain letter evolution.

Most sources on cladistics emphasizes that a cladogram is NOT an evolutionary tree. For one, evolution need not take the most parsimonious course, however parsimony may be defined. Even so, if we could somehow know the tree of variations for a uniparental replicator, there should be just one cladogram that expresses the actual historical sister relationships for any sample of replicators, and this is defined by the above procedure for the "true cladogram" of the sample. For most cladistic applications the replicators are biological taxa, and it is reasonable to presume that such an entity does not simultaneously produce three taxa. Instead, bifurcation is presumed, and if more than two branches emerge from a single node in a cladogram, it is considered the result of ignorance about the details of this "cladogenesis." However for chain letters, the founder of the DL letters would have spawned a host of clones, as estimated previously over a thousand (< clone burst). This large clone group is represented by a single node, the root clone group, in the tree of uniparental variations. From this node will issue an arrow for each of the new retype variations that these clones produce. The number of these **secondary variations** was estimated roughly at around 11. Many of these, even if they have neutral replicative effect, will establish large **secondary** clades nested within the primary clade. Now it seems reasonable that for a large random sample of DL letters, more than two (say three) of these letters will be members of distinct secondary clades. If so, the root node of the true cladogram of this sample will have three arrows issuing from it (trifurcation). But this is contrary to the established convention for cladograms, that they be bifurcating. If a sample of DL letters all circulated at about the same time, there is a fair chance that all might fall in one or two secondary clades, this because of the phenomenon of hyper-competition. But we could then apply the same argument as above to the more popular of these secondary clades to suggest that more than two of its sub-clades contain a member of the sample.

However, one could counter the arguments for trifurcation by (1) demanding an example of trifurcation in the archive, (2) claiming that hyper-competition is an all or nothing principal that continues on down into smaller hierarchies, rendering trifurcation only a marginal possibility, or (3) claiming that almost no information would be lost by converting a trifurcation into two bifurcations.

It is very difficult to prove that a trifurcation took place using actual chain letters. The origin of the Kiss-Love titles is a candidate. As to point (3), it may be true if all we were using the cladogram for was a depiction of closeness of relationship. But whether taxa, biological or otherwise, often divide into three taxa

near simultaneously seems a question worth asking. Or perhaps this "poly-cladogenesis" is a phenomenon restricted to replicators with many clones. This question remains open.

I have not applied a cladistic computer program to chain letters. This is done in "Chain Letters & Evolutionary History," but the authors do not use characters in their quantitative analysis. Instead they use the Kolmogorov measure of complexity to calculate a numerical "distance" between any two letters, and from the resulting distance matrix construct a cladogram. This seems to work well for lower level taxa, but some higher level relationships are questionable. Though it would require much more human work, I suspect that the phylogeny of chain letters can best be determined by using many transcribed character states.

For chain letters, "characters" are simply the variations in text we have called features. Some of these could be coded as either absent or present (e.g. is there a senders list?); others as multistate characters (e.g. different titles, or variations within a component such as "*life,*" "*wife,*" "*51 days*" and "*wife's money"* in the Death and Money testimonial). After applying several characters to the raw text of a sample of chain letters, the resulting descriptions can themselves be seen as "chain letters." Two or more of these descriptions will combine together into the same clone group if their raw text differed only in ways not yet characterized. A resulting parsimonious cladogram of these descriptions reflects the higher level structure of the chain letter phylogeny, provided the appropriate characters are chosen. Hyper-competetive innovations are prime candidates to serve as such characters, followed by successful post-linked features. Both of these can be found by comparing frequency versus dates of circulation, as in Table 6 and Table 7. The presence of reliable dates also makes evident the selection of a root taxon, and which character states are primitive and which are derived ("polarity"). Number variations and misspellings in the texts should not be used as characters. Names, the presence or absence of "St. Jude," and deletions generally are only slightly more reliable indicators of phylogeny. Deletions should be weighted as a less serious breach of parsimony than the transfer of text.

Behavior that Affects Propagation.
In 1966 Alan Dundes described these universal components of chain letters: (1) a proclamation that the letter is a chain letter, (2) an injunction to send a specific number of copies, sometimes within a definite period of time, (3) a description of desirable consequences of compliance with the injunction, and (4) a warning of undesirable consequences if the injunction is ignored or disobeyed (Dundes). Mainline luck letters contain these components, though the method of identification may not be by proclamation.

We first identify behavior of a recipient that promotes the propagation of a chain letter, isolating these six components:

> **Say a chain letter is first taken in hand. For its successful propagation the recipient must: (1) retain the letter, (2) eventually decide to comply with its demands for distribution, (3) make faithful copies in (4) abundance, and (5) effectively distribute them so that they will in turn be distributed. Further, from receipt to final distribution, these acts must be accomplished (6) promptly**.

In the following sections we classify and analyze chain letter content by its influence on these six behavioral components.

- Section 3.4: (1) Retention
- Section 3.5: (2) Compliance
- Section 3.6: (2) Compliance - mainline testimonials.
- Section 3.7: (3) Faithful copying, (4) Copy quotas
- Section 3.8: (5) Effective distribution, (6) Deadlines.

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3.4 RETENTION

Identification. *Differentiation*. *Woe to scoffers*.

By **retention** of a received letter we mean keeping it in an undamaged state, accessible for copying. The bane of chain letters is immediate discard. If the recipient just saves the letter, as time passes it may work its will by playing on circumstances such as bad luck. The importance of first impressions for chain letters is revealed by the leading sentence in a version of the classroom Romance Game: *"You touched this letter so you have to keep it!"* [1998].

Identification.
Retention of a chain letter may depend on its identification as a luck chain letter, and perhaps as a certain luck chain in which the recipient believes. Quick recognition seems largely based on what is at the top: titles, initial text or, rarely, images. Reputed authors and places of origin may also serve to identify a letter. A Brazilian letter is titled "Oracao De Santo Antonio" and a capitalized prayer follows [1994]. A 1996 English language letter originally from India has Sai Baba devotional images at the top [text, image]. Two translated Mexican letters have the title "St. Jude Thaddeus," one underlined, the other in a large font [1984, 1995]. Below this title, both these letters begin with about the same sentence:

> *Before anything else, I would like to tell you that St. Jude Thaddaeus will help you in everything you encounter.*

This displays a "locking" on the top spot of the letter by a declaration that is difficult to precede without disrespecting St. Jude. Most chain letter types debut with new titles and go on to monopolize circulation. Thus identification of a waning type may negatively impact its replication. Perhaps periodically recipients are more likely to read the text of a letter that appears to be a novelty, or that may not readily be identified as a chain letter.

The final words of a text likewise have added significance for quick identification, as shown by the replicative success of certain postscripts (> It Works). Placing "St. Jude" at the far bottom of a letter, a pretense of authorship, attempts to lock the conclusion [1996]. The Book of Revelations "seals" itself with: "*If any man shall add unto these things, God shall add unto him the plagues that are written in this book"* (Rev. 22:18). Some interpret this as sealing the entire Christian canon.

If identification as a *particular* luck letter aids replication, then we may expect a highly adapted chain letter will have multiple identities, depending on who is reading it. Several years may have passed since the recipient received a previous chain, so only one or two highlights may be recalled. These might be leading text, alleged geographical origin, or one of the numerical specifications. New types typically retain some of these, and thus may appear as the traditional letter to some and a novelty to others. Neither recipient is wrong - in recent decades successful mainline innovations are notably conservative, most adding just one or two new features to an existing letter.

A clear advantage results if a letter is identified, rightly or wrongly, by an ethnic group as the "same" letter that circulated in the old country.

> *A private in the Philippine Army won the first prize in the sweepstakes for complying with this chain.* [1949]
>
> *While in the Philippines, General Walsh lost his life 6 days after receiving his copy. He failed to circulate the prayer. However, before he died, he received $665,000.00 he had won.* [1959]
>
> *Dom Dimant, das Filipinas recebeu e nao deu importancia, mandou jogar fora, 9 dias depois morreu.* [Brazil, 1994].

Such mentions of the Philippines could encourage overseas Filipinos to identify a letter with an indigenous Philippine chain with a potent oral tradition associated with it. Near the end of a composite chain letter from Oxnard, California appears:

> "*This started in Malabon and spread throughout the world*" [1994]

The writer seems willing to identify the entire letter that precedes this statement (four lines of Tagalog, twenty-four lines of a translated Mexican letter) as having originated in Malabon. Recall the One-in-a-Hundred rule for quota twenty letters: one additional fully compliant recipient in a hundred bestows a great advantage. Luck chains within heterogeneous populations have accumulated an international look, simulating other traditions by transfers [1949]. Spanish names (e.g., *Constantine Dias*) still appeared on North American chain letters twenty-five years after their debut. Yet in an example from Poland, where there is no selective pressure for retention of Spanish names, a translation of an American letter has changed "*Constantine Dias*" to "*Konstancja Paasa*" in less than 11 years [1992].

The question of where a chain letter originally came from usually has no single answer. Though North America has been a creative source for innovations, especially since 1935, still most of the text on contemporary mainline letters is likely from various foreign countries. Perhaps the question of origins has an answer if we limit it in a reasonable way. Since 1970 the high copy quota letters (20 and over) have dominated international circulation. Where and when did they first appear? The first appearance of a high copy quota in our collection is on a letter mailed from Bloomsbury, New Jersey [1959]. Its demand for 20 copies is associated with, and enforced by, another innovation that first appears on this letter, the "Death and Money" testimonial. The events in this testimonial are purported to have taken place in the Philippines.

Differentiation.
We have discussed the advantage for a letter to identify itself with multiple traditions. It may also help circulation if a chain letter prominently distinguishes itself from another letter. The advantage of differentiation is very clear for post-1935 luck chain letters (the Prosperity type). In section 4.2 we explain how the hyper-competitive innovation "*Do not send money*" avoided immediate discard by distinguishing the luck chains from the boom/bust money chain of the day (> Divergence). Another innovation of these post-1935 letters was movement of the list of names from the top to the bottom of the letter, where they remained until disappearing in the mid 1970's. This provided a quick visual flag that the letter in hand may not be the abundant Send-a-Dime. Money chain letters retained the list at the top for several years [compare 1935 to 1941].

Woe to scoffers.
We see in testimonials that if one breaks the chain because of tardiness or unspecified reasons, misfortune may follow, but rarely death. However, all behavior that makes subsequent replication impossible is punished with death.

- *Zerin Berreskelli received the chain, not believing in it he threw it away, nine days later he died.* [1974]
- *Isabel Buena lost her copy and lost her life.* [Mexico / U.S., 1984]
- *Madame Valée destroyed it and lost her son.* [France, translation, 1950's]
- *An Argentinean tore this card to pieces and after 13 days lost his son.* [Poland, translation, 1988]
- *Mademoiselle X receives it, throws it away and 9 days later kills herself.* [France, translation, 1995].

Though the events and the language in these testimonials differ, they share the same strategy to promote propagation: "Encourage retention by telling a story of someone who destroyed or lost the letter and soon after was a victim of tragedy." We call such a strategy a **device.** A device is a reason some chain letter component promotes propagation. Though we may express a device as a goal or strategy, a textual expression of the device may be formed by accident, or by an innovator who does not anticipate or intend the resulting

effect. The same device may have many expressions in many languages. It may be so obvious (e.g., "promise good luck for circulating the letter") that we can not be sure the device originated only once. However for most devices we suspect that its various expressions share a common conceptual ancestor that spread the idea via chain letters. Chain letters, displaying their technologies, are so abundant that familiarity lessens our appreciation of their ingenuity. For example, it was remarkably bold and creative to break over a thousand years of tradition and produce a chain letter that did not claim divine authorship. However this could have arisen as an accidental deletion.

Devices may be defined with varying comprehensiveness. The three testimonials above and the statement "*For any reason, do not destroy or tear*" [Mexico / U.S., 1984] might be considered together as exemplifying the single device: "Warn against destruction or loss of the letter."

If the recipient takes the letter as a joke, its promises and threats have no power, and this castrating perception may itself replicate. Possibly some previous types have succumbed to changing attitudes and derision. The pious Ancient Prayer postcard chain, which circulated up through World War I, found few believers in the irreverent and fun loving years following the war. The first three text examples below discourage disbelief. The last three discourage a more serious threat to replication - the expression of disbelief.

> *. . . and if he believes not this writing, and the commandments, I will send many plagues upon him, and consume both him and his children and his cattle, . . .* [Letter of Jesus Christ, 1915, but text is hundreds of years old]
>
> *M. Francesco Monthey, not having taken this letter seriously, saw his home ruined nine days after having received this letter.* [Translation, France, 1928]
>
> *El Presidente de Brasil las recivio y no le dio importancia y a los 13 dias se le muri su hija.* [Mexican / U.S. , 1980]
>
> *One woman made fun of it and on the 13th day her daughter went blind.* [U.S., postcard, 1941]
>
> *Detective Segunda B. Villa now of the City of Baguie who laughed at this Chain of good luck, met instant death in accident on June 14th, 1948.* [International, 1949. Baguio is a city in the Philippines]
>
> *Don't make fun or laugh at this because something bad might happen to you or your family*. [Philippine / U.S., 1984].

The statement "*this is no joke*" first appeared on the Luck by Mail type in 1952 and was soon universal, though in part by riding other innovations. Did this sentence function to differentiate the threatening luck chain letter from joke letters? A familiar parody, in which one is instructed to "*bundle up your wife and send her to the fellow who heads the list*," first appears in our collection on a comic postcard [1954]. Probably this and other parodies were circulating as letters in 1952, and parodies circulated in great numbers in 1935. But all these paper parodies mock the form of money letters, not luck letters. Thus "*this is no joke*" on luck chains probably functions to discourage a humorous interpretation of the letter, rather than to differentiate it from parody letters. However parodies have disseminated a mocking attitude toward chain letters in general, particularly on the Internet.

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3.5 COMPLIANCE

Motives. *Origin of Testimonials*. *Classification of Testimonials*.

In this section we presume one has received a luck chain letter and retained it, but has yet to comply with its demands for replication. By **compliance** we mean that the recipient distributes at least one copy of the letter (perhaps the copy received) within a month of receipt - thus contributing to its propagation. If the entire copy quota is distributed as instructed within the deadline we have *full* compliance. But *partial* compliance may be very common. In the previous section on retention we examined features of a letter that affect a recipient's immediate response to it. Here we focus on the recipient's deliberations on whether to comply, and how chain letter content may interact with those deliberations, and with ensuing circumstances.

Motives.
The Letters from Heaven motivated possession and publication by the promise of divine blessing or magical protection from various perils, combined with threats of divine punishment for disobedience or disbelief. These were identifiably Christian in Europe, and Hindu in India. After 1900 divine sanctions were downplayed, and by 1922 the mainline had only nonsectarian promises of good and bad luck.

Below are listed motives for replicating luck chain letters. These are based on statements of those who send chain letters, chain letter content, and known motives for sending certain postcards.

- **Receive good luck.**
  A promise, explicit or implied, of some benefit for compliance is present on all luck chain letters collected. Indeed, this is close to our definition of a luck chain letter. Example: *"He who rewrites this prayer for nine days will on the ninth day experience a great joy."* [1906]

- **Avoid bad luck.**
  Comments by senders of the 1990 Media chain letter (> Section 4.5) suggest that fear of bad luck is a common motive for compliance. Threats of bad luck for breaking the chain appear very early on chain letters: *"Those who would not write it on would meet with some misfortune"* [1910]·

- **Wish someone good luck.**
  A desire to "send luck" is mentioned fairly often, sometimes as the leading motive for compliance (Sifford). This motive may be especially active if senders feel the letter has worked for them. An early genre of commercial postcard said little else than "*Wishing you dear friend lots of Good Luck"* (Leather postcard, 1905). Explicit appeal to this motive is first seen in the Good Luck type: *"Copy this out and send to nine (9) people whom you wish good luck"* [1922]. This clever device has persisted ever since in the mainline.

- **Malice.**
  Several people have mentioned that they send chain letters to people they do not like to annoy them or burden them with the task of distributing copies. No chain letter content addresses this motive, since for one this could compromise the more common motive of sending good luck. But malice may significantly aid propagation. Perhaps it has favored the high copy quota demands and implied death threats prevailing on letters since 1970.

- **Curiosity.**
  "Copy it out and see what will happen." [postcard chain, 1911]. This is the first appearance of the "See what happens" device - after 1911 it became common, but not universal, on Ancient Prayer examples. It is absent on the brief Good Luck letters of the 1920's, but reappears on the Prosperity type of the 1930's and has persisted since. From the South American Lottery24 we find: " . . . *in nine days you will get a surprise"* [1974]. The universality of such content is evidence for a curious and playful motive for compliance.

- **Keep the chain going.**

From around 1906 - 1911 **remailer** postcards, most commercially produced for the purpose, were sent friend to friend. There were slots for three or four addresses, often the last person sending it back to the originator. At the same time we see on a chain letter: *"Please do not break the chain*" [1905]. Most mainline luck chain letters before 1975 had lists of prior senders. Many people are interested in linkages of friends and where this leads geographically, and this surely has contributed to the propagation of chain letters bearing lists of names.

- **Identification with celebrity.**
  The appearance of high status persons on a list of senders, and particularly a record of whom they sent copies to, enables a recipient to make known their friendship with celebrities by sending out this evidence on a chain letter. This happened with the Good Luck letters of the 1920's, and with the Media chain letter since 1989. The cover letters that circulated with the Media chain letter also allowed senders to share their humorous comments with downline recipients.

Origin of Testimonials.
Since 1928 testimonials have increased on chain letters and we can presume their role in gaining compliance has similarly increased. On a quota 24 Brazilian letter a sequence of seven testimonials constitutes over half the text [1994]. **Testimonials** purport to describe the good luck or bad luck experienced by a prior recipient of the letter. The recipient is usually named, though with time an occupation may be all that survives corruption. On luck chain letters, testimonials are always told in the third person form of address, in contrast to the money chain letters that use the first person. Most testimonials only state a juxtaposition of events, and do not explicitly claim a causal relationship between, say, throwing the letter away and dying nine days later.

Some testimonials probably start as hoaxes (> "Car" below); but I suspect most started as rumors that are subsequently incorporated into the body of a chain letter. Say a chain letter has spread through a town, so much so that most people have received it. This can happen without anyone realizing it, as initially with Send-a-Dime in Denver, until Post Office officials noticed increased mail volume. In such a situation, most people have either broken the chain or complied with it. Now say John Doe is hit by a train and killed. There is a good chance he broke the chain. Suppose the letter is found among John's papers. It may then be said that "*He broke the chain and was hit by a train a week later,*" and this may become a local rumor. The rumor may travel with the chain letter, orally or by telephone, each promoting the replication of the other. In this phase the most effective oral form of the rumor will develop. However, the advantage of distant transmittal applies if the rumor is written. First it may be on an attached letter. Next it may be incorporated into the body of the letter: "*one person who failed to pay attention to it met with a dreadful accident"* [1905]. Good luck testimonials spread in the same way - again the event of a lucky person also being a sender is not nearly as improbable as it may seem. However, should someone be killed who circulated the chain, news of the death may spread, but the compliance with the chain will not. Magic, like vice, is more talked about than its absence.

