Valerie Fridland:

So I do think there's a very good chance on the basis of similarities in their usage style, in their punctuation style, and in the way they structure sentences, that Zodiac and Margolis are same authorship. As you can see, Zodiac and Margolis share a large number of the features. It is really interesting that we see this pattern. I think this is one of our smoking guns.

Michael Connelly:

You're listening to Killer In The Code: Solving The Black Dahlia and Zodiac Cases. This is Chapter 14, and I am Michael Connelly. One of the things that has fascinated the investigative team since the very start are the linguistics. Each of the cases we have been looking at involve a killer who has reached out to the public and the police with messages of engagement. You have heard our veteran homicide detectives, Rick Jackson and Mitzi Roberts, say repeatedly on this podcast that it is a very rare thing to have murder cases in which the unknown suspect reaches out to taunt and threaten the public and the police. And yet we have dozens of messages from the Zodiac up in Northern California, and the Black Dahlia Avenger in Los Angeles, as well as the killer of Cheri Jo Bates in Riverside, Ray Davis in Oceanside, even Georgette Bauerdorf in West Hollywood.

And adding to these missives, we also now have the words of the suspected killer himself, Marvin Margolis, AKA Marvin Merrill. Simply put, words are a key part of these cases, and only now do we have the ability to conduct a one-to-one comparison of the words of Margolis and these notes from the killer in these cases. This is Alex Baber, the citizen sleuth who runs point on the investigation.

Alex Baber:

It demonstrates very risky behavior to actually reach out to the very people that are attempting to identify you. It's a game to him. He's trying to demonstrate his superiority, his intellectual ability to outsmart the people that are attempting to identify him or hunt him down. And in doing so, it's revealing of who this individual is, his egotistical mindset, his desire to prove that he can get away with a murder at any given time, and they're not going to be able to track him down or eventually hold him accountable for his crimes.

Michael Connelly:

As Baber has done since the beginning of this investigation, he has attempted to find the best of the best in different disciplines to study these cases and his findings, always letting the chips fall where they may in the pursuit of the truth. Top-notch homicide investigators, check. Top-notch code breakers, check. Top-notch handwriting and graphic art experts, check and check. And now it is time to hear from the linguistic experts. It is through word usage, sentence structure, syntax, tone, grammar, spelling and punctuation that identity and psychological profile can be deduced. Just as traces of a killer are found at every crime scene, so too with every message they construct and send.

Maybe because I'm a writer by profession, I found this part of the investigation fascinating from the start. I have never worked a homicide investigation or broken a code, but I have written millions of words in my career, so words remain important to me. I know they are revealing and powerful, and that's why we are going to spend the next episodes of the podcast exploring this part of the investigation. My guess is you are going to find it as fascinating as I have, but there's a lot to go over, so my advice is to wait until we are finished before drawing your own conclusions.

Keep in mind, this is a relatively new science when it comes to crime analysis. The investigators had handwriting experts on their team when the Zodiac letters and codes started coming in during the throes of that case in 1969. But there was nothing like this available during the Black Dahlia

investigation. Linguistics didn't solidly come into vogue in crime analysis until the 1990s when it played a key role in the Unabomber case. That was when the FBI started paying attention to it and the International Association of Forensic Linguistics was established. We'll get into all that in a later episode.

The team headed by Alex Baber decided to look at the linguistic aspect of the investigation from all sides. So we went to experts in both academics and law enforcement and put together a package of linguistic evidence for them to work with. Admittedly, it was an imbalanced package. There are 21 letters credited to the Zodiac, but there are only two letters from the killer of Cheri Jo Bates in 1966. And when it comes to the Black Dahlia Avenger, there is even less material for analysis because the killer of Elizabeth Short primarily cut words and letters out of newspapers and pasted them together to create his messages. This process obviously stunts natural speech habits and cadence and makes comparative analysis difficult.

But the key part of the package was a letter containing the words of Marvin Margolis himself. We reported in a previous episode that veteran Los Angeles homicide detective Rick Jackson was able to obtain Marvin Margolis's complete military file from Navy Archives, beginning with his enlistment in 1943 through his training as a combat medic and eventual deployment with the Marines to the bloody battle for Okinawa during World War II, and then to his final communication with the Navy in 1987: an eight-page letter requesting a purple heart for being wounded on Okinawa.

Incidentally, I want to take a quick side trip here and mention that during the making of this episode, Rick Jackson retired from his second stint as a homicide investigator, working cold cases for the San Mateo County Sheriff's Department in Northern California. It capped a 40-year career as a homicide investigator in Los Angeles and San Mateo. And on his last day on the job, Jackson cleared a 48-year-old murder case by taking the confession of the killer he had identified. An amazing moment in an amazing career. I've always said that if something would happen to me or one of my loved ones, Rick Jackson was the investigator I would want on the case. He would never give up.