We need not postulate a chain letter boom to show that, even at face value, some testimonials do not describe remarkable events. The familiar "Unbeliever's Death" testimonial (< Woe to Scoffers) states that a person died exactly nine days after discarding the letter in disbelief. A simple estimate reveals that this is very likely true, in fact, it has happened about 36,000 times just in English speaking countries in the last 25 years. Using the above approximations, a typical person received about 10 DL type luck chain letters in the last 25 years (4 per decade); and let us estimate, conservatively, that 6 of those receipts were discarded in disbelief. Assuming a quarter billion English speaking adults, this gives 1.5×10^9 disbelieving discards for the last 25 years. According to the *The World Almanac and Book of Facts*, the U.S. death rate per 100,000 population in year 1999 was 877. This gives the probability that a person will die on a random day as .00877 / 365 = .000024. Multiplying this by the number of times a person discarded a luck chain letter in disbelief gives 36,000 estimated deaths on the ninth day following!

Once a testimonial is established on a luck chain letter, details may vary considerably over the years, such as names and amounts of money won or lost. But the basic structure of the story is surprisingly persistent, suggesting that traditional testimonials play a major role in winning compliance.

Classification of Testimonials.
To analyze how testimonials promote replication, I classify them by the following five structures: Win, Comply-Win, Lose, Win-Lose, and Lose-Win.

(1) **Win**: person X received the letter and had good luck.
Example: *General Patton received $1,600 after receiving it.* [1952]
The Win testimonials are consistent with a belief that chain letters are a "charm" whose mere receipt brings luck, much as possession of a Letter from Heaven might grant a woman an easy delivery. They suggest a recipient interpret good luck as caused by the letter, creating an obligation to pass the charm on to others. A Win testimonial may thus recruit a previous nonbeliever who has good luck. Alternatively, readers may assume that a Win testimonial is about someone who previously complied with the letter's demands, as in our next structure.

(2) **Comply-Win**: X distributed the quota of copies within the deadline and received good luck.
Example: *Mr. Franklin D. Roosevelt was elected for the third term as president of the United States 52 hours after he mailed this letter*. [1949]
Comply-Win testimonials promote the belief that dutiful replication of a chain letter will bring good luck. This particularly appeals to those who hope for gain from some forthcoming event, such as a lottery drawing.

(3) **Lose**: X failed to circulate the letter and after the deadline passed had bad luck.
Example: *Mr. Nevin broke the chain and lost everything he had.* [1939]
Lose testimonials promote the belief that only replication of the received letter can save one from bad luck. They particularly exploit those who feel that this is not a time they can risk bad luck. This insecurity could result from life threatening illness in the family, a job interview or a son in the military during war.

(4) **Win-Lose**: X received the letter and had good luck. But X failed to circulate the letter and lost what was gained, or much more.
Example: *Dr. F. A. Anderson won $25,000 but lost it because he broke the chain.* [1944]
A Win-Lose story promotes the belief that receipt of the letter brings good luck, but in return one must circulate the letter or lose what they received, or more. It reports two connected events that imply the letter is a causal agent, in contrast to Win and Lose testimonials that can much easier be dismissed as coincidences. Win-Lose is persuasive with those who perceive themselves to have received good luck but have yet to comply. Such good luck could be escaping injury, recovering from sickness, success in an examination or winning a bet (Renard, 1987).

(5) **Lose-Win**: X received the letter and procrastinated or forgot to comply within the deadline. X had bad luck. X belatedly distributed the quota and received good luck.
Example: *Mr. ASC received this letter. He forgot to post. A few days later he lost his job. After that he understood the significance of this letter and he sent 30 copies. He found a new job within 3 days.* [India/UK, 1996]
The Lose-Win device encourages the belief that failure to comply causes bad luck, but this can be reversed, even after the deadline, if one complies in full to the copy quota. Like Win-Lose, the reversal of fortune points doubly to the letter as a cause. Lose-Win preys on those who perceive that they have had bad luck since failing to meet the deadline. Such bad luck could be an accident, loss of a bet or sale, illness, car trouble or failing a test.

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3.6 Mainline Testimonials

Early Versions. *Officer Wins*. *Elliot Wins and Loses*. *Death and Money*. *Boss Wins Lottery*. *Lost Job - Better Job*. *The Unbeliever's Death*. *Car*.

Early Versions.

On an early Ancient Prayer chain letter we read that "o*ne person who failed to pay attention to it met with a dreadful accident"* [1905]. This is the only testimonial, win or lose, that we have collected on the Ancient Prayer type or the following Good Luck letters of the 1920's. Testimonials reappeared in North America during the Great Depression with brief accounts of gain and loss of money. The two known Prosperity letters [1933, 1939] have three, with the pattern Win / Win / Lose. One of our two versions of the World War II Luck of London chain letter [1944] introduces the now classic pattern Win / Win-Lose, possibly having combined the latter two testimonials from the Prosperity type. From our earliest Luck by Mail type:

> "*Gen Patton received $1,600 after receiving it. Gen Allen received $1,600 and lost it because he broke the chain*" [1952].

Of course Patton is the famous World War II tank commander, but "*Allen*" is apparently a corruption. Patton was soon transposed to the loser's position [1958], but was spared further indignity when his name was corrupted to Bratton [1960] and never restored.

Officer Wins. Elliot wins and loses.

With the remarkable Bloomsbury letter of 1959, our early example of the Death20 type, we get the canonical versions of these two testimonials. By some unknown path of corruption or design, the chain breaker is now a civilian with last name "*Elliot.*"

> *"A U.S. officer received $7,000.00. Don Elliott received $60,000.00 but lost it because he broke the chain."* [1959]

Note that someone has given up on the name of the winning officer. He will eventually join the "*RAF*" (Royal Air Force), but apart from the expected noise of copying, these leading Win and Win-Lose testimonials have persisted for decades.

Death and Money.

This Win-Lose testimonial first appeared in North America on the Death20 founder around 1959 and was associated with inflation of the copy quota from five to twenty copies. It was the first implied death threat in the mainline.

> *While in the Philippines, General Walsh lost his life 6 days after receiving his copy. He failed to circulate the prayer. However, before he died, he received $665,000.00 he had won*. [Bloomsbury, NJ]

We have no prior testimonial that looks like an ancestor, so Death and Money probably developed in a foreign country, perhaps the Philippines, and was transferred to a Luck by Mail letter in the late 1950's.

The variant "wife" (for "life") first appeared around 1975, probably as a corruption [couples' letter]. It was present on the Kiss and Love founders in the early 1980's and thus became universal. We have no examples of corruption or correction back to "life." Whether "wife" was simply a rider on the successful new titles, or instead carried some replicative advantage over "life," is a difficult question whose answer could be darkly revealing. The "wife" version of Death and Money has been translated and transferred to a Spanish chain letter.

> *En Felipinos el Gral. Combi perdio a su esposa despues de 6 dias de haber recivido y roto la cadena pero las envio mas tarde y recivio una alegria de $750.00 pesos.* [Mexico/U.S., 1980].

All uncorrupted versions of Death and Money place the action in the Philippines. We have already discussed how this might boost compliance by suggesting that the entire letter originated there (< ethnic). All traditional versions of Death and Money announce the death first. Perhaps this reversal of events makes more dramatic the subsequent disclosure that receipt of the letter had originally brought good luck. Or it may just be a stylistic rider on this powerful testimonial.

Win-Lose testimonials like Death and Money exploit those who perceive themselves to have received good luck since receipt of the letter. If a gambler wins big at the track after receiving the letter, he may comply to avoid being jinxed his next time out.

We now consider the three traditional testimonials that first appeared in the Lottery24 (L) block of the "DL" and "LD" compound letters of the 1970's. Like the Death and Money testimonial, we have no prior history of these invaders.

Boss Wins Lottery.
This Comply-Win testimonial provided the first mention of a lottery in an English language letter.

> *Constantine Diso received the chain in 1953. He asked his secretary to make 24 copies and send them. A few days later, he won the lottery of 2 million dollars in his country.* [1974]

Many state sponsored lotteries began in the United States in the 1970's, the same decade in which Lottery24 became an established chain letter (in combination with Death20). In 1975 twelve states (all Eastern) had lotteries, three of them starting that year (US News). Canada already had the Quebec lottery. But in Latin America publicly sponsored lotteries had existed continuously since Spanish colonial times. Thus Boss Wins Lottery was "pre-adapted" to the new gambling environment in the United States. Gamblers are notoriously superstitious, lottery players included. A recent edition of *Books in Print,* under the subject "lottery," listed about 50 books on how to pick lottery numbers, none of them of any more utility than complying with a luck chain letter. The time gap between purchase of a lottery ticket and the drawing favors the replication of chain letters received during this time. A larger and less geographically biased sample of chain letters than we now possess could be used to test if luck chain letters circulated in larger numbers in lottery states.

The above phrase "*in his country*," apparently an early North American addition, disappeared in the 1980's, thus bringing the testimonial home. However this deletion was first present with some potent innovations (It Works, Kiss, Love) and hence prevailed in part, if not entirely, as a rider. Other changes have been minor, including the more usual "*Diaz*" for "*Diso*" and the syncretization to 20 copies.

The so-called "sweepstakes" promotions likely also increase chain letter circulation. These are sponsored by American Family Publishers, Publishers Clearance House and other firms. Tens of millions participate in these, hoping to win a fortune. Promotion is by television advertising in conjunction with a direct mail campaign of incredible magnitude - almost all adults in the U.S. get this pitch (1998). Recipients are lead to believe that they have already won a huge prize, and that they only need send in an application to receive it. For example, I received a letter from American Family Publishers that displayed through a cellophane window a formal looking document decorated with eagles on each side. It proclaimed:

> **"Witness That On This 17th Day Of December 1993 . . . D. VanArsdale Has Been Certified As A Grand Prize Finalist For TEN MILLION DOLLARS."**

Though I did not answer the letter, next February I got my "Finalist Papers" which certified that

> ". . . if you now have and return the grand prize winning entry, we'll announce. . .
> **DAN VANARSDALE HAS JUST WON TEN MILLION DOLLARS!"**

This wonderful news was accompanied by a pitch for magazine subscriptions. Though by law no purchase is necessary to win, there is a widespread belief (of unknown origin) that to win it is necessary to subscribe to some magazines. After all, one has all but won millions, so why take any chance on blowing it just to save a few bucks. After entering there is a long period before winners are announced (formerly by mail, more recently by a "prize patrol"). Since 1952 mainline luck chain letters have stated that you will receive good luck "by mail." Those with a pending entry in these sweepstakes likely comply to chain letters at a higher rate than average. This could be tested by checking if chain letter circulation increases during the months of sweepstakes promotion, usually December through March. March is a peak month in our sample, but there are collecting biases that make this inconclusive.

In addition to its appeal to gamblers, Boss Wins Lottery makes compliance easy for some by suggesting they have a secretary prepare and distribute copies. And it assures them that the good luck still belongs to the boss. This testimonial, and the next one we discuss, show that Lottery24 was well adapted to an office environment.

Lost Job - Better Job.
The following Lose-Win testimonial appears after Boss Wins Lottery on Lottery24.

> *Carlos Brandt, an office employee, received the chain. He forgot it and lost it. A few days after, he lost his job. He found the chain, sent it out to 24 people, and nine days later, he got a better job*. [1974]

Suppose Maria receives a Spanish version of Lottery24 in Venezuela, say about 1970. She reads this testimonial about Carlos, who was an office worker like her. Maria cannot ask another to make copies, but she likely uses a typewriter in her work, and probably has access to a photocopier. However, she may fear that if she gets caught using company equipment or her time to copy a chain letter she may get fired. But Maria has just read of a supervisor, Constantine Dias, who had his secretary do the same and apparently no one questioned his behavior. And perhaps Maria fears the chain letter more than her supervisor. Besides, even if she should lose her job, maybe she too will get a better job.

From the above scenario, we see that Boss Wins Lottery and Lost Job - Better Job function together in dealing with an office environment. The concerns of both supervisors and subordinates are dealt with by example. Just as quota 20 first appeared in the U.S. in association with Death and Money, perhaps copy quota 24 first developed in Latin America in association with these complementary office testimonials.

The Unbeliever's Death.
After the Lost Job - Better Job story we usually find the following "Lose" testimonial:

> *Dolan Fairchild received the chain and not believing threw the letter away. Nine days later, he died.* [1997]

This and related testimonials were discussed with chain letter content that discourages immediate discard. (< Woe to scoffers). Many variations in the name appear in the next section (> Self-correcting text).

Car.
The following Lose-Win testimonial first appeared around 1988 on DL letters with the Love title. Thus it is not a traditional part of the Lottery24 block, but is usually formatted continuous with it.

> *In 1967 the letter was received by a young woman in California; it was faded and barely legible. She put it aside to do later. She was plagued with various problems, including expensive car repairs. The letter had not left her hands within 96 hours. She finally typed the letter and, as promised, got a new car.* [1988]

Here "1987" (instead of "1967") is the usual reading, and may well be the year of the first appearance of this

testimonial. Within a few years, all DL letters titled "*With Love . . .* " bore this testimonial. However the Kiss clade continued without it. Variations of the testimonial are incidental, arising mainly from botching the compound sentences. Car has appeared on over a half a billion letters since its debut.

We have mentioned the image degeneration that results from successive photocopying. In my experiments, after 15 generations (all with the same photocopier) there was significant loss of legibility. However, more recently, packets of forwarding letters with the Media chain letter are often legible after 25 or more generations (different photocopiers). In any case, contemporary chain letters are creatures of photocopying, and they must be retyped from time to time. This testimonial is the only one we have seen that explicitly encourages retyping. Evidence that it succeeds in this is present on [1995], which adds to the Car testimonial: "*I have retyped it again today in 1995*." Another letter gives 20 alleged retype dates, including ten just in the year 1992 [1995]. Presumably, the propagative success of Car is due to this more frequent retyping. Similar letters without it would more often become partially illegible, and therefore more likely to be discarded, or to be retyped with fatal mutations. With a larger sample we could test this by comparing image quality of Love titled letters with and without Car. Our present sample is inconclusive on this.

Though less appealing theoretically, the most effective feature of this testimonial may be its use of the automobile. If someone holds the letter past the deadline, there is a fair chance they too may be "*plagued with various problems, including expensive car repairs.*" Car repairs often occur unexpectedly, always seemingly at the worst time, thus evoking the specter of bad luck. Like any Lose-Win testimonial, Car implies that no matter how late you may be, compliance will turn bad luck to good. By using car trouble as its example of bad luck, this testimonial may be particularly effective in activating late compliance.

Further, for some the desire for a new car is greater than their respect for reason. Suppose John Doe plays the lottery. Then likely he has already given careful consideration to which vehicles he will purchase after winning. The Car testimonial, in its original form, is clever in not specifying how the young woman gets a new car. She may win it, or win the money to buy it, or perhaps receive it as a gift from a man she is to meet. Thus this testimonial may activate compliance by interacting with the fantasies of lottery players and others.

Notes that one has retyped a chain letter occasionally appear as postscripts. This appears on a Brill parody letter:

> *Re-typed 5/7/79 by Joan Agundez/L.A.* [1979]

And from a DL luck chain letter collected by Alan E. Mays:

> *This letter has been typeset and reprinted on May 26, 1987 for better reading. The copy received was just too shabby looking. This was done in Newport Beach, Calif. by a person with the initials A.J.B.* [1988]

Car does not appear to be an incorporated rumor, since for one it contains the calculated internal transfer "*The letter had not left her hands within 96 hours*." I suspect the Car testimonial is a masterful hoax, probably elaborating a much simpler retype claim like those above.

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3.7 EFFECTIVE COPYING

Faithful copying. *Self-correcting text*. *Copy quotas*. *Copy First versus Copy Later*.

Faithful copying.
Successful replication of a chain letter requires copies be legible, accurate and complete. We examined in the

last section how the Car testimonial suggests retyping, and thus upgrades the legibility of a photocopied chain that contains this testimonial. The following instructions also promote faithful copying of text.

> *Make seven copies of it exactly as it is written.* [1902]
> *Copy this in full and send to nine friends . . . .* [1923]
> *Copy this letter word by word.* [Romance Game, 1995]
> *And if any man shall take away from the words of the book of this prophecy, God shall take away his part out of the book of life, . . .* (Rev. 22:19)

Self-correcting text.
Traditional luck chain letters consist of: (1) an accumulation of devices that promote propagation, and (2) riders on these. Usually accurate copying of the entire letter is required behavior for successful propagation, and text like the above promotes this. But some text helps only its own accurate copying, should the letter containing it be copied.

Names and numbers are usually highly variable on chain letters because if partly illegible there is no context for the copier to infer the correct form. But as they vary they may at some time assume a form that allows the whole to be reconstructed from a part. We call such text **self-correcting.** Consider:

> *Mrs. Gay Field received $5000, five hours after mailing.*
> *Mrs. Ambrose received $4000, four hours after mailing.* [1939]

Here the redundancy of the numbers allows a copier to infer the value of one illegible number from the remaining three. The absurdly short waiting periods are probably counter-replicative.

Names may also be self-correcting, as by widespread familiarity.

> *Mr. Owen, from Sordt (Victoria), won the first prize of the Michigan lottery, 1,200,000 pounds sterling.* [Switzerland, 1928, translation from French]
> *Mrs. Barnes of Victoria won the big prize in lottery of 20,000 golden liras on the ninth day.* [Florida, 1931]

Here the word "Victoria" is very recognizable, internationally known, and unlikely to be confused with another geographical location. Just from the above, this repeated occurrence could be a coincidence, but other features in these two letters reveal that the 1931 letter was a circulating English translation of a letter close to the 1928 French language letter. However all the names, except "Victoria," have been so transformed that they betray no relation. For example, "*Mr. Putz, of Michigan, owes his fortune to the fact that he scrupulously followed these instructions"* [1928] is cognate to "*Pola Negri owes her fortune to having carried out instructions in a most conscientious way*" [1931]. Even in another 1928 Swiss letter we find "*M. Privois, from the State of Cadron, owes his fortune to the fact that he scrupulously followed the above directions*" [1928]. Thus, especially in these hand copied letters, copying names is very noisy, except for those that are self-correcting.

Below is a list of variations on the name of the victim in the Unbeliever's Death testimonial.

Zarin Berrachille [1973], Zerin Berreskilli, Zarin Rurreasville
Zorin Barrachilli, Zerij berreskelli, Caren Wichile, Zerim Berreball
Zarin Borracbilt [1975], Brian Barbialle, Brian Barabiaila
Dalin Nairchild [1979], Colin Holschild, Darinn Meirchild,
Dalan Fairchild [Kiss-Love founder], Darin Hairchild, Dolon Fairchild

We pause here to note that the family name "Fairchild" is self-correcting since it is a compound of two familiar English words and a familiar name. Fairchild predominated from 1983 onward. We designate it by

"F" below, and continue with the tortuous transformations of the first name, which never settled.

Dalon F, Delan F, Sobon F, Dalah F, Dallan F, Davan F, Galan Pairchild
Bolan F, Blaine F, Olean Lauchild, Dales F, Dallas F, Galan Paircheild
Dian F, Dilan F, Daln F, Darlene F, David F, Delri F, Mr. Fairchild
Deian F, Delea F, Dala F, Karen F, Nolan Foarohald, Darron F, Mellisa Horton [1994]
Carl Daddit (name from the prior testimonial, which was deleted), Colan Fatchild [France, 1997]
Brian Fairchild [2003]

Despite the great initial variation in the family name, and continuing variation of the first name, clearly almost all copiers are trying to get it right. Some are probably working with a highly degenerate photocopy. Perhaps "Fairchild" has more going for it than just self-correction. It is an innocent and virtuous sounding name, yet this seeming virtue offers no protection if one destroys the letter. On a translated Mexican letter: *"Isabel Buena lost her copy and lost her life"* [1984]. Again the family name is a word in Spanish, and a virtuous one (Buena = good). Such a tactic may boost propagation slightly, but recall that chain letter evolution is characterized by the rise of new variations that eliminate their cousins and establish their incidental features on every letter. If the founder of the Kiss & Love titles [1983] had read "Zarin Rurreasville" instead of something close to "Dalan Fairchild," Zarin would have been everywhere until obliterated by copy errors. And if "Rurreasville" had ever stumbled on a self-correcting form, it would not have been "Fairchild." Self-correcting text does not increase propagation, it only preserves itself from corruption. Its only chance for predominance is to ride a successful innovation, self-correction preserving it in the outflow where another name would soon disappear in the copying noise. This is how "Fairchild" became near universal, by riding the hyper-competitive Kiss-Love founder and enjoying near immunity from corruption in the process.

The name "Elliot" (as in the Elliot Wins and Loses testimonial) also appears to be self-correcting. This may be due to the scarcity of common surnames that begin with the letters "Ell." Also it seems some letters remain more legible in late generation photocopies than others; upper case "E" for example.

Self-correction applies to most of the text of a chain letter, since there is inherent redundancy in language. Some words and phrases are often corrupted, others rarely. Spoken replicators transform to a more memorable form, written replicators to a more self-correcting form. However, it is difficult to formulate general principles to assess the self-correcting power of any given text. We will rarely make use of self-correction, instead focusing on text whose meaning increases propagation.

Copy quotas.
All known luck chain letters specify a fixed number of copies that the recipient is directed to produce.

> . . . *make seven copies of it* . . . [U.S., ca. 1902]
> *Send this one and 4 others.* [U.S., 1929]
> *Make 12 copies and mail it to your friends.* [International, 1949]
> *Voce deve fazer 24 copias* . . . [Brazil, 1994]
> *Photocopiez la ou copiez en 28 fois.* [France, 1995]

In rough chronological order, we have examples (from various countries) with copy quota: 7, 9, 8, 5, 13, 12, 20, 24, 30, 25, 29, 28 and 4. The higher the copy quota, the higher will be the percentage of recipients who immediately discard the letter or who simply pass on the original, but those who are fully complying are sending out more copies. Thus for new types, probably the copy quota has adjusted so total propagation is near a maximum. However with time the copy quota becomes a known tradition for the type which rarely changes unless other key changes are also made.

Do luck chain letters threaten punishment if you distribute fewer copies than the quota? I have yet to find an

example. Often the only implied threat is for "breaking the chain," which could be interpreted as requiring only that one pass on the received letter to avoid bad luck. Partial compliance to the copy quota may account for many distributions. Thus it would probably reduce propagation for a chain letter to explicitly threaten this behavior, since then some may reject the letter entirely as too demanding. Yet it is essential to get recipients to produce the full quota of copies as often as possible. This dilemma has resulted in the survival of chain letters that are **ambiguous** on this issue. You are told "*you must make twenty copies."* And after his secretary made *twenty copies* and sent them out, Constantine Dias won a lottery. But in the same letter, bad luck comes only to those who distribute no copies at all, as in Death and Money where life is lost after one "*failed to circulate theletter."* An explicit statement of this option appears on a Russian chain letter [Homily, 1990], where just passing it on is considered a "neutral" act.

Copy First versus Copy Later.
So by just passing on the original letter, perhaps one may avoid bad luck. How many copies must one distribute to get good luck? Again chain letters are ambiguous; by one reading you need not distribute a single copy! The contemporary mainline letter is a compound of two differing folk beliefs or susceptibilities: **Copy First** views the work of replication as bringing subsequent good luck, **Copy Later** sees the letter as a charm whose mere receipt brings luck.

COPY FIRST text requires one first distribute copies of the letter before receiving good luck, as if in compensation. "*You must make twenty copies . . . and after a few days you will get a surprise."* One cannot refuse to send copies just because no luck is received: "*For no reason whatsoever should this chain be broken!"* However, ambiguously, bad luck may be reversed by late compliance to the letter's demands, as in Lost Job - Better Job.

The Copy First orientation places the recipient subordinate to Fate. Hope for good luck and fear of bad luck are about the only motives for replication. Copy First testimonials are of the Lose, Comply-Win, and Lose-Win structure. Much of the text of Lottery24 is Copy First.

The Copy First structure also appears on other social replicators. Devotional messages have been placed in the classified advertisements of U.S. newspapers for many years. Here is an example (my italics) from the "Religious Announcements" category of *The Los Angeles Times* (Nov. 25, 1991):

> SAINT JUDE NOVENA. May the Sacred Heart of Jesus be adored, glorified, loved and preserved throughout the world now & forever. Sacred Heart of Jesus, pray for us. St. Jude, Worker of Miracles, pray for us. St. Jude, Helper of the Hopeless, pray for us. Say this prayer 9x a day for 9 days, then *publish & your prayers will be answered*. It has never been known to fail. R.P.

COPY LATER may be the older of the two approaches since it has affinity to the Letters from Heaven that claimed that their mere possession would grant protection from various misfortunes. For chain letters, it is receipt that grants a benefit: "good luck," backed by testimonials of getting money. Thus "*A U.S. officer received $7,000."* Or we have the striking objectification of luck in *"The luck has been sent to you."* This letter continues *"You are to receive good luck within four days after receiving this letter"* - with no conditions mentioned. These examples are from Death20 [1959].

In the Copy Later orientation, one is almost bargaining as an equal with Fate. If no good luck is received in the stated interval, the charm has failed, and perhaps no copies need be distributed. If luck is delivered, the motives for replication now include gratitude and benevolent transmission of the charm to another. Hope and fear are less active, though not absent. The great taboo is to receive luck but then neglect your side of the bargain and fail to distribute the letter. You may lose what you received: "*Don Elliot received $60,000 but lost it because he broke the chain"* - or you may lose much more " . . . *before his death, he received $775,000 which he had won."* Copy Later testimonials are of the Win and Win-Lose type. The notion of simply passing on the original letter to avoid misfortune is associated with the Copy Later belief (as expressed by Boris

Pasternak in 1959, see also [lr1990]). The chain is a chain of benevolence, not of fear. Equity is maintained by granting it to one more person. In the Death and Money testimonial a life is lost after General Walsh "*failed to circulate the prayer (letter)*." But this is not punishment solely for not complying, rather it is for not complying after receiving a large sum of money. Thus the letter grants luck by mere receipt, but exacts a dreadful toll from ingrates who do not then pass it on. This view of chain letter magic is outside the mindset of some revisers. Two letters collected by folklorist Paul Smith modify Death and Money to read: "Before her death he received $7,775.00 *after circulating it just prior*" [England, 1992]. This attempts to cast the events in a Copy First frame, but implies the wife died despite prior circulation of the letter. A North American revision fails in the same way [1991].

Other social replicators display the Copy Later structure. The following example (my italics) was published in *The Los Angeles Times* classifieds (Feb. 7, 1990):

> TO THE HOLY SPIRIT. You who made me see everything and showed me the way to reach my ideals. You who gave me the divine gift to forgive and forget the wrong that is done to me. And, you who are in all instances of my life with me. I thank you for everything and confirm once more that I never want to be separated from you, no matter how great the material desires may be. I want to be with you, and my loved ones in your perpetual glory. Thank you for your love towards me and my loved ones. Person must pray this prayer 3 consecutive days without asking for favor. After 3rd day favor will be granted no matter how difficult. *Promise to publish this dialogue soon as favor is granted*. My prayers have been answered. P.L.I.

It is tempting to claim that Copy First language is adapted to the cultural context of politically authoritative and Roman Catholic (salvation by works) Latin America, whereas the Copy Later language is adapted to politically democratic and Protestant (salvation by grace) North America. However the origin of key Copy Later statements on Death20 is unknown, for example the Death and Money testimonial. Also recent highly propagative innovations that definitely originated in North America have been Copy First (e.g., the Car testimonial).

Copy First and Copy Later may not be folk beliefs, but rather susceptibilities to one or the other side in a branching that naturally develops when supernatural promises compete for replication. A **banknote chain** is a short message on paper money that encourages the reader to copy it on other bills. These varied replicators have appeared on U.S. bills for several years. Here are two examples:

> When you receive this bill you will be blessed with a lot of money *if you rewrite this saying* on ten one dollar bills. (U.S., $1 bill, June 1998).
>
> Anyone that receives this bill will be blessed with lots of money. *Then write this* on ten other bills. (U.S., $10 bill, June 1998)

This is the essence of Copy First and Copy Later, in a non-traditional milieu. Now if the last example were a chain letter, we should conclude that to sustain circulation about one in ten people think the luck worked for them. But for banknote chains this conclusion is baseless - just consider, no one throws these away. Still it will be interesting to see which of these, if either, predominates. For chain letters Copy First is increasing. But contemporary letters remain ambiguous on whether compliance or receipt brings good luck - thus we conclude Copy Later language still motivates replication.

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3.8 Effective Distribution

Targeted distribution. *Deadlines*.

The manner in which chain letters are distributed may significantly affect propagation, but chain letters have little to say about it. Mainline letters have always just said to "send" the copies. In practice they are sent by mail, placed in work mail slots or left where they will be found, such as on car windshields or desks. In Brazil they may be left in elevators and on doorsteps. When a choice of recipients can be made, the persons selected obviously will affect the number of second generation copies produced. Chain letters have evolved instructions for this choice that probably work better than anything a mere mortal could design.

Targeted distribution.

By **targeted distribution** we mean any preference or exclusion in the selection of recipients. Chain letters usually have something to say about targeting. The most common recommendation is *"send these to your friends*" [1902]. This may seem of little help to propagation, but note that at the least it discourages sending to a celebrity - an almost sure waste of a copy. The next major innovation in mainline letters appears on Good Luck: *"Copy this out and send to nine people whom you wish good luck"* [1922]. Though this opens the door to celebrity distributions, it may also target people who need good luck. During the Great Depression "*whom you wish good luck"* was changed to *"whom you wish prosperity to"* [1933]. During the perils of World War II *"prosperity"* changed back to "*luck"* [1944]. With the Death20 letter this was improved to read *". . . to friends you think need good luck"* [1959]. With this targeting the chain letter will seek out those in a desperate situation and who are thus more vulnerable to its promises and threats. But some recipients may give up on the letter if they have fewer than twenty friends. On the It Works innovation of 1979 "*friends"* has changed to "*people,"* giving the current and stable reading "*Send copies to people you think need luck"* [1997].

The Lottery block originally stated: " . . . *send it to your friends, parents or acquaintances*." With new titles in 1983, "*parents"* was deleted, and "*friends and associates"* now appears (> section 4.7). The classroom Romance Game addresses girls, so "*Send this to 7 people, no boys"* [1998]. There is, however, an Internet version that is genderless [e1995]. The same letter also specified "*You can't send it to the original person"* meaning the sender. Others chains specify the copies are to be sent to *"diferentes personas"* [1980]. When a list of prior senders is present this by itself aids in effective targeting since one may avoid sending a copy to any of these people. This may be explicitly instructed: "*Important: Do not address your letter to persons already on the list*" [International, 1949].

We should emphasize that evidence from the dated collection shows that chain letters do NOT evolve by a series of small (secondary) improvements. Instead, a killer variation comes along every few years, swamps all its rivals, and universal details are set by what was linked to it. But small improvements can still accumulate for reasons previously discussed (< Section 3.3).

All the above targeting instructions likely increase propagation over no suggestion at all. However, the following, which appeared on a luck chain letter, seems counter-replicative: "*Limited to Masons"* [1954]. A similar restriction arose in the course of the Springfield, Missouri pyramid craze (1935), and during World War I the Ancient Prayer split into specialized versions that circulated within various fraternal organizations (NYT, 1917). The Send-a-Dime craze manifested letters that were restricted to people with last name "Smith," another for "Johnson" (DP, 1935). This "over-specialization" phenomenon probably arises when there is a chain letter boom and a recipient has many versions to choose from. One which then makes a personalized appeal may be chosen over others. But this is a recipe for extinction since targeted groups will be the first to overdose on the letter. The last three examples of over-specialization were definitely during chain letter booms; perhaps "*Limited to Masons*" is evidence that there was a luck chain boom around 1954, soon after the innovations of the Luck by Mail type appeared.

In Section 2.2 we listed as a characteristic of luck chain letters that they contained some language about going around the world.

> This prayer was sent to me and is being sent all over the world. [1910]

> This prayer was sent to me and must be sent all over the world. [1912]
> The chain was started by an American Officer and should go three times around the world. [1922]
> Prayer of Safety must go all over the world by card. [Postcard, 1941]
> It has been around the world four times. [1944]
> Since this chain must make a tour of the world, . . . [Lottery24 block, 1974]
> It has been around the world nine times. [Death20 block, 1974]
> This was sent by a priest from Columbia around the world . . .
> This started in Malabon and spread throughout the world. [Mexico / Philippines / U.S., 1984]
> Cette chaine a fait 7 fois le tour de la terre. [France, 1995]

What replicative advantage does this device bestow? Is it merely a tradition whose only advantage to propagation may be that it gives the letter an appearance of respectable longevity? This does not explain the success of the early forms of this device, beginning around 1910, though it may have some validity in recent decades. We propose that these statements influence targeting, suggesting that copies be sent to distant places. Chain letter versions that bore this device were less likely to die off in an immunized local population. They were more likely to take hold in foreign countries. Note that early versions after 1910, and those on the modern Lottery24 letter, are stated as mild commands. This device is comparable to the hooks and parachutes present on some seeds. Awareness of this need for dispersion appears early on a quota 3 composed solicitation for funds for a monument to slain President William McKinley:

> It would be advisable to send one to a nearby friend and the others to friends as far away as possible, in order to send the plan broadcast. [Oct. 1905]

This letter had been circulating for around four years, and according to a number present, had gone through 209 generations! An early version does not have the dispersion request [Dec. 1901].

Deadlines.
Chain letter events in the 20th century reveal that for propagative success it is not enough merely to reproduce in quantity - it must also be done quickly. Repeatedly a new variation will flood potential senders, thus starving out competing variations for the attention, energy and respect needed for compliance. Consequently we included a time limit in our measure of propagation: the number of descendants produced **within a month**. Around the turn of the century a **deadline** appeared on a chain letter, and ever since they are near universal.

> Now, within seven days after you receive this letter, make seven copies of it exactly as it is written and send these to your friends. [1902]
> Those who wrote it and passed it on before nine days, starting the day received, and mailed to nine of their friends, on the 9th day re-ceived some reward. [1911]
> Do not forget this day for the next nine days. [1917]
> Do it within twenty-four hours and count nine days and you will have some great good fortune. [1922]
> Do not keep this letter. It must leave within 96 hours after you receive it. [1959]

The redundancy in the numerical specifications in our first two examples above provides self-correction, protecting the copy quota and deadline from corruption. The first example is from the chain letter protesting Sabbath violations. Thus the number seven was likely chosen because it is the number of days in the week. This is also our earliest example of a deadline, though we do not know if this was the first. If so, its invention may have been motivated by the desire to utilize the venerated seven day interval, rather than by an anticipation of increased propagation.

Some versions of the Ancient Prayer postcard chain ask the sender to date copies: "*No name sign date only*"

(1912). This would remind recipients of the day of receipt, discouraging shifting deadlines. On some luck chain letters the deadline has been measured in hours, as in the last two examples above. This may just be a stylistic rider, or perhaps there is some self-correction, especially for the 24 hour deadline that held from 1922 until the arrival of quota 20 letters in 1959.

Many Ancient Prayer versions prescribe sending a copy one day at a time: ". . . *he who will write it for nine days, commencing the day received* . . ." [1908]. This keeps track of the deadline by counting it out. It also associates the chain letter with the Roman Catholic Novena devotion, which involves daily observances for nine consecutive days. This would have been apparent to Catholics at the time, but invisible to most Protestants. Collecting has revealed a small but long lasting niche in North America for an explicit Novena devotional chain letter [1945, 2000]. As discussed in Section 3.4, there is an advantage for a letter to be identified as one's own by different ethnic or religious groups. A similar device (ambiguity) may be at work in "*This prayer was sent by Bishop Lawrence, recommending it to be rewritten and sent to nine other persons"* [1905]. Bishop William Lawrence was the Episcopalian Bishop of Massachusetts and an author, well known among American Protestants of the time. Likely many Catholics would have presumed by his title that he shared their faith. Incidentally, Lawrence had nothing to do with the chain letter, but received complaints from all over the world for his alleged endorsement (Lawrence).

Can one still receive good luck, or escape bad luck, by distributing copies after the deadline? The answer is a clear "maybe." Considering first the "Copy Later" Death20 block, the only explicit deadline statement is "*Do not keep this letter. It must leave your hands within 96 hours."* As noted above, this seems like you only need to pass on the original. And there is no mention of someone suffering misfortune on the fourth day after receipt. Examining the "Copy First" Lottery24 block, there is no explicit deadline statement. Nine days seems to be the implied deadline, judging from Lost Job - Better Job and the promise of a "*surprise*" in nine days. Thus again, it appears ambiguity is the optimal policy. The letter needs to encourage promptness and does so with a deadline and accounts of bad luck for tardiness: at the same time it needs to encourage late compliance and does this with a Lose-Win testimonial. We will say more about the missing deadline on Lottery24 (> quota 24).

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4. EVENTS IN CHAIN LETTER HISTORY

4.1 THE ORIGIN OF MONEY CHAIN LETTERS (1922 - 1935)

Introduction.

In the spring of 1935 a chain letter craze developed that was to sweep the world. This was the advent of money chain letters. Post Office officials first became aware of the existence of the craze when "floods of send-a-dime chain letters threatened to swamp the Denver mails" (*Denver Post,* April 19). The name "Send-a-Dime" has stuck, even though this name never appeared on the letter, and most were titled "Prosperity Club." Despite immediate threats of prosecution, on April 28 alone the Denver Post Office handled an estimated 165,000 chain letters (*DP*-9a). The craze rapidly spread to other cities - on May 8 the "chain letter splurge" had increased the St. Louis daily mail average from 450,000 to 800,000 letters (*DP*-19). Probably more letters were passed hand-to-hand then mailed (*NYT*-39). The world wide distribution of money chain letters, just in 1935, surely far surpassed a billion letters.

In this section we will show, as everyone assumed at the time, that Send-a-Dime was a composed letter. But,

ingenious as this composition was, it was closely based on an existing luck chain letter, and this letter itself was very likely producing money for insiders. We have but one example [1933] of this Prosperity type letter from before the Send-a-Dime craze, published by folklorist Harry Hyatt (Hyatt, 1935). Finding more pre-1935 Prosperity letters should be a prime goal of ephemeral paper collecting, since they could tell quite a story. For one, they should reveal the development of the Prosperity type from the previous Good Luck type of the 1920's. That such a step-by-step development took place is fairly certain. We will make a guess at this development here, and hypothesize some intermediate letters. But the history of chain letters is not deterministic, and this reconstruction will likely have to be changed when more letters are collected. However we can reliably state that the key innovation that led to money chain letters was the managed list, where senders are instructed to remove the top name and address and insert their own at the bottom. Our earliest example of such an escalating list is Hyatt's 1933 letter, but likely a managed list had appeared a few years earlier on a letter that was closer to the Good Luck type. The presence of a managed list of names and towns on a luck letter leads to an amazing consequence: for a brief period at least, luck chain letters worked! That is, some people living in small towns received unexpected money in the mail. We will make the case for this "Miracle" letter in detail below. Other key innovations that led to money chain letters were the reduction of the copy quota from nine to five, and the change in the gender of listed prior senders from all male to all female.

For detailed comparison we first give the texts of three key letters.

(1) Our starting chain letter is Good Luck, which according to legend was started by an American Officer during World War I (du Von, 1935) (Bender, 1968). However our earliest examples are from 1922. Good Luck was apparently the first luck chain letter to make a complete break with religion, and the first to mention "luck." Good Luck used the same copy quota nine as the previous Ancient Prayer, but sped up circulation by reducing the deadline from nine days to "*twenty-four hours*." Most versions had a leading list of prior mailings in the format "X to Y" as below.

(2) The next text is Hyatt's 1933 luck chain letter from Illinois (Hyatt). A key feature is a leading list of names and towns (Hyatt left out two names and two towns for privacy). We will detail below how the Hyatt letter differs from the prior Good Luck type. These changes reveal a pecuniary motivation masked as superstition and charity. Throughout this section, features shared with prior letters (disregarding wording and order) are in the normal font, and ***innovations are in bold italics***.

(3) The concluding letter of our trio is an example of Send-a-Dime that probably comes close to its original form. This was published in an obscure periodical on direct mail (Postage and the Mailbag). Most published versions left out the list of names. I have made a few minor changes to conform to earlier letters. Send-a-Dime is clearly based on a letter very close to Hyatt's 1933 Prosperity example. Both have a leading managed list of six prior senders, a copy quota of five and a promise of "prosperity."

(1) Good Luck ---------- [1922] ----------

Birmingham, Ala. June 8, 1922

Claude Sanders	to	Phil Gleischman
Phil Gleischman	to	M. H. Starr
M. H. Starr	to	J. V. Allen

[25 pairs of names omitted here]

Walter S. Coleman	to	A. A. Gambill
A. A. Gambill	to	J. F. Suttle

Copy this out and send to nine (9) people whom you wish good luck. The chain was

started by an American Officer and should go three times around the world.

DO NOT BREAK THE CHAIN, for whoever does will have BAD LUCK. Do it within twenty-four hours and count nine days and you will have some great good fortune.

"Let all go smiling through 1922."

(2) Prosperity ---------- [1933] ----------

We trust in God. He supplies our needs.

Mrs. F. Streuzel...,[***omitted***]... ***Mich.***
Mrs. A.Ford.....,***Chicago .....Ill.***
Mrs. K.Adkins.....,***Chicago .....Ill.***
Mrs. R.Arlington...,[***omitted***]....***Ill.***
Mrs. [omitted].....,***Quincy.....Ill.***
Mrs. [omitted].....,***Quincy.....Ill.***

Copy the above names, omitting the first. Add your name last. Mail it to five persons who you wish *prosperity* to. The chain was started by an American Colonel and must be mailed 24 hours after receiving it. This will bring *prosperity* within 9 days after mailing it.

Mrs. Sanford won $3,000.
Mrs. Andres won $1,000.
Mrs. Howe who broke the chain lost everything she possessed.

The chain grows a definite power over the expected word.

DO NOT BREAK THE CHAIN
See what happens on the 9th day.

(3) Prosperity Club ---------- [1935] ----------

PROSPERITY CLUB
In God We Trust

Mrs. Christine Galuppe	***828 29th St.***	Denver, Colo.
Miss Alice Ferguson	***1440 Marion St.***	" "
Mrs. Carl Ferguson	***1440 Marion St.***	" "
Miss Katharyn Wiley	***2317 Dexter St.***	" "
Miss Thelma Hardy	***2317 Dexter St.***	" "
Mrs. Villa Pickens	***1320 St. Paul St.***	" "

Faith Hope Prosperity

This chain was started in the hope of bringing prosperity to you.

Within ***three*** days make five copies of this letter, leaving off the name and address at the top and adding your name and address at the bottom, and mail to five friends to whom you wish prosperity to come.

In omitting the top name, send that person ten cents (10c) wrapped in paper as a charity donation. In turn, as your name leaves the list you will receive 15,625

letters with donations amounting to $1,562.50.

Now is this worth a dime to you?

Have the faith your friend had and the chain will not be broken.

Transitions from Good Luck to Prosperity to Prosperity Club.
Michael Preston observed (Preston) features shared by Good Luck (1928), Prosperity (1933) and French letters from [1928]. Both Good Luck and Prosperity instruct you to copy the letter and send it to people to whom you wish luck / prosperity, this to be completed in 24 hours. This will bring you luck / prosperity within 9 days. Both attribute the letter to an American officer and warn against breaking the chain.

Here we hypothesize missing phases between two letters by (1) identifying all the changes required to transform one letter to the next, and (2) grouping together changes that share a single common motivation, consistent with necessary order relations among the changes. We ignore reordering and differences in word choice (e.g., "American Officer" equates to "American Colonel"). The following changes transform Good Luck (1922) to Prosperity (1933), and this to Prosperity Club (1935).

Starting with the Good Luck letter of 1922.
(1.1) The gender of the people sending the letter changed from male to female.

(2.1) The names on the list were written singly (instead of in pairs).
(2.2) The number of names on the list was fixed at six.
(2.3) "*Copy the above names, omitting the first. Add your name last*." was added below the names.
(2.4) The copy quota was changed from nine to five.

(3.1) The title "*We trust in God. He supplies our needs*" was added.
(3.2) Cities and states were written besides the names.

(4.1) "*The chain . . . should go three times around the world*" was deleted.
(4.2) Two mentions of "*luck*" were changed to "*prosperity*."
(4.3) Three testimonials concerning financial gain and loss were added.
(4.4) The warning of "*bad luck*" if you break the chain was deleted.
(4.5) "*The chain grows a definite power over the expected word*" was added.
These changes complete production of the Prosperity letter of 1933.

(5.1) The title "*Prosperity Club*" was added.
(5.2) "*He (God) supplies our needs*" was deleted.
(5.3) Full street addresses were used.
(5.4) " . . . *within three days* ..." - the deadline was extended from one to three days.
(5.5) Added at the end: *In omitting the top name, send that person ten cents (10c) wrapped in paper as a charity donation. In turn, as your name leaves the list you will receive 15,625 letters with donations amounting to $1,562.50. Now is this worth a dime to you? Have the faith your friend had and the chain will not be broken.*
These changes complete production of the "Prosperity Club" letter of 1935.

In Table 4 we assign a motive to each of these five groups of changes, and hypothesize three intermediate chain letters between Good Luck and Prosperity. Clearly the order of the innovations could vary some, and transfers from foreign letters could further complicate matters. Even if all the innovations were in the order shown, it is unlikely that just one person made all the changes in each group. But it simplifies explanation to

assume so, and introduce fictional scenarios below for each new letter.

Table 4 - From Good Luck to Prosperity to Prosperity Club.

Changes	New Motive	Name of resulting letter	Date	Link to text
prior	Status	Good Luck for Men	1922	Alabama
1.1	Propriety	Good Luck for Women	1926?	Hypothetical
2.1 - 2.4	Economy	Good Luck for Women - Easy	1928?	Hypothetical
3.1 - 3.2	Faith	Miracle	1932?	Hypothetical
4.1 - 4.5	Money	Prosperity	1933	Illinois
5.1 - 5.6	Charity	Send-a-Dime	1935	Denver

Good Luck for Men. (Motive: status)
We guess that the Good Luck letter did not have a leading list of names when it first started, perhaps during the Great War. Say in 1922 a celebrity (X) sends a Good Luck letter to friend (Y) and happens to head the letter "X to Y," probably not expecting this will be copied. If you are Y, if you include "X to Y" on your nine copies, you display to others that you are a friend of X. But you don't want to be too obvious about this, so you write "Y to Z1," Y to Z2," etc., each below the "X to Y" on the letters you send to Z1, Z2, etc., as if this were the required form. The process can repeated downline. In our example (< above) there are thirty pairs of names. In his syndicated weekly column, Ring Lardner said he had received twelve such letters and recognized some names on the lists (Lardner). A British example from 1928 contained 99 names, including officers and judges (Burrell).

Of the 31 different names on our example, all 18 that have identifiable gender are men. It is the same on other examples - all men. So we call this letter "Good Luck for Men." We identify the principal motive for the circulation of this variation as status display, though the initial innovation (X toY) was likely whimsical or merely someone's habitual form for letters.

Good Luck for Women. (Motive: propriety, Change 1.1)
All names on Prosperity (< above) are of married women, and women dominated early Send-a-Dime as well (RMN 1935-1). The change in gender could have occurred when a copy of the "Good Luck for Men" version was sent to a woman and soon only women's names appeared on the list. Or a letter could have been restarted by women. In either case, when all names began with "Mrs.," both propriety and precedent would dictate copies be sent only to other women. We do not know when the Good Luck gender change happened, but it was probably necessary for the continuation of the letter into the 1930's. Reports from England in 1928 suggest the Good Luck letter there had male and female branches (Burrel, Wright). A circulating English translation [1931] of a French language letter [1928], pre adapted to the Great Depression by having some financial testimonials, had a "from X to Y" leading list of 14 names, thirteen identified as "Mrs." and one as "Jean." Charitable appeals are important throughout the origins of Send-a-Dime, and presumably these could gain more sympathy from women.

Easy version. (Motive: Economy, Changes 2.1 - 2.4)
There are 30 pairs of names in the above example of Good Luck for Men, listed in a vertical format as "X to Y." Suppose a secretary received one of the above letters with as many women's names and thought it would be fun to send it to her friends. But she saw no reason to burden herself, nor her friends, with more work than necessary. To economize she listed the names once, instead of using the prior "X to Y" format in which most appear twice. She also reduced the list to six names, and added a list management instruction so the list would not increase. To save further time she may have reduced the copy quota from nine to five. Why five copies? According to a 1941 secretarial manual (Gregg), with standard weight paper only four legible carbon

copies could be made, plus the first page makes five. The change from nine to five copies occurred during or before 1929, since we have a luck chain letter intermediate between Good Luck and Prosperity which has copy quota five [1929-06]. This letter, however, is probably not in the lineage of Prosperity since it has no list of prior senders.

The Miracle letter. (Motive: Faith, Changes 3.1 - 3.2)
With the leading list of names under control, a title could more conveniently be placed and retained at the top of the page. "*We trust in God. He supplies our needs*" was added above the six names. This was very likely done after the depression had started (1929), the initial intent being to bolster faith in response to economic peril. Letters with this timely message may have replicated more than untitled versions. Other titles may also have replicated, but the charitable implications of "*He supplies our needs"* were to be important. We guess that at about the same time the tradition developed to add one's town and state on the senders list. This was not possible with the "X toY" format on Good Luck for Men. The new title and a managed list of names with towns and states, innovations of seeming minor importance, produced an amazing result that in turn led to the greatest "mind virus" of the last century. We incorporate the changes so far, 1.1 to 3.2, in the following hypothetical "Miracle" letter which we guess actually circulated around 1932. The names are fictional. Recall that bold italics represent innovations over the prior form (in this case, over "Good Luck for Women - Easy").

The Miracle letter ---------- Hypothetical - around 1932 ----------

We trust in God. He supplies our needs.

Mrs. A. Allen ***Chicago, Ill.***
Mrs. B. Boyer ***Chicago, Ill.***
Mrs. C. Carter ***Peoria, Ill.***
Mrs. D. Doyle ***Shelbyville, Ill.***
Mrs. E. Edwards ***Middleton, Wis.***
Mrs. F. Fairchild ***Small, Idaho***

Copy the above names, omitting the first. Add your name last. Mail it to five persons who you wish luck to. The chain was started by an American Colonel and must be mailed 24 hours after receiving it. This will bring luck within 9 days after mailing it.

DO NOT BREAK THE CHAIN See what happens on the 9th day.

This letter has been mailed by "Mrs. F. Fairchild, Small, Idaho" (call her Flora). Perhaps the Fairchild family has lost their farm and are impoverished. Willing to try anything, Flora obeys the instructions on the letter and sends out five copies with her name now at the bottom of the list of six names. She has removed a prior top name, but she did not send out any money, and there is no instruction to do so. Within nine days she begins receiving money in the mail from strangers, from all over. Dimes, quarters, even a five dollar bill! She remembers the luck chain she sent out. It has worked! Flora eventually receives a total of about $30. She accepts what has happened as divine providence. She placed her name on a list below the words "*We trust in God. He supplies our needs*." To take the letter at its word would not be an unusual conclusion in 1932, especially since managed list instructions and money chain letters had never been seen before.

Why did Flora receive the money? Each letter that she sent out that was processed according to the instructions would result in five new copies with "Mrs. F. Fairchild, Small, Idaho" moved up one notch in the list. If every recipient fully complied, eventually there would be $5^6 = 15{,}625$ letters with her name at the top. Of course such a rate of compliance is all but impossible. But if just two of every five people complied, there

would eventually be 5 x (2^5) = 160 letters with "Mrs. F. Fairchild, Small, Idaho" at the top. That is a high rate of growth also, but possible during a "chain letter fad." Note also that Flora's name and town are self-correcting, so even after 5 generations of hand copying there is a good chance they would be preserved.

We have presumed the "Miracle" letter contained only names, cities and states (no street addresses), which is the form Hyatt gave for the subsequent Prosperity letter. This in not a deliverable address for someone living in a city or town of more than, say, twenty thousand population (such as all but the last town I selected above for the Miracle letter). But in 1932 it was an adequate address for people in small towns. I have seen many old covers without a street address. A person would not hesitate to address a letter to "Mrs. F. Fairchild, Small, Idaho" knowing it would get delivered. Alternatively, Flora may have received a version of the letter which had complete addresses, and followed the example.

So say there are over a hundred letters received with an adequate address for Flora at the top of the list, and many others received with her address further down on the list. Why would anyone send her money? After all, the "Miracle" letter does not request anything be sent. First, recall the tradition of charity chain letters. We have a divinity student's 1889 chain solicitation for money [1889], and there is a 1916 example soliciting for an "old railroad man" [Billy]. During the Great Depression there could have been a proliferation of charity chain letters of various forms, and begging letters. Some sympathetic recipients could have responded without careful reading of the Miracle letter. Above the names appeared: "*We trust in God. He supplies our needs.*" This suggests that all six of the people listed are dependent on religiously motivated charity. Thus some people, moved by the suffering wrought by the depression, might without reading further send all six people on the list a donation. This would explain the receipt of money "*within 9 days after mailing,"* before there was time for one's name to work to the top. Partial literacy could also bring mistaken responses. And there could have been a tradition that sending money was necessary to receive good luck. Recall the Mexican letters that ask the reader to send a coin forward with each copy mailed out (< Outliers). Or such a recommendation could have been spread by promoters of the letter as part of a conscious scheme to obtain money. However, for our scenario we presume otherwise, since we are trying to reconstruct how such a scheme could have developed in the first place.

What is our evidence for this naive receipt of money? Given the form of the Prosperity type letters, once someone from a small town signed on, and their copies propagated well downline, it would almost have to happen. There is also lost evidence. Around 1975 someone told me that long ago a grandmother had sent out a luck chain letter and got a lot of money in the mail from strangers. At that time I had not seen Hyatt's publication, and did not know that in the early 1930's there were luck chains with lists of names and some mailable addresses. This fact had also been lost in the story I heard. The story seemed so ridiculous that I discounted it and eventually forgot who told me.

If our reconstruction is correct, there were one or two glory years when luck chain letters actually "worked" for some, as if by magic. The money received was not expected by the sender of the letter, nor even by the authors of the innovations that made it work. These surprise benevolences may have inspired a folk belief in the efficacy of luck chain letters that sustained the genre for three generations.

Prosperity. (Motive: Money, Changes 4.1 - 4.5)
We now consider the changes that complete the transition from Good Luck to Prosperity. Stories of the naive receipt of money would circulate orally, or possibly as testimonials on versions of the Miracle letter. Some people would understand the exponential feedback process involved, and would use the letter to try to get money. We can reason out some of their behavior. They would **restart** the letter by replacing the names in the list with aliases; or with the names of conspiring friends and relatives, forming a "circle" of six people. The circle would not feel bound by the copy quota of five, but instead might distribute hundreds of copies. But first, what changes might be made to the prior chain letter to increase cash receipts?

Consider change 4.1: the Good Luck letter stated it "*should go three times around the world*" and someone deleted this in the lineage of the Prosperity letter. Every luck chain letter before and since has had some words about circumnavigation. However, letters that go overseas are unlikely to produce a usable donation, so this deletion suggests financial motivation.

Next consider change 4.2: in two places someone changed "*luck*" to "*prosperity*" in the Prosperity lineage. This could not be accidental - someone hoped, and wanted others to hope, that the letter brings money, not just "luck."

Change 4.3 suggests the same intent: three money testimonials have been added, including "*Mrs. Sanford won $3,000.*" Testimonials about receiving money accumulate on modern luck chain letters, and appeared in 1928 in France (Deonna). But the use of the word "*won*" (instead of "received") twice on the Prosperity letter is suspicious. Possibly it could encourage replication of the letter by people hoping to win a bet. The Irish Sweepstakes was very popular in the early 1930's. Or the letter itself could be some form of lottery, additional instructions being transmitted orally.

Change 4.4 also moves in the direction of money: the previous warning of generalized "*bad luck*" for breaking the chain has been replaced, functionally, by the third testimonial that associates breaking the chain with financial ruin.

Changes 4.1 to 4.4 show that in 1933 there was a replicative advantage for luck chain letters that suggested financial gain, and that de-emphasized the role and reward of luck. Less than two years later a completely rational promise of money, Send-a-Dime, flooded the mails.

However, if we consider the perceptions of a circle of six people who are knowingly "operating" a version of the Prosperity chain for money, it seems they would not want to disclose how the letter worked. Disclosure could generate competing circles, invite problems with taxes or the postal inspectors, and destroy the charitable aura of the letter on which they believed everything depended. Thus the interest of major distributors seems contrary to the disclosures on the Prosperity letter.

To resolve this seeming contradiction, first consider some numbers. Just because we have but a single example of a Prosperity letter before 1935, that does not imply this type of letter was rare. If it could be a "fad" in Adams County, Illinois, why not in any other county in the United States? For that matter, two of the names on Hyatt's Adams County letter are from Chicago. A confused article in *Literary Digest* (April 20, 1937) assumes the reader has received more than one luck chain with list management instructions. Prosperity letters were probably a nationwide fad, producing tens of millions of letters. Even if there were thousands of secretive operators, this is far more letters than they could generate. Next, which alternative would better replicate: secrecy about the money-making properties of the letter, or disclosure? Certainly the more one is convinced that the letter brings donations by an understandable process, the more copies one will distribute. Individual members of a circle would be tempted to tip their relatives about the letter, and stories of its success in obtaining money by rational means would spread along with the letter, boosting replication. Or, in some simpler form, this information may be placed on the letter itself, such as "*Mrs. Sanford won $3,000.*" Such disclosures on the letter would outpace oral recruitment by reaching out at a distance, even to strangers. As people became privy to the opportunity, there may have been a growing core network that preferred secrecy to disclosure. But the letter replicates just beyond that core in vast numbers. The content of a prevailing chain letter is simply what has appeared that best replicates. This may not be what most people want on the letter. Nor can a growing population of initiates easily control content, since their Frankenstein monster of exponential growth will run away and discover unanticipated methods of reproduction.

Evidence for this trend toward rational disclosure includes not only changes 4.1 to 4.4 as discussed, but the last change, 4.5, completing the Prosperity letter. This is the addition: "*the chain grows a definite power over the expected word.*" This may be a corruption or mystification of a prior explanation of how the letter

worked. The word "power" may have first appeared with a mathematical meaning. This trend away from providence or luck, and toward a shared hope for money through mechanism, culminated in the remarkable Send-a-Dime letter.

Prosperity Club. (Motive: Charity, Changes 5.1 - 5.6)
The Prosperity Club (Send-a-Dime) money chain letter was a major rewrite of a Prosperity luck chain letter. Both have the word "God" at the top, a managed list of six names below that, and the instruction to mail it to five people "*you wish prosperity to.*" We now discuss some innovations of Prosperity Club (5.1 - 5.6).

5.1. "*Prosperity Club"*
Likely this was the name chosen by the author for the letter, or for participation in it. "Prosperity" was the stated goal of the prior "luck" letter. Calling it a "club" gave the appearance of organizational reality and encouraged social contact along links. This probably served to unify the independent circles that were operating the Prosperity letter.

5.2. Deletion of: "He (God) supplies our needs."
With Send-a-Dime, it was your friends, their friends, the "club" that delivered prosperity, not God or luck. A nod was given to tradition by the monetary subtitle "*In God we Trust*" (compare to "*We Trust in God*" on Prosperity). The author also deleted all references to good or bad luck that appeared in Prosperity, including the three money testimonials.

5.3. Full street addresses were used. Now everyone could play the game, not just people in small towns.

5.4. "*. . . within three days . . ."*
The deadline was extended from one to three days.

5.5. "*In omitting the top name send that person ten (10c) cents wrapped in a paper as a charity donation.*
This explicit request that money be sent was the key innovation of Send-a-Dime, making it the first money chain letter. The explanation of sending (and receiving) dimes was deftly handled by associating it with the departure of a name from the list, as if in compensation. Note that these dimes were described as a "*charity donation,"* revealing Send-a-Dime's early association with charity. Another key innovation over Prosperity was also present here (its ingenuity camouflaged from our modern eyes by its own success). Prosperity operators must have dreamed of getting a five dollar bill. To fix the amount of the donation, and at just ten cents, would never have occurred to them. However the request for a fixed donation, usually a dime, appears on all prior charity chain letters, such as [1916].

In turn as your name leaves the top of the list you should receive 15,625 letters with donations amounting to $1,536.50.
Instead of trying to explain the exponential feedback process (a lengthy and difficult task, especially in a corruptible medium), the author simply gives the maximum number of dimes one might receive. Thus the reader is challenged to verify this number, and in the process may become obsessed with exponential growth. Even today, tens of thousands of people are fascinated with exponential feedback, and pursue its promise of wealth with money chain letters or multi-level marketing. In 1935, the $1,562.50 maximum payoff would buy about what $25,000 does today.

Though it was to become the mother of all nuisances, the original Send-a-Dime letter was a work of genius. The author understood how chain letters were working then, probably better than we will ever know, and with amazing economy completely rationalized and transmuted this tradition. With a composition of no more than 120 words, a new communications process was introduced to the world. No prior example of this process has ever been discovered. It is related to the older "Ponzi scheme," in which the money of new investors pays the old investors. But a Ponzi scheme has a fixed center, as do pyramid sales and multilevel marketing. The Prosperity Club exponential feedback process does not have a fixed center, and could be

called a "floating Ponzi."

Who wrote Send-a-Dime? In 1935, many people wanted to know, including reporters and Postal Inspectors. Yet the author's identity was never revealed. There was one obscure report that we feel deserves credence - Donald Wickets writing in 1935 (Liberty). Based on Wickets' account, newspaper articles and the evidence from chain letters, we offer the following scenario for the launching of Send-a-Dime.

> In early 1935, a woman living in the Denver area, call her Mrs. C ("C" for charity), has received versions of the Prosperity type luck chain. She learns that it is generating cash donations and completely understands the process. Mrs. C rewrites this letter, producing the first "Prosperity Club" text. She consults a Denver attorney concerning its legality and he gives her the green light (told to Wickets by the attorney). Mrs. C places the names of people needing money on the letters and distributes them, launching a worldwide money chain letter craze. In the first newspaper report on the craze, a Post Office Inspector states: "We intend to trace down the individuals responsible for starting the craze, and when we have the necessary evidence we'll arrest them for federal prosecution." Mrs. C keeps her authorship of the letter a secret, probably as she had planned from the start.

All the names on Hyatt's 1933 Prosperity letter are married women and women dominated early Send-a-Dime, supporting Wickets' claim that a woman started the craze. The text of Send-a-Dime, and the inability of the Postal Inspectors to track down the originator, add evidence that Mrs. C was motivated by charity. Money chain letters leave multiple paths to trace back to a founder. Her name probably never appeared on a chain letter. According to newspaper accounts, early participants in Send-a-Dime perceived it as a charity scheme, often associating it with the "share the wealth" political slogan of Louisiana populist Huey P. Long (Olson). Very soon however, the postal inspectors' worst suspicions were realized as the Send-a-Dime process was used for thousands of petty cons.

The 1935 money chain letter craze was not a single radiating wave, but several pulsations as new methods were devised to recruit participants, thwart cheating and appear legal (as by avoiding use of the mail). "Pyramid schemes" soon developed in which the letter was purchased at parties or meetings organized by those higher on the list. Supervision guaranteed payment to the top person on the list and discouraged restarts. All pyramid schemes are now illegal, even if they never use the mail. A well known example is the "Circle of Gold," begun in 1978 in California. In this scheme one enters the process by buying a letter bearing a list of twelve names for $50. The seller assures that the buyer sends $50 to the name at the top of the list. Two copies of the letter are then prepared with the top name removed and the buyer's name inserted last. The buyer then becomes a seller, and attempts to sell these letters for $50 each, thereby recouping the initial $100 entry cost. We call this process a **Springfield5** type pyramid, since it began in that Missouri city on May 8, 1935 with a $5 ante version. Reporter Allen Oliver recorded conversation about it moments after its inception (*Springfield Leader and Press*). Claims that pyramid schemes are an ancient invention (1958, 1980) have not been verified, though the "triangular" numbers (10+20=30, 10+20+30=60, 10+20+30+40=100) in Mark 4: 4 - 9 (the Parable of the Sower) suggest some organized method of propagating "the word."

Money chain letters have greatly diversified since 1935 and many billions have been mailed worldwide. A 1988 study describes contemporary letters and attitudes of the "players" (Boles & Myers). Money chain letters have also invaded the Internet in great numbers [2001].

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4.2 DIVERGENCE OF LUCK AND MONEY CHAINS (1935 - 1939)

Send-a-Dime crash. *Identity crisis*. *Identification by command*. *A Demon appears*.

Send-a-Dime crash.
The Send-a-Dime chain letter craze of 1935 peaked in the weeks after it received its first newspaper coverage (April 19 in Denver, April 21 in New York). Denver restaurant owner A. McVittie received 2,363 copies in two days (April 27). However, by May 28 the *New York Times* was reporting "Chain-letter fad on wane." Hopes to make money using Send-a-Dime quickly collapsed and the letters became a public nuisance. Parodies circulated that mocked the process and expressed intimidating hostility to senders [1935]. Despite the subsequent long term survival of money chain letters, surely there came a time in the mid 1930's when chain letters were quickly discarded with little examination.

Identity crisis.
While money chain letters were being contemptuously discarded by the millions, what was happening to the prevailing Prosperity luck chain letters? Many must have suffered the same fate since they looked so much like Send-a-Dime. After all, Send-a-Dime was modeled on them, with the leading list of six names. Here is a challenge for you: for a luck chain letter to survive then, how could it convincingly distinguish itself from the reviled and illegal money chain letters?

Identification by command.
You may suggest a prominent disclaimer. But contemporary money chain letters often claim that they are not a chain letter [1978]. Probably from thousands of variations there appeared "*Do not send money"* [1939, probably earlier]. In 1952 an observant reporter, writing about Send-a-Dime, noted that almost all luck chain letters had this sentence (Nelson), as all do now. It mattered little, for replication, whether a recipient sent money or not. The replicative power of "*Do not send money"* resided in its distinguishing the letter it was on from a money chain. What other sentence could so decisively inform a reader that the letter in hand did not ask for money? This use of a command for **identification** is a striking example of the creativity of the folk process. The contents of a traditional chain letter are not understood by their literal meaning, but by their affect on propagation.

Once "*Do not send money*" predominated on luck chain letters, they could not nourish hope of bringing money by some rational means. And the author of Send-a-Dime, the fabulous Mrs. C, had removed all mention of good luck or bad luck, and removed all testimonials. Thus luck chain letters and money chain letters parted ways, and since this splitting of the motivational stream have radically diverged. Testimonials would reappear on money chain letters, but instead of third person tales of good and bad luck we now see first person fictions of riches gained. No luck is involved in these stories - getting rich allegedly follows by cause and effect if you obey the instructions.

A Demon Appears.
A recent (4/2003) discovery reveals that there was an early experiment (1935-36?) in asking for money and threatening bad luck for noncompliance. The following "actual letter found among some mementos" appeared in the March 1977 issue of the nostalgia magazine *Good Old Days* (Esther Norman, 1977).

THE GOOD LUCK CHAIN

Dear Friend:
This chain was started in the hope of bringing good luck to you. WITHIN THREE DAYS, make five (5) copies of this letter, leaving off the top name and address and add your name and address at the bottom of the list. Remember, faith, hope and charity!
Mail or give these five copies to five of your friends or relatives to whom you wish good luck and prosperity to come. Be careful to choose friends who are reliable and dependable and who will be certain to keep the chain unbroken.
An Army officer received $5,000 from sending out the letters. A housewife received $3,000 and a high school student received $1,000, so you can see that it pays off.
Send 10¢ to the top name on the list, the one that you omitted. Wrap it carefully in paper, put it

in an envelope, enclosing nothing else, as a charity donation. In turn, as your name reaches the top, you will begin receiving hundreds of dimes.

Beware! If you break the chain you will have bad luck. One woman was in a car accident when she broke the chain. Another woman was sued for divorce. A man lost his job. A high school student failed to pass in three subjects. Bad luck will follow you if you break the chain!

Send your five letters today! Pick good friends you can trust! The dimes will begin arriving if you do. [1936uu]

This appears to be a fairly typical Send-a-Dime letter with a good luck paragraph and a bad luck paragraph added (in italics above). The good luck paragraph may be an edited version of testimonials circulating at the time on a Prosperity type letter [compare to 1933]. The bad luck paragraph appears to be a composed list designed to frighten a representative variety of downline recipients into sending a dime to the author. None of these testimonials mention a name, nor do they bear the win-lose or lose-win structure of the more memorable testimonials that first appeared during the 1940's and 1950's. An undated money chain letter also received by Ester Norman [1935u] contains some similar rewrites as above ("*Be careful! Choose friends who can be trusted.*") Possibly a single chain letter operator only a few slots upline was the source of the bland threats and promises in the above letter. In any case, scores of chain letter texts support the view that money chain letters abandoned the appeal to good and bad luck, and that luck chain letters, by around 1939, universally demanded that no money be sent. But considering the explosion of money chain letters in 1935 it should not be surprising that there were experiments in hybrid forms of money and luck letters, prior to the evolutionary divergence described above.

But could a hybrid money / bad luck chain long survive, and if so, what might it evolve toward? Surely the most malignant combination of the many motivations for complying with a chain letter is the joining of money with fear. A grim evolutionary potential of a such a letter is extortion, real or simulated. An internet informant told me that a hundred quota money chain letter existed (1996) in India that, as they recalled, contained bad luck warnings against breaking the chain. But threats on money chain letters are not mentioned in over a hundred U.S. newspaper articles, many dating back to 1935. There is the curious suicide of Cecil Headlee, 39, who "shot and killed himself because he thought 'a mob was going to get him for breaking the chain' " (DP, 1935-26). This brief account does not tell us what type of chain letter was involved. I had always presumed it was a "standard" Send-a-Dime type, which we should expect for May 15, 1935. But perhaps some more sinister version of money / bad luck had reached Mr. Headlee, perhaps one that mentioned an unsolved murder. There is no reason to doubt the authenticity of the Norman letter given above, and thus likely more threatening versions did circulate. But if so, they would have been brought to the attention of the postal inspectors, who in 1935 had tremendous discretion as to which transgressors to pursue. A "send money or die" letter would surely have annoyed them, and thus any such demon may have been squashed as it emerged from its egg.

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4.3 LUCK FOLLOWS MONEY (1952)

The Luck by Mail type. *Follow-up letters*. *Design or Self-organization*?

Though luck and money chain letters diverged in content after the 1935 Send-a-Dime boom / bust, some features have appeared in luck chain letters that may have special appeal to distributors of money letters.

The Luck by Mail type.

Our principal text will be a letter mailed anonymously from a town in Tennessee in April 1952 (Halpert). Unlike most chains of the time, the letter did not have a list of senders.

This ***Prayer*** has been sent to you and has been around the world four times. The one who breaks it will

have bad luck.

The Prayer. Trust in the Lord with all thy heart and lean not on thy own understandance in all thy ways acknowledge him and he will direct thy path.

Please copy this and see what happens in four days after receiving it. Send this copy and four to someone you wish good luck. It must leave in 24 hours. Don't send any money and don't keep this copy. ***Gen Patton received $1,600*** *after* receiving it. ***Gen Allen*** received ***$1,600*** and lost it because he broke the chain.

You are to have good luck in 4 days. ***This is not a joke and you will receive by mail***. [1952]

The innovations in this letter, compared to prior letters [1939, 1944], are in bold italics. The numerical specifications (copy quota, deadline and wait) are the same as on these two prior letters. However some recent ancestor of this "Halpert" letter was hyper-competitive: all subsequent mainline luck chain letters collected contain a version of the last statements "*This is not a joke*" and "*you will receive [luck] by mail.*" Consequently we have designated such letters as a separate type, the **Luck by Mail** type. We next itemize the new features on Luck by Mail and consider their replicative effect.

- The letter refers to itself as a "*prayer*," and the King James translation of Proverbs 3:5-6 has been added.

It is difficult to assess the replicative effect of adding the Bible verses. The prayer does not appear on some subsequent Luck by Mail examples [1954, 1967]. However it did appear on a letter that received the Death20 innovations around 1959. Death20 captured the mainline by 1967, and the prayer, in many variations, universally prevailed until the Kiss and Love titles were introduced in 1983.

- The Win and Win-Lose testimonials both use the names of generals and the amount *$1,600.*

We previously discussed these testimonials and the names used. (see < Officer Wins. Elliot Wins and Loses). The "*$1,600*" is not present in other Luck by Mail examples, but we find significance in this amount later.

- "*This is not a joke and you will receive by mail.*" has been added near the end of the letter.

This is the debut of "*This is not a joke*," which soon became universal. We discussed in Section 3.4 (< Retention) how this may distinguish a chain letter from parodies, and may discourage a humorous attitude toward the letter. However, it seems unlikely that this device was the major reason for the conquest of the mainline by Luck by Mail. Instead, the final innovation, "*You will receive [luck] by mail"* may be the key feature. This too has persisted in the mainline. We now offer a hypothesis to explain the replicative function of "*$1,600*" and "*by mail*."

Follow-up Letters.
Many direct mail campaigns will follow-up a first solicitation by another. I have mentioned the massive "sweepstakes" mailings of American Family Publishers, Publishers Clearing House and other companies, which try to convince people (without exactly saying it) that they will win a huge cash prize if they respond (< Sweepstakes). I have received a follow-up letter stating that prize winners had asked about giving a gift to members of the "prize patrol." The letter explained that this was against company policy, but suggested that the purchase of a magazine subscription would be an appropriate gesture instead. Several years ago, after receiving a "you may already have won" letter, my mother received a follow-up that purported to be from an attorney who had obtained the public information of her being a "finalist." The "attorney" offered his services as a financial adviser, implying that it was likely my mother would soon be in need of his services.

Suppose that John Doe is operating a Send-a-Dime letter, say in 1950. Our sample of money chain letters contains over 30 from 1935, but only four from 1936 to 1974. The nearest date I have to 1950 is 1943. However many things happened in 1935, within weeks of the start of the craze in April. The initial Send-a-Dime restriction to five copies was immediately ignored by chain letter operators. No formal copy quota is present now, but money letters often suggest mailings of hundreds. Also in 1935, the ante was often raised from a dime to a dollar, five dollars and more. But probably there remained a niche for the dime chain in 1950. Based on the price of a first class postage stamp (three cents), a dime then would buy what a dollar does now. And dollar antes are common now on money chain letters.

So John Doe mails out a couple hundred money chain letters, perhaps similar to the original Send-a-Dime in that they ask for a dime and, for tradition sake, ask that five copies be sent out. He has aliases or relatives in all the slots for prior senders - no reason for strangers to get in on the money. John is disappointed that his previous response rate shows the letter is not quite propagating on its own, and wonders if he could increase response by a follow-up letter. What would work as a follow-up?

First, the follow-up letter itself should be a chain letter - otherwise John will only reach those on his mailing list, and the big money comes if his Send-a-Dime letter multiplies downline. But there is no point to sending another money chain letter so soon. Could using a luck chain letter as a follow-up increase response to the money chain letter?

With all exponential feedback processes, whether money chain letters, pyramid schemes or multilevel marketing, the most lucrative product to transmit downline is faith. Suppose someone has received the money chain letter, and then, fatefully, an anonymous letter arrives proclaiming he or she will soon receive a mysterious cash bonanza *by mail*. Surely this increases the temptation to try the Send-a-Dime letter. Even if the follow-up letter persuades just one additional person in ten, this could bring hundreds of extra responses. Those so persuaded, if they do not restart the letter like John did, will leave most of John's aliases on the list and mail five copies to people they know. And then, would not many of those on John's mailing list also comply with the luck chain letter they had received? If so, who would they send it to? Likely the same people they sent the money chain to, either naively, or realizing that as the luck letter motivated themselves, so too it may motivate others and thus increase their downline compliance to the money chain. Conveniently, both the luck and money letters asked for five copies, not surprising since the second was modeled after the first in 1935.

So a luck chain letter may be a good follow-up to a money chain letter. Are any innovations of the 1952 Halpert letter designed to better serve this purpose? First, Proverbs seems doubtful, though it may have helped by creating the impression that this was a letter no one had seen before. As for the new testimonials, both generals get $1,600. The maximum payoff for Send-a-Dime was $1,562.50, a figure present in the original Send-a-Dime text. Rounded off, as in memory, this easily becomes $1,600. Thus we should expect this number would encourage fantasies of hitting it big with Send-a-Dime. Finally, Luck by Mail states you will receive your good luck ($1,600) *by mail*, the very medium that delivers the Send-a-Dime bonanza. Thus the 1952 Halpert letter may have been a modification of a circulating chain letter, designed to follow-up Send-a-Dime.

If so, it could have had a high replication rate among money chain players, and its distribution was highly targeted to this group. The paths of prior money letters had left loosely connected transmission networks totaling perhaps 10 million people, some links going back to 1935. The Halpert letter, and subsequent variants, may have surged through these networks, also spinning off letters into the general public in sufficient quantity to kill off all its cousins by immunization.

Money letters setting higher antes probably followed transmission paths of Send-a-Dime in 1935. In North Dakota, Miss Elma Bergrud received a quilt patch exchange letter [1935-10] from the same person who had previously sent Send-a-Dime [1935-05]. In 1978, the $1000 ante pyramid scheme "Circle of Abundance"

followed the earlier $100 ante "Circle of Gold" (Marks 1978). It is easy to see why all this happened. For example, pyramid schemes are illegal and flow along social contacts in the early going. Thus the lower ante Circle of Gold established a tree of trusted prior participants that was available to the same "circle" for the higher ante next round. Of course this second tree was pruned of all those who lost money in the first round.

Symbiotic distribution occurs if for two replicators within a network of transmission, the receipt of one favors the replication of the other. Recall that quota five and quota twenty letters circulated simultaneously during 1959 - 1967 (< Table 2). Perhaps this was possible because of niche differentiation. Luck by Mail (quota five) may have been a symbiotic resident within the old money chain network, while Death20 was establishing itself among offices workers and professionals..

Design or Self-organization?
Apart from suggestive bits of text, there is no other direct evidence that luck chain letters ever followed money chain letters. If we had samples of all the chain letters received by a few people, then by examining postmarks the phenomenon might be confirmed. Even if this symbiotic distribution could be proved, that does not prove someone deliberately modified a luck chain letter to serve as a follow-up to a money letter. For if among the thousands of variations present in the chain letter population, some happen to appeal more to money chain letter players, then these will flow in the money chain transmission networks. Thus it is difficult to decide if some features are the product of calculating human design, or the product of selection from a vast pool of accidental or uncalculated variations.

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4.4 ORIGIN OF COPY QUOTA 24 (1959 - 1973)

The Lottery24 type.
We have previously discussed the Lottery24 type chain letter, its South American origin and its combination with the Death20 type in the early 1970's (< LD Type). As noted by Preston, the original copy quota of this type was twenty-four. From one of his examples: "*You must make twenty-four copies . . .*" [1975, B4], and many other examples retained twenty-four in the testimonials (Preston). But within a few years, variations predominated in North America which had eliminated this inconsistency in the copy quota, reading *twenty copies* instead. Mexican [1984, 1995] and Brazilian [1994] letters, and we suspect most indigenous South American chains, still retain copy quota twenty-four.

Missing deadline.
A curious fact about Lottery24 is that its early North American forms have no explicit deadline. Nine days seems to be the implied deadline, since that interval brings a better job to an office worker and death to an unbeliever. But there is no statement commanding the recipient to complete distribution of copies within a specified interval of time. On the Lottery24 block of contemporary DL letters you find: " . . . an office employee, received the letter and forgot *it had to leave his hands within 96 hours."* However the italicized deadline is an internal transfer from the Death20 block that first appeared around 1983 (a rider on Kiss). Except for Lottery24, all English language luck chains, and most foreign examples, have an explicit deadline.

Accidental origin hypothesis.
The origin of high copy quotas (20 and over) is puzzling. In North America, quota 5 letters dominated circulation from around 1929 on into the 1960's. But a quota 20 letter had appeared by 1959, and eventually captured mainline circulation near the end of the 1960's. The origin of the South American quota twenty-four is also a difficult question. Just one example of a Spanish or Portuguese letter from 1955-1979 would be a great help. Still we venture this hypothesis:

Copy quota 24 originated by accident when someone mistakenly used the "24" from a 24 hour deadline as the copy quota.

The following table will assist in presenting the details of this hypothesis in five steps below.

Table 5. Selected luck chain letter specifications.

No.	Location	Years	Quota	Deadline	Wait	Type	Link
1	U.S & U.K.	1922 - 1929	9 copies	24 hours	9 days	Good Luck	Brittain
2	France	1928	9 "	24 "	9 days	Good Luck	Deonna
3	U.S.	1929	5 "	24 "	4 days	Good Luck var.	Patterson
4	U.S.	1933 - 1945	5 "	24 "	9 & 4 days	Prosperity	Reherman
5	U.S.	1952 - 1967	5 "	24 "	4 days	Luck by Mail	Hansen
6	Venezuela	1930? - 1968?	5 "	24 ":	9 days	Hypothetical	
7	Venezuela	1965?	24 "	24 "	9 days	Hypothetical	
8	Venezuela	1965?	24 "	None	9 days	Hypothetical	
9	U.S.	1973	24 "	None	9 days	Lottery24 block	Preston
10	Brazil	1994	24 "	None	9 days	Unnamed	Savio
11	Mexico / U.S.	1980 - 1995	24 "	9 & 13 days	13 days	Unnamed	Montenyohl

(1) Letters with the a 24 hour deadline had circulated internationally since the 1920's, and were still very common in North America during the 1960's (Nos. 1 to 5 in the table). Though uncollected, very likely a luck chain letter circulated in South America that also had this 24 hour deadline (No. 6 in the table).
(2) At some time, perhaps around 1965, someone mistakenly used "24" for the copy quota on No. 6, producing the hypothetical letter No. 7 with quota 24 copies and deadline 24 hours.
(3) In this mutated letter the prior 24 hour deadline did not allow enough time to produce and distribute 24 copies. So new variations quickly appeared, one of which deleted the deadline producing letter No. 8.
(4) Hypothetical letter No. 8 was translated into English producing the Lottery24 block No. 9. Another branch of No. 8 was translated in Portuguese and was an ancestor to the Brazilian letter No. 10.
(5) Another variation of the mutated 24 copies in 24 hours (No. 7) extended the deadline by using the waiting period (9 days). This was an ancestor of the Mexican letter No. 11.

The successful change to quota 24 may have happened not long after Lottery24 accumulated its two office testimonials, Boss Wins Lottery and Lost Job - Better Job. This copying error had probably happened many times before, but with the availability of photocopying this time it was taken seriously.

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4.5 THE MEDIA CHAIN LETTER (1963 - 1998)

How an obsolete chain letter survived in obscurity for twenty years, became famous in 1990, and now pushes jokes on the Internet.

For over 65 years, humorous texts have circulated from office to office and person to person [1935]. One

such item, which we call "**Play Golf**," lists the illustrious positions of several tycoons at the height of their careers in 1923, the same year that golfer Gene Sarazen won the PGA tournament. Sarazen died in 1999 at age 97.

> **Are you stressed out? Read on!**
> **Do you know who, in 1923, was:**
>
> **1. President of the largest steel company?**
> **2. President of the largest gas company?**
> **3. President of the New York Stock Exchange?**
> **4. The greatest wheat speculator?**
> **5. President of the Bank of International Settlement?**
> **6. The great Bear of Wall Street?**
>
> **These men should be considered some of the world's most successful men, at least they found the secret of making money. Now more than 65 years later, do you know what became of these men?**
>
> **1. The president of the largest steel company, Schwab, died a pauper.**
> **2. The president of the largest gas company, Howard Hopson, is insane.**
> **3. The president of the Ne York Stock Exchange, Richard Whitney, was released from prison to die at home.**
> **4. The greatest wheat speculator, Arthur Cooper, died abroad, insolvent.**
> **5. The president of the Bank of International Settlement shot himself.**
> **6. The great Bear of Wall Street, Mr. C. Riverhore, committed suicide.**
>
> **That same year, 1923, the winner of the most important golf championship, Gene Sarasen, won the U.S. open and PGA Tournament. Today he is still playing and he's solvent.**
>
> **Conclusion: Stop worrying about business and play golf!!!!** [first part of 1988]

Pat Dolan gives a version of Play Golf with the earliest collection date I have seen [1966]. This states "now, 43 years later," implying it was composed in 1923 + 43 = 1966. A version that circulated in Europe states "now some 40 years later," implying a 1963 composition date [1972]. A version appearing on a menu [Cafe Pizzaria] collected in 1976 by William F. Hansen mentions it is "twenty-five years" later, implying a composition date of 1948. This version is believably very early since it lists the most tycoons (nine), claims they met in 1923 at the Edgewater Beach Hotel in Chicago, and is missing the superior and easily remembered punch line of the other versions.

The 1988 version given above has a short luck chain letter added to it, forming what we call "Play Golf Plus."

> **This letter originated in the Netherlands, and has been passed around the world at least 20 times, bringing good luck to everyone who passed it on. The one who breaks the chain will have bad luck. Do not keep this letter. Do not send money. Just have a wonderful, efficient secretary make four additional copies and send it to five of your friends to whom you wish good luck. You will see that something good happens to you four days from now if this chain is not broken. This is not a joke. You will receive good luck in four days.** [second part of 1988]

This added quota five chain letter, the "Golf Partner," is closely related to the type we have called Luck by Mail**.** Differences include the instruction to have a *secretary* make the copies, and the absence of the luck "*by mail"* stipulation. Our earliest Play Golf Plus is the 1972 example cited above. It had a list of 14 prior

senders' names at the bottom. By the early 1970's chain letters with a death threat and demanding 20 copies had completely replaced all independently circulating quota five luck chains (< Table 2). Thus the Golf Partner was probably added to the end of Play Golf in the 1960's or before. Both forms continued to circulate, probably Play Golf via the distribution network of photocopied office humor and Play Golf Plus more by mail.

In the 1970's and thereafter, the Golf Partner had become a living fossil, surviving only in the mutually beneficial relationship with Play Golf. Considering the class associations of golf, Play Golf and Play Golf Plus may have always appealed more to people who commanded the labor of a secretary. But no one could have predicted that in 1990 the chain letter was to go on its own again, and be mailed by such people that it would be called: "The Media chain letter" (Joseph Nocera, *New Republic*, Nov. 12, 1990), "The Chain Letter of the Rich and Famous" (Diedre Fanning, *New York Times*, Oct. 7, 1990), and "The VIP Chain Letter" (Charlie Clark, *Washington Post*, Nov. 16, 1991).

We have collected only three samples of the Media chain, all dating after October 1990. But we have eighteen accounts of it in newspapers and popular periodicals. Dates are rare in these sources, but the following events occurred, perhaps some simultaneously or in a slightly different order.

(1) Play Golf Plus started accumulating Hollywood celebrity names in the summer of 1989.
(2) The Play Golf part was deleted, leaving only the chain letter (the former "Golf Partner," now usually called the "Media chain letter").
(3) The list of names was deleted from the chain letter.
(4) A cover letter, usually on company stationery, was attached which contained: (a) the date sent, (b) the names of the five people the letter was sent to (and often the firm employing them), (c) a brief comment on the chain letter, and (d) the name and signature of the sender
(5) A copy of the received cover letter was also attached, making two cover letters.
(6) Recipients imitated this behavior and the chain accumulated large packets of successive prior cover letters.

According to C. Eugene Emery Jr. (*Skeptical Inquirer*, Fall 1991), Dr. Judy Kuriansky, later well known for her radio talk show on sex, may have been the first to include a prior cover letter as part of the package. As noted above, cover letters included the names of all five recipients. Previous forwarding of a list of one's recipients (ten) occurred with a solicitation for contributions to the 1950 Senate campaign of Howard Taft (R, Ohio). This reduces the number of duplicated mailings, and in the Taft solicitation one's list of recipients was used to prove that one had previously complied (when a second solicitation was received from a supervisor). A detailed file of the Taft letters reveals top-down pressure for the display of political obedience [1950]. But there was no money or politics involved with the Media chain letter and the mood was congenial.

Our three samples of the Media chain letter have 17, 21 and 34 cover letters, and there are reports of 50. The stacking orders new-to-old and old-to-new both appear. As you progress back in time the images of the letters become more and more corrupted from successive photocopying. The older letters often refer to illustrious prior senders whose letters have since become illegible and were removed from the stack. Occasionally you encounter a FAX or a photocopied business card. The average time from receipt to receipt was a little less than eight days.

One of our examples of the Media chain letter [1990] circulated in American real estate and investment firms, crossed over the Atlantic and returned. Many comments are musings on the utility of good luck. "*Some of us in the securities and real estate businesses forgot that it's better to be lucky than smart*." Another theme, common in published reports on the Media chain, is admission of fear of bad luck. "*A man will do anything out of fear*" (Newspaper editor). Most reporters accepted these comments at face value: "Media Barons Knuckle Under Superstition" (AP headline, Aug. 29, 1990). But some observers noted social reasons for the letter's success.

> ***1. Identification with celebrity***. "The real reason behind the letter's success, of course, is not fear, but the thrill of having written certification that, yes, indeed, you do belong to the inner circle" (*Esquire*, Dec. 1990). "It's more a kind of media status game, filled with unseemly overtones of see-how-famous-my-friends-are" (Joseph Nocera, *New Republic*, Nov. 12, 1990). If one receives the letter from a high status person, one can boast of this association by sending out the chain with the prior cover letter. The chain letter states "*send it to five of your friends*," and the forwarding letters prominently display the five recipients. Little status is gained by having sent the letter to someone of much higher status than oneself, and probably few such letters replicated.
>
> ***2. Exercise of wit.*** "These accompanying documents, most recipients admit, are what prompts them to play the game and write their own 'I can't believe I'm doing this' notes, as they pass the letter on" (Kathleen Hendrix, *Los Angeles Times*, Jan. 1991). Almost all of the comments on forwarding letters attempt humor, and the early self-deprecation theme is often carried forward. "*Tell me why I am doing this*" (Feb. 1991). "*The name for this is idiocy. But hopefully not many will know*" (May 1991). Growing lists of thematic humor also appear on graffiti, photocopied office humor and E-mail chains [e1996].

The early Media chain letters featured celebrity names from the entertainment and publishing industries. It migrated to other industries and other countries, but within any packet of letterheads you see a preference to distribute locally and along lines of professional contact, for example among Canadian legislators or London architects and surveyors. Often prestigious titles appear on the letterheads. "*With sponsors like this - pass it on*" (Canadian Govt. official, Feb. 1991). "*Think of it this way, there could be a good new business contact amongst this lot*" (UK Architect, March 1991). The display of association with high status individuals was the primary motive for replicating the Media chain letter. Confessions of superstitious motivation functioned as a plausible cover for this display, disapproval of superstition being mitigated by self deprecating humor. Though the "Golf Partner" chain letter had separated from its "Play Golf" symbiont, it became a mere instructional appendage to its attendant forwarding letters, which certainly were the key to replication of the package.

Status motives were present with other chain letters. Many copies of the Good Luck chain contained long lists of "X to Y" at the top, so that if you are Y, any downline recipient can conclude that X knows you [1922]. The half serious 1979 Brill chain [1979] had no real threat but many entertainment industry stars in its list of prior senders. Perhaps many of these celebrities never actually sent out the Brill letter. But forwarding letters with the Media chain were on corporate stationery and signed, thus providing a more convincing venue for identification with celebrity.

The Media chain letter continued to progress through hierarchies for several years. A note in the *British Medical Journal* (March 25, 1995) complained of its "wad of memos." Infected organizations included the Ministry of Defence, the Metropolitan Police and the National Health Service. Like chickenpox, the Media chain letter is usually a one-time infection, leaving a trail of immunity. As the paper form of this chain letter works out its extinction, the text has crossed over into the vast new territory of the Internet.

Though we have not located an example, probably sometime in the early 1990's Play Golf Plus was digitized and transmitted via E-mail. Many photocopied office humor items have also crossed over to the Internet. A July 1993 chain E-mail consists of a series of ironic questions, later versions of which are titled "*Why ask why?*" By mid 1995 this item had been pasted on the beginning of Play Golf Plus [e1995]. Since then the "Media" chain letter, with continuing modifications, has been attached to other email jokes, including "The Gift" [e1995-12], and "The Frog":

> Subject: Only Because It Is funny
> Date: Thu, 13 Nov 1997 09:13:39 -0500

READ THIS MESSAGE AND PASS IT ON....
A man takes the day off work and decides to go out golfing. He is on the second hole when he notices a frog sitting next to the green. He thinks nothing of it and is about to shoot when he hears, "Ribbit. Nine Iron" The man looks around and doesn't see anyone. "Ribbit. Nine Iron." He looks at the frog and decides to prove the frog wrong, puts his other club away, and grabs a nine iron. Boom! he hits it ten inches from the cup. He is shocked. He says to the frog, "Wow that's amazing. You must be a lucky frog, eh?" The frog reply's "Ribbit. Lucky frog." The man decides to take the frog with him to the next hole. "What do you think frog?" the man asks. "Ribbit. Three wood." The guy takes out a three wood and Boom! Hole in one. The man is befuddled and doesn't know what to say. By the end of the day, the man golfed the best game of golf in his life and asks the frog, "OK where to next?" The frog reply, "Ribbit. Las Vegas." They go to Las Vegas and the guy says, "OK frog, now what?" The frog says, "Ribbit Roulette." Upon approaching the roulette table, the man asks," What do you think I should bet?" The frog replies, "Ribbit. $3000, black 6." Now, this is a million-to-one shot to win, but after the golf game, the Man figures what the heck. Boom! Tons of cash comes sliding back across the table. The man takes his winnings and buys the best room in the hotel. He sits the frog down and says, "Frog, I don't know how to repay you. You've won me all this money and I am forever grateful." The frog replies, "Ribbit, Kiss Me." He figures why not, since after all the frog did for him he deserves it. With a kiss, the frog turns into a gorgeous 15-year-old girl.

"And that, your honor, is how the girl ended up in my room."

The origination of this letter is unknown, but it brings good luck to everyone who passes it on. The one who breaks the chain will have bad luck. Do not keep this letter. Do not send money. Just forward it to five of your friends to whom you wish good luck. You will see that something good happens to you four days from now if the chain is not broken. You will receive good luck in four days. [e1997]

Incidentally, Michael J. Preston emailed me a later version of "The Frog" in which the defendant's final statement to the court is: "*And that, your honor, is how the girl ended up in my room, so help me God or my name is not William Jefferson Clinton*" [e1999].

Around 1967 the predominant chain letter was too long, too threatening, and demanded too many copies (twenty) to be added successfully to an office humor joke about golf. Instead someone added the text of a brief quota five chain letter, a type that was soon to become extinct as an independent chain letter. Surely no one could have anticipated the career of this letter.

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4.6 THE "IT WORKS" BLITZ (1979 - 1982)

The rise of the It Works postscript. *Table 6 - Occurrences of D, L, LD and DL variations*.
Why did "It Works" work? *Associated features*.

The rise of the "It Works" postscript.
In the mid 1970's four structural types of luck chain letters circulated in English speaking countries:

(1) Death20: A letter purporting to come from the Netherlands that contained a death threat and asked for 20 copies.
(2) Lottery24: Presumably, an English translation of a letter purporting to come from Venezuela that contained a testimonial of a lottery winner and asked for 24 copies. We have yet to collect such a letter.

(3) Lottery-Death (LD): The Lottery24 and Death20 types combined on one page in that order.
(4) Death-Lottery (DL): The Death20 and Lottery24 types combined on one page in that order.

After around 1976 only the DL type was circulating. And from around 1980 to the present, all these DL letters, about two billion, are the descendants of a **single** DL letter that had appeared a year or two earlier.

To document this sudden population change we tabulate the four types above, sub-classifying the DL letters into five mutually exclusive and successive variations. Letters with uncertain circulation dates are not used.

Table 6. Occurrences of D, L, LD, and DL variations.

D: All Death20 type letters
L: All Lottery24 type letters (none collected so far).
LD: All Lottery-Death type letters
DL-n: Death-Lottery (DL) letters with a list of **names**.
DL-0: DL letters with **no list of names**, nor any of the following three postscripts.
DL-m: DL letters concluding with "*Do not send money*" or variants.
DL-i: DL letters concluding with "*Do not send money. Please do not ignore this*" or variants (none collected so far).
DL-w: DL letters concluding with "*Do not send money. Please do not ignore this. It works"* or variants.

Years	D	L	LD	DL-n	DL-0	DL-m	DL-i	DL-w
1959 - 1971	5	0	0	0	0	0	0	0
1972 - 1973	1	0	0	1	0	0	0	0
1974 - 1975	1	0	13	3	0	0	0	0
1976 - 1977	0	0	0	0	2	0	0	0
1978 - 1979	0	0	0	0	2	1	0	3
1980 - 1981	0	0	0	0	0	0	0	7
1982 - 1983	0	0	0	0	0	0(a)	0	13
1984 - 2003	0	0	0	0	0	0	0 (b)	122

(a) One letter apparently had "Please do not ignore this - It works" deleted in its lineage [1982-01]. It is not tabulated.
(b) A few later letters have had the final words "It works" deleted [1984-08]. These are not tabulated.

We name the complete postscript "***Do not send money. Please do not ignore this. It works***", and its variations, by the concluding phrase "***It Works.***" The earliest It Works postscript in the archive was mailed anonymously in May 1979 to an Oxnard, California address [text]. Likely it had appeared a few months before. Measured by the number of participants, the It Works founder is the most copied document in human history, if we consider its varying descendants as the same "document" (and do not so consider ancestors of It Works). The It Works descent group monopolized mainline circulation up until the millennial collapse of paper luck chain letters (> All fall down). Versions were translated into French [1995], Spanish [1996], Polish [1992], Italian and likely many other languages. A highly modified DL letter, amusingly adapted to an Indian audience, has been collected in England [1996]. This probably also derives from the Its Work founder, though all that remains of the full postscript is "*Please don't neglect this.*" It Works descendants also invaded the Internet, but in this medium the postscript was soon deleted [e1994].

The progressive development of the It Works founder in North America proves that this is where it was launched. It is extremely unlikely that successive translations could have produced such examples.

Why did "It Works" Work?
The tabulated data suggest that each of three successive innovations (DL-0, DL-m, and DL-i & DL-w)

increased propagation.

DL-0: The internal senders list in DL letters was an awkward liability [1975], especially since photocopying was rapidly becoming the dominant method of replication. When a letter must be typed or hand copied, it is not that much additional bother to update a list of names. But if one is photocopying, instructions to revise the letter in any way may prompt discard. Further, asking for one's name is not consistent with anonymous distribution, which has since completely prevailed. Deletion of the internal list also gave the resulting text the appearance of a single chain letter, making the contradictions between the D and L blocks less likely to be observed.

DL-m: Then adding a postscript repeating the injunction against sending money provided a highly visible flag that the letter was not a solicitation for money.

DL-i & DL-w: The failure to collect a "DL-i" letter suggests that "*Please do not ignore this"* and "*It works*" first appeared concurrently. Together they constitute a polite affirmation of the power of the letter, in contrast to the previous bossy conclusion: "*For no reason whatsoever should this chain be broken.*" This was retained, but now was much less prominent. A money chain letter circulating at the time contained "*Do it . . . it really does work*" [1978]. Perhaps It Works luck chain letters followed this money chain (> Section 4.3), each increasing the other's circulation. "*It does work*" is a common variant of the luck chain letter postscript, and is the form on our oldest example [1979-05]. Many radio and television advertisements use "It Works."

Associated features.
Recall (< Section 3.3) that a "feature" is very unlikely to be created more than once. Recall also the terms we introduced to relate one feature to another: unlinked, pre-linked, co-linked, post-linked and transfer-linked (< Table 3). As Table 6 reveals, by 1984 all circulating mainline luck chain letters were the DL-w type (Death-Lottery with It Works), our group under consideration here (the "in-group"). In cladistic analysis, one is usually concerned with post-linked features (shared derived characters, or synapomorphies) which determine taxa within the in-group. Here, instead, we will list pre-linked and co-linked features (primitive characters, or plesiomorphies) which, in addition, differ from those present on most of the DL letters prior to the in-group launching. We call these "**associated features**." For a standard of contrast to these associated features we use the early DL-n letter [1974-10]. For the It Works founder we use [1979-05]. Of course the most prominent of all variations pre-linked to It Works were (i) the deletion of the internal list of senders (which probably happened many times), and (ii) the single postscript "*Do not send money*" and its variants. We have not listed these.

(1) DL-n: You will receive good luck within 4 days of receiving this letter.
It Works: You will receive good luck within four days of receiving this letter ***provided in turn you send it back out***.
Note: This "provided" clause is co-linked to It Works on [1979-05].

(2) DL-n: Send ***twenty*** copies of this letter to people you think need good luck.
It Works: Send copies of this letter to people you think need good luck.
Note: This deletion is pre-linked to It Works, appearing on the DL-0 letter [1978-04].

(3) DL-n: Please do not send money.
It Works: Do not send money**, *for fate has no price on it***.
Note: Co-linked on [1979-05]. "*Fate* / *faith*" is not diagnostic of phylogeny.

(4) DL-n: It must leave (you) within 96 hours.
It Works: It must leave ***your hands*** within 96 hours.
Note: "Your hands" is pre-linked to It Works on the DL-m letter [1979-01].

(5) DL-n: This chain comes from Venezuela, was written by ***St.*** Aptine de Cade . . .
It Works: This chain comes from Venezuela and was written by ***Saul*** Anthony De Cadif...
Note: "*Sol*" is pre-linked to It Works, appearing on the DL-m letter [1979-01].

(6) DL-n: . . . a missionary from South America. Since the chain must make a tour . . .
It Works: . . . a missionary from South America. ***I, myself, now forward it to you.*** Since the chain must make a tour . . ..
Note: Co-linked on [1979-05].

Having listed the features associated with the advent of the full It Works postscript, we can now argue that the DL-m letter [1982-01] has had "*Please don't ignore this - It works*" deleted in its lineage. This seems apparent since all of the above associated features appear on this letter, except for (4) "*your hands.*" And in this case the entire containing sentence, "*Do not keep this letter. . . . It must leave your hands within 96 hours"* has been deleted. Thus it is reasonable to assume that the It Works founder was present in the lineage of 1982-01. Supporting evidence comes from Table 6 above, where, if otherwise, 1982-01 would be a late and last holdout against the It Works blitz.

Alternatively, the lineage of 1982-01 may never have had the full postscript. There could have been a common ancestor of 1982-01 and the It Works founder which concluded with "*Remember no money*" [like 1979-01] and also bore all the above associated features. If this were the case, all these six features would be pre-linked to It Works. Any one of these could also become pre-linked if a letter is collected that bears it and whose lineage is free from It Works. Quite possibly this may happen, as the co-linkage of two features is always a tentative and suspect status. We see from this example that despite our large dated sample of letters, varying hypotheses of lineage may not be easily resolved

In any case, the universal appearance of all these six features in the It Works descent group is convincing evidence that the full postscript was added to just a single letter, and that all subsequent letters bearing it are descendants of that letter. For example, a late DL letter collected in North America [1998-07], has all the associated features except the last, "*I myself now forward it to you."* However, as previously noted, this feature disappeared from circulation around 1984 (< Example 1).

In assessing propagative effect, one might argue that we have succumbed to a bias that overemphasizes beginnings and ends (titles and postscripts), thus missing more critical features within the body of a letter. However, recipients are subject to the same bias. Still, let us examine if associated feature (1) above, "*provided in turn you send it back out,"* is the main reason for the success of the "It Works" letters. It appears early in the letter, and fundamentally changes the operating superstition about the letter from a lucky talisman to a fateful obligation (see Copy later versus Copy first). Perhaps the *provided* clause did have some positive effect on propagation, since Copy first language appears to be gaining in recent decades. But we have one, and only one, letter on which it appears without the It Works postscript, the puzzling [1982-01]. Whatever the genealogy of this letter, it did not replicate sufficiently to show up again in our sample, something we should expect if the "*provided*" clause were highly effective by itself. However, the potency of the full postscript is itself challenged by the rapid propagation of a variation that deleted the last two words ("*It works"*). This deletion, co-linked to a transfer of the Kiss title, appears in the "KCL" variation of the 1990's (> Section 4.7, item 7). But the KCL letters begin with the Kiss title and conclude with the Love title, thus combining the appeal of both. This may more than make up for the loss of "*It works.*"

It could be claimed that the de-sanctification of Anthony, change (5) in our list, had a negative effect. This was likely of accidental origin. As noted, "***Sol***" appears on a letter in the It Works lineage, probably as a miscopy of "*St.*" from a degenerate photocopy. A subsequent letter in the lineage probably miscorrected this to "***Saul***" and so it has remained, a rider on the It Works blitz. On the other hand, "*Saul"* could be slightly positive, since visible Catholicism seems to be disfavored on North American chain letters. Our only record of re-sanctification of the Venezuelan author appears in a minor clade from the mid 1990's that featured a

Catholic title (> JKLC).

The It Works funneling event eliminated the D, L and LD type letters from English language circulation (or possibly these succumbed to DL-0 or DL-m). Also eliminated were those DL letters that retained a list of names (DL-n), ending a tradition that had dominated luck chains since the 1920's. This mass extinction happened remarkably fast; after 1980 there are none of these doomed types and features in the archive. Finally, It Works also killed off its potent elders, DL-0 (no list) and DL-m (no money) in a year or two.

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4.7 THE MAINLINE SINCE 1980

Introduction.
By 1981 almost all luck chain letters circulating in North America were the descendants of a single founder that had appeared a couple years before bearing the It Works postscript. In the next two years new titles appeared which rapidly dominated circulation, and later in the decade a very effective new testimonial appeared. If we assign the following names to these and other components, our allegorical subsection names (Trust expires, Belief fizzles, Kiss and Love divide the territory, Kiss gets Wife's Money, Love gets a car, Kiss jumps on top, All fall down) describe the major developments in mainline letters since 1980.

> **(1) Trust:** "*Trust in the Lord with all your heart and He will acknowledge and He will light the way.*" This is the corrupted form of Proverbs 3:5-6 that appeared as a leading "prayer" on the hyper-competitive It Works letter in 1979.
>
> **(2) Belief:** "*And all things whatever ye shall ask in prayer, believing, ye shall receive.*" This new title is the King James version of Matthew 21:22.
>
> **(3) Kiss**: The title "*Kiss someone you love when you get this letter and make magic*."
>
> **(4) Love**: "*With love all things are possible*." This title is probably a substitution in Mark 10:27: "With God all things are possible."
>
> **(5) Wife's Money**: The following modification (in italics) of the Death and Money testimonial: "While in the Philippines, Gene Welch lost his wife six days after receiving this letter. He failed to circulate the letter. However, before her death, *she had won $50,000. in a lottery. The money was transferred to him four days after he decided to mail out this letter*."
>
> **(6) Car**: The testimonial: "*In 1987 the letter received by a young woman in California was faded and barely readable. She promised herself to retype the letter and send it on, but put it aside to do later. She was plagued with various problems, including expensive car repairs. The letter did not leave her hands in 96 hours. She finally retyped the letter as promised and got a new car.*"

The following table gives the frequency of these components, including transfers of the Kiss title to a Love-Car letter.

Table 7. Occurrences of Trust, Belief, Kiss, Wife's Money, Love and Car.

Years	Trust	Belief	Kiss	Love	Kiss - Wife's Money	Love - Car	Kiss transfers to Love - Car
1972-74	1	0	0	0	0	0	0
1975-77	5	0	0	0	0	0	0
1978-80	9	0	0	0	0	0	0
1981-83	6	4	4(a)	1	0	0	0
1984-86	0	0	4	15	2	0	0
1987-89	0	0	1	1	10	2	0
1990-92	0	0	0	1	4	20	2 (b)
1993-95	0	0	1?	0	5	10	7 (c)
1996-98	0	0	0	0	2	11	15 (d)

(a) The earliest three (1983) do not have a title, but have other Kiss features, e.g. [1983-02].
(b) Date estimated. Kiss and Wife's Money transferred. Love deleted.
(c) Kiss-Car-Love 3, Kiss-Love-Car 3, Jude-Kiss-Love-Car 1
(d) Kiss-Car-Love 2, Kiss-Love-Car 7, Jude-Kiss-Love-Car 4, Love-Kiss-Car 1, Kiss-Car 1

We now discuss these changes in frequency, following the allegorical subtitles.

Trust expires.
Proverbs 3:5-6 had appeared near the top of most mainline letters since 1952 in countless corrupted forms until the It Works blitz in 1979 fixed its form as "Trust" given above. This header probably had positive replicative effect at first, but by the early 1980's it seems to have become a liability. Perhaps quick recognition of a letter as the nuisance of the prior decade was a factor.

Belief fizzles.
Someone replaced Trust with "Belief" in 1981, placing this New Testament verse above the body of the letter. On our earliest version [1981] the verse is correctly identified as Matthew 21:22. "Belief" was immediately successful at the expense of Trust, but within two years its circulation seems to have ended. This was probably due to the appeal of two new secular titles we discuss next. The omission of the Unbeliever's Death was an early post-linked rider, and this may have also contributed to the quick demise of the Belief title.

Kiss and Love divide the territory.
Our earliest Kiss title is from October 1983 [Make Magic, 1983-10]. However there are three letters from earlier that year that have no title yet bear the same features of the 1983-10 Kiss letter. These titleless letters could have derived from an initial Kiss letter that had its title cut off, or the Kiss title could have been added to a titleless letter. We will take the titleless [1983-04] as the standard for the Kiss founder, and for convenience presume it had a Kiss title. The Love title first appears on a letter sent from Sweden to England [1983-06], which we take as the standard for Love. The following list compares text in these standard Kiss and Love letters to a prior It Works letter with the Trust title [1980].

(1) Trust: This ***prayer*** has been sent to you for good luck.
Kiss: This ***letter / paper*** has been sent to you for good luck.
Love: (same as Kiss)

Note: "*Letter*" is co-linked only to the standard examples for Kiss and Love ([1983-04] and [1983-06]). All subsequent examples use "*paper*."

(2) Trust: The original copy is from the ***Netherlands***.
Kiss: The original copy is in ***New England***.
Love: (same as Kiss)
Note: Co-linked.

(3) Trust: You will receive good luck within four days of receiving this letter provided you in turn send it ***back out***.
Kiss: (same as Trust)
Love: You will receive good luck within four days of receiving this letter, providing you, in turn, send it ***on***.
Note: "*Send it back out*" retained on Kiss. "*Send it on*" co-linked to Love.

(4) Trust: While in the Philippines, ***General*** Welch lost life six days after he received this letter.
Kiss: While in the Philippines, ***Gene*** Welch lost wife six days after receiving the letter.
Love: (same as Kiss)
Note: Co-linked. "Gene" varies afterward but is not restored to "General" or "Gen."

(5) Trust: General Welch lost his ***life*** six days after he received this letter.
Kiss: Gene Welch lost his ***wife*** six days after receiving the letter.
Love: (same as Kiss)
Note: Pre-linked on [1975]. "Life" was never restored after Kiss and Love appeared..

(6) Trust: . . . send it to your friends, ***parents***, or associates.
Kiss: . . . send them to friends and associates.
Love: (same as Kiss)
Note: Co-linked deletion.

(7) Trust: ***Take*** note of the following:
Kiss: ***Do*** note the following:
Love: (same as Kiss)
Note: Co-linked.

(8) Trust: Carlo Raditt . . . forgot it and a few days later, lost his job.
Kiss: Carla Dadditt . . . forgot it ***had to leave his hands within 96 hours.*** He lost his job.
Love: (very close to Kiss)
Note: Co-linked.

This list strikingly illustrates the closeness of the early Kiss and Love titled letters. Of all known variations from the Trust standard, only number (3) reveals a distinction between Kiss and Love, with Love reading "send it *on*" rather than "send it *back out*" as Kiss, the titleless and older letters read. Kiss and Love also match on three variations we did not list (two small omissions and "*copy*" for "*chain*" in "*Since the **chain** must make a tour of the world . . .*"). Both Kiss and Love modify "*Please send 20 copies and see what happens **to you** on the fourth day*" to exactly "*Please send 20 copies **of the letter** and see what happens in four days*." This closeness suggests that the Love title replaced the Kiss title on a letter that was at most a few retypes downline from the launching of Kiss. Perhaps a recipient of Kiss was inspired to produce the second new title after noticing that the long running Trust "prayer" had been successfully replaced. Or perhaps the Kiss standard [1983-04] was always untitled, and Love was added to this titleless letter at around the same time as Kiss was. Possibly both titles had the same author, but then what explains (3) "send it *on*"? In any case, a single letter (the **Kiss-Love founder**) was a near ancestor of both Kiss and Love, and hence an ancestor of over a billion letters that subsequently bore these titles.

The above features, though often corrupted, are identifiable on every mainline letter after 1984. For example, on [1998-07] "*Gene* Welch" has been corrupted to "*George* Welch," but we never again see "*General*" or "*Gen.*" as was present in the 1970's. Even minor changes such as "*copy*" for "*chain*" have persisted. This is a remarkable demonstration of 15 years of faithful copying, and overwhelming proof that the progeny of the Kiss and Love founders completely captured the mainline. Yet at the same time, the 1998-07 letter has its own features that will mark all letters copied from it (for example, "the original is in *England*" and "*George* Welch").

Concurrence can never be rigorously deduced just from texts. But the features associated with Kiss-Love are notable both for their number and for the prevalence of co-linked (rather than pre-linked) features. This suggests cautious rewriting by the Kiss-Love innovator. In item (1) above, changing "*prayer*" was needed when the Trust "prayer" was dropped. The earliest examples use "*letter*," but immediately after "*paper*" prevailed. This history is difficult to explain. Possibly instead of being concurrent with the titles, "*letter*" was post-linked, along with other substitutions, including "paper," by other correctors. "*New England*" for "Netherlands" could have been concurrent with Kiss, and may be the actual place of the innovation. But "*New England*" could also be a pre-linked corruption of "*Netherlands*." Or perhaps "*New England*" was concurrently chosen by the Kiss innovator because of this similarity to "*Netherlands*," thus ambiguously declaring a new chain letter and accommodating misidentification as the old one. Note that item (8), "*it had to leave his hands within 96 hours*," is an internal transfer from the leading Death20 block to the Lost Job - Better Job testimonial of the Lottery24 block. This too could be the concurrent work of the Kiss innovator, and was imitated by the author of the Car testimonial. Or perhaps the same person launched Kiss, Love and Car!

Why were the Kiss and Love titles so successful? Were some of the above linked features critical for this success? Consider the **participant age** of a social activity - for chain letters the average age of those who are replicating it. Participant age may regress (marijuana smoking), remain fixed (school traditions), or advance with time (canasta), perhaps even keep pace with calendar time (class reunions). There is a postcard exchange letter whose participant age has regressed. You be the judge: here is some text from an example received by an eleven year old in Clarkston, WA:

> It was started in 1986 if it goes through 1995 it will be in the Guiness Book of World Records (your name will be included). It has never been broken, so please don't spoil it for everyone . . . If you were to break the chain we would have to wait another nine years to be in record book. [1996]

For luck chains, the succession of types suggests that the participant age of an established type advances. Co-linked variation (6) above reveals that "*parents*" was dropped as a distribution target. Sending the Trust version to parents may itself have statistically advanced its participant age, especially since many senders distribute just one or a few copies. For this and reasons that follow, apparently the new titles gained the loyalty of youth, while the core network of Trust letters aged.

Kiss may have especially appealed to young people and been used for flirting. The sender may hope that a recipient will be emboldened to act on the suggestion, the sender getting the kiss. Love may have benefited by appearing to be a Bible verse to those somewhat familiar with the New Testament, yet appearing completely secular to others. Men may have preferred Kiss, women Love; or younger people Kiss, older Love.

Kiss gets Wife's Money.

Item (5) in the above list reveals that the "lost his *wife*" version of the Philippine Death and Money testimonial was pre-linked on both the Kiss and Love titled letters. As a result it rode these titles to universality in the mainline. Shortly after *wife* became universal, the "Wife's Money" modification of Death and Money appeared on a Kiss titled letter:

> While in the Philippines, Cora Welch lost his wife six days after receiving this letter. He failed to circulate the letter, however, before her death, *she had won $50,000. in a lottery. The money was transferred to him four days after he decided to mail out this letter*. [1986]

In this version not only is it the wife who loses her life, but it is she who first got the money. The final sentence reflects a reviser's puzzlement over the original Copy Later frame, in which Mr. Welch gets the money after merely receiving the talismanic letter. To force a Copy First frame, now it seems the money is at first inaccessible to Mr. Welch, until finally he complies and only after that the money is transferred to him. So in this **Wife's Money** version, Mr. Welch gets nothing but misery until he mailed out the letter, though some readers who identify with Mr. Welch may count his good luck as twofold.

Remarkably, this new version of the Kiss letter rapidly captured the Kiss niche within a couple years, as seen in the above table (< Occurrences). We are not counting as "Kiss letters" those on which the Kiss title was transferred (in the "KCL" transfer the Wife's Money feature was also transferred, on others it was not). From 1988 to 1999 there are 18 examples of Kiss & Wife's Money, and only one dubious example of Kiss without it [the rewritten 1995]. I detect no significant new feature on these letters other than the "Wife's Money" modification. Why did this innovation prove to be so successful in the competition for senders? Whatever the answer (other than "genetic drift"), we are likely within the realm of the One-in-a-Hundred Rule. The suggestion that this reveals the secret wish that one's wife were dead does not work, for then it would seem a husband would hold the letter until after his wife died, which is negative for propagation. Perhaps the conversion to Copy First made the testimonial more understandable, especially to the younger readers that may have disproportionally circulated the Kiss title. More likely, this mentions a lottery winner in the Death20 block, well before the "Boss Wins Lottery" testimonial in the Lottery24 block. Of a hundred people, say two would fully comply to a chain letter if they read in it that it brought luck in a lottery. And say of these two people, one reads only the first half of the letter. Receiving the Wife's Money innovation, that one person will now encounter a lottery claim, providing the one-in-a-hundred fully compliant new booster.

The origin of "Wife's Money" may depend on a simple mistake. It would be very easy to shift the gender of the last pronoun from "*he*" to "***she***" in Death and Money:

> While in the Philippines, Gene Welch lost his wife six days after receiving this letter. He failed to circulate the letter. However, before her death, ***she*** had won $750,000. in a lottery. [hypothetical]

This weakens the power of the testimonial since it is not clear if Mr. Welch ever got the money himself, and both good and bad luck are now going to his wife, yet he broke the chain. So this hypothetical version invites revision, such as adding "*The money was transferred to him four days after he decided to mail out this letter*." The fact that our earliest example of Wife's Money uses "Cora Welch" instead of "Gene Welch" could only add to the gender confusion. In any case, this illustrates how a simple change, possibly a copying mistake, could provoke a lengthy addition.

Love gets a Car.

The Car testimonial is usually self-dated 1987, and first appears in our sample in July 1988, appended near the end of a Love titled letter [1988]. Only one Love titled letter thereafter fails to possess it! Despite this quick conquest of the Love subtype, the Kiss titled letters persisted without Car. This suggests that these two titles had a different audience, perhaps differing by motive, age or gender as speculated above. If Kiss and Love had the same motivational niche, Love & Car would have swamped Kiss just like it did Love. We discussed the replicative advantages of Car in Section 3.6 (< Mainline Testimonials). The Car testimonial has the following associated features, using [1983-06] for the "Love Founder" and [1989-03] as the standard for the "Love-Car" innovation.

(1) Love Founder: This is no joke. You will receive ***it*** in the mail.

Love-Car: This is no joke. You will receive ***good luck*** in the mail.
Note: "*Good luck*" is pre-linked (to Car) on [1987-06].

(2) Love Founder: You will receive it in the mail. Send copies to people you think need good luck.
Love-Car: You will receive good luck in the mail. ***Send no money***. Send copies to people you think need good luck.
Note: "*Send no money*" is pre-linked on [1987-06]. Discussed previously (< Example 3).

(3) Love Founder: While in the Philippines Gene Welch lost his wife ***six*** days after receiving the letter.
Love-Car, 1989: While in the Philippines, Gene Welch lost his wife ***51*** days after receiving the letter.
Note: Post-linked to Car on [1989]. Discussed previously (< Example 4).

(4) Love Founder: Since a copy must ***make a*** tour of the world you must make twenty copies and . . .
Love-Car: Since the copy must tour the world, you must make 20 copies, and . . .
Note: Pre-linked on [1987-06].

(5) Love Founder: Please don't ignore this. It works.
Love-Car: Do not ignore this. ***St. Jude***. It works.
Note: Pre-linked on [1987-06]. "St. Jude" is also added to top or at the extreme bottom of some letters.

Feature (2) above, the early "*send no money*," is probably positive for propagation since it doubles and advances slightly this universal prohibition. It may have originated accidentally in re-typing, first as an exact duplication of "*Do not send money . . .*", then edited to "*Send no money*" to lessen redundancy. Features (1) and (4) are surely neutral. It is difficult to assess the effect on propagation of features (3) and (5). These are briefly discussed elsewhere (< 51 days), (> Jude). The absence of any co-linked features in our list reveals that the person who first added the Car testimonial to a letter made no other modifications.

Kiss jumps on top.
In the 1990's the Kiss letters still enticed senders despite the proliferation of the Love-Car combination. Surely Kiss circulation would have increased if the Car testimonial had been transferred to a Kiss letter. There is no example of this happening. However, more potently, the Kiss title was transferred to a Love-Car letter. This happened at least three or four times. These transfer events are designated below as (i) KCL, (ii) KLC, (iii) JKLC and (iv) LKC.

(i) The KCL transfer (5 + 2? examples)
In two undated examples of this Kiss transfer the Love title was deleted [1991a, 1991b]. In later examples the Love title appears at the very bottom of the letter [1993-04]. The name "KCL" refers to the order of the Kiss, Car and Love features on these later letters. A detailed analysis is necessary to verify what was transferred, and to what base letter. Here is a list of some features linked to the KCL innovation, using the most common form of Love-Car [1989] and a typical Kiss letter [1986-05] as standards of comparison to KCL [1993-04].

(1) Love-Car: With Love all things are possible.
Kiss: Kiss someone you love when you get this letter and make magic!
KCL: Same as Kiss.

(2) Love-Car: You will receive Good Luck within four days of receiving this letter provided you, in turn, send it ***on***.
Kiss: You will receive good luck within four days of receiving this letter, provided you send it ***back out***.
KCL: Same as Love-Car.

(3) Love-Car: You will receive Good Luck by mail. ***Send no money***. Send copies to people you think need good luck.

Kiss: You will receive it in the mail. Send copies to people you think need good luck.
KCL: Same as Love-Car (using [1994] for KCL).
Note: "*Send no money*" probably deleted on the KCL standard [1993-04].

(4) Love-Car (most): While in the Philippines, Gene Welch lost his wife 51 days after receiving the letter.
Kiss: While in the Philippines, Cora Welch lost his wife six days after receiving this letter.
KCL: Same as Love-Car.

(5) Love-Car: However, before she died, he received $7,755,000.
Kiss (most): . . . however, before her death, she had won $50,000 in a lottery. The money was transferred to him four days after he decided to mail out this letter.
KCL: Very close to Kiss.

(6) Love-Car: Car testimonial present
Kiss: Car testimonial absent
KCL: Same as Love-Car.

(7) Love-Car: Remember, send no money. Do not ignore this. St. Jude. *It works!*
Kiss: Same as Love-Car but without "St. Jude."
KCL: Remember: send no money. Do not ignore this. *With Love all things are possible*.
Note: The deletion of the phrase "It works" is co-linked to the original KCL Kiss transfer. The addition of "With Love all things are possible" as a postscript is post-linked to this transfer. "St. Jude" is not reliably diagnostic of lineage.

The simplest explanation for the mix of features on these letters is that two transfers were made from a Kiss donor onto a Love-Car letter: (1) the Kiss title, and (5) the "Wife's Money" modification of the Death and Money testimonial. Note that such incidental features of Love-Car as (2) "send it *on,*" the duplicated (3) "*send no money,*" and (4) "*51* days after" are present on KCL. This argues that Love-Car was the base letter to be copied since these features would not likely be chosen to transfer. Item (7) records the movement of the Love title to the bottom of the composite letter. The deletion of the "It Works" on KCL is probably negative for replication, but is outweighed by having both titles present.

For two chain letters that are closely related but have varying features, a composite can be formed as follows. With the letters side by side, consider the components in order. For two homologous (related) components place the one preferred on the composite letter. If a component on one letter does not have a match (homologue) on the other, place this component on the composite. This process is somewhat analogous to genetic sexual reproduction. If, around 1991, we started with the most common Love-Car letter and a typical Kiss letter, this would have produced the KCL letter, provided the Kiss title was preferred over Love (which is then dropped), and the default choice when homologous components were about the same was the Love-Car version. The format of an early (Love deleted) KCL letter [1991b] has ten paragraphs mostly corresponding to components. This may be a remnant of this process.

One additional letter with the Kiss-Car-Love order [1997] is not derived from the same transfer event as the above letters. It bears the pre-title "Magic." A later Kiss & Car combination [1997] may also be a separate transfer.

(ii) The KLC transfer (10 examples).
Though the KCL transfer appeared earlier, the "KLC" transfer propagated more successfully. The earliest version of this letter [1994-12] was provided by the American Folklife Center, Library of Congress. In these letters the Kiss title has been transferred to a Love-Car letter, with the Love title retained immediately below, hence the order "KLC." All of these KLC letters are derived from a single founder, with the co-linked: "You will receive good luck within four days of receiving this letter, *and you must, in turn, send luck.*" This

replaces the more usual condition "*provided you, in turn, send it on*" [1989]. KLC also truncates Lost Job - Better Job, omitting Carlo getting a better job. This co-linked rider is likely negative for propagation. The KLC variation has been translated into Spanish [1996].

The propagative advantage of the KLC variation is clear: it adds the replicative power of Kiss to that of the powerful Car testimonial, and retains the Love title only slightly diminished in prominence. The Kiss-Love order combines sensibly: "*Kiss someone you love when you get this letter and make magic. With love all things are possible.*" Prior to the millennial collapse of paper luck chain letters in North America, the KLC innovation was probably destined to capture the whole mainline, uniting the two sub-niches that developed with the Kiss and Love titles in 1983.

(iii) The JKLC transfer (5 examples).
Another Kiss-Love-Car combination, "JKLC," features "*St. Jude*" as a title above Kiss [1996-02]. The JKLC letters share with the above KLC clade the omission of Carlo getting a better job. Further analysis is needed to determine if this deletion is pre-linked to the KLC transfer and a hypothetical JKLC transfer event, or if JKLC is a modified KLC letter. The JKLC letters are co-linked to two notable features: (1) "Gene *Wall* lost his wife *ten* days after receiving the letter," and (2) "The chain comes from Venezuela and was written by *Saint* Anthony Degroup, . . ." (re-sanctification, see also < de-sanctification).

The proliferation of "*St. Jude*" in the mainline since [1987], usually as a postscript, does not prove it has positive replicative effect. Instead, it may be riding the potent Car testimonial [1988], on which it was pre-linked. "*St. Jude*" has been added more than once to North American luck letters [1991, 1992], and has been removed frequently [1993,1994, 1997]. Thus by itself it is risky to use for inferring phylogeny. On Mexican chain letters "*St. Jude Thaddeus"* clearly has replicative potency [1984, 1984, 1995]. The appeal of Jude to Latinos is fairly recent - one informant called him the "Patron Saint of Anglos" in the 1950's (Robert Orsi).

(iv) An additional Kiss and Love letter has the order Love-Kiss-Car [1997]. We have not determined if this "LKC" variation is descended from a separate transfer event or from a re-ordering of one of the above transfers.

The KLC, JKLC, KCL and LKC combinations all probably originated with recipients of Love-Car who remembered the Kiss title (or retained a copy), perhaps associating it with some prior romantic or sexual success. Wishing to use it again, they added the Kiss title to the Love-Car letter. Such transfer of key text from one letter to another may often increase propagation and is a significant factor in chain letter evolution. Examination of foreign language chain letters should reveal more transfers both to and from English language letters.

All fall down.
Despite the success of the DL type letters in the 1990's, their circulation, at least in English, has collapsed since the new millennium, as the following table illustrates.

Table 8. Numbers of English language paper luck chain letters collected per year of circulation.

Year of circulation	Mainline	Outlier
1995	13	2
1996	21	0
1997	9	0
1998	1	2

1999	1	0
2000	0	1
2001	0	0
2002	0	0
2003	1	0
2004	2	0

Collecting efforts that had produced at least several circulating letters a year continued from 1995 into 2004. Only three circulating examples have been collected in this millennium, one recently [2004]. The primary cause for this collapse must surely be the immunizing effect of exposure to the flood of email chain letters, hoaxes and parodies, especially among youth. This was the basis of a 1995 prediction that "*the familiar 'prayer' or 'good luck' type chain letters will totally disappear from the US mail by the year 2000*" [e1995-06]. A century of denunciation failed to eliminate paper luck chain letters (*New York Times*: 1916, 1917e, 1931, 1959b). The Internet and email may have all but ended them in just a few years.

Postscript (10/28/2004). Two mainline luck chain letters have been collecting in 2004, both being actively circulated. Possibly mainline circulation is recovering some because of two factors. First, as the letters become rare there is a feedback process where those circulating are more likely to reach virgin hands and hence win compliance. Second, it appears that in the last few years very few email luck chains are circulating, and hence there is much less cross immunization against the paper versions. If you receive any paper luck chain letters, even if they are very similar to some already in the archive, please send them to me so that I can adequately document this interesting phase in their history. Thanks, Daniel VanArsdale

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Eat No Dynamite (A collection of college graffiti): http://www.silcom.com/~barnowl/graffiti.htm

C1, C2, C3, C4, C5, C6, C7, C8, C9.

End: Chain Letter Evolution, Version ~~10/27/98f~~ 11/04/02h