Okay, back to Killer In The Code.

The letter in the military file authored by Margolis was the control document, if you will, in the package we put together. It is lengthy, full of unique phrasing, and it offers many insights into his history and dark view of the world. Our question to the experts was this, did the author of this letter write any of the letters and messages attributed by law enforcement to the killer in these other cases?

We focused on three cases, the Zodiac killings, the Black Dahlia case, and the murder of Cheri Jo Bates. The Margolis letter is now available on our website, killerinthecode.com, and I would draw your attention to the last page where he offers a postscript, a PS in which he dramatically changes tone and sheds the formality of the seven pages preceding it. In all caps, it is where he reveals most about himself. In a previous episode, we had actor Scott Klace read the PS and we'll replay it here so you can be familiar with it as it will be mentioned often by our experts in these episodes.

Scott Klace:

Freedom is to be free of a fear to be free. My brave friends, who fought and valiantly died, shall never know that they gave their lives in vain; shall never know that they could not rest their heads on soils of home in peace, though they were free to rest in fields of war; shall never know that they are forgotten, as leaves beneath a mulch of adverse laws, and beneath the living layers of vernacular veins of bureaucracy--so vast and yet so interlocked--who in fact have become another singular ruling tyrant, and have destroyed the free man's pride for which he fought and died. They will never know the anguish of their comrade who bled with them and lived to see that they died in vain; to see our loss of liberty; to see us fear to be free.

Michael Connelly:

Okay, let's get to our first expert. She is Valerie Fridland, foundation professor of linguistics at the University of Nevada, Reno. Fridland is an expert in social linguistics, which is the study of how identity is strongly tied to the words we use. She has authored multiple books and papers on the subject, is published regularly in *American Speech* and the *Journal of Sociolinguistics*. Her most recent book was published earlier this year and is titled *Why We Talk Funny: The Real Story Behind Our Accents*. A series of the professor's lectures is available as an audiobook. It's called "Language and Society: What Your Speech Says About You." I'm about halfway through and have found it to be fascinating and very germane to this investigation. Professor Fridland is the daughter of two immigrants who were non-native English speakers. This put her on a path to an academic career focused on understanding identity through the words we use.

Valerie Fridland:

My parents were both non-native English speakers and I grew up in the South, so I think language, and being different because of language, was something that was super salient to me when I was a kid. And did that make me think I'm going to be a linguist? No, it probably made me think I want to be an astronaut, but who cares about the language? But it was something that was part of my world, just this constant attention to the way my parents spoke and how they spoke differently. It just had been so present in my life, this constant conversation around language as sort of an identifier and as part of who you are. And not only that, but particularly as part of what people think about you and how they perceive you and what the character traits they assign you because of the way they talk, that I took a linguistics course and it was called Language and Society or something like that.

And it kind of rocked my world because it was the first time I understood there was a structure to the way we talk, that there's a pattern to the way that we talk, that something that we throw around so easily that we don't even pay attention to how we do it and what we say with it, which is language, is so incredibly richly driven by how we grew up, who we talk to, and the sort of identities and nations that we show allegiance to, without us having any conscious awareness that we're talking in patterns.

Michael Connelly:

Patterns of speech reveal identity. For the analysis Fridland conducted for this case, let's set a few parameters. She said there are four buckets here. There are the 21 letters attributed to the Zodiac. That's one bucket. There are the two letters attributed to the killer of Cheri Jo Bates who was stabbed to death in Riverside, California on October 30th, 1966. The third bucket contains the postcards and cut and paste notes sent by the Black Dahlia Avenger following the murder and bisection of Elizabeth Short in Los Angeles in 1947. All these buckets contained unsolved cases. And then there is the fourth bucket, the Margolis letter. When Fridland speaks of her analysis, she refers to these buckets by the killer's moniker or the victim's names or simply by Margolis. So we have Zodiac, Dahlia, Bates, and Margolis. Fridland agreed that the postscript to the Margolis letter was a linguistic analyst's dream come true.

Valerie Fridland:

The PS in Margolis is really the gold mine of a lot of this analysis because I think without that PS, we would have a lot less evidence, but not only does “shall” use and sort of this very authoritative necessity, obligatory kind of behavior start to emerge in the way that it's the style of writing, but also it shifts to all caps, almost to be a more emphatic, a more powerful form of writing. And that all caps is also a form that's chosen by Bates to write in, right? So there's no small and big caps. It's all in caps in those letters.

Michael Connelly:

Linguistic analysis is a science based on the comparison of data. Obviously the Zodiac bucket is much fuller than the Bates bucket. The more data there is to compare, the more assured the conclusion can be. So let's hear Fridland's summary conclusion and then we will go deeper into her analysis.

Valerie Fridland:

Overall, it's overwhelmingly similar in style, in usage of structure, in usage of grammatical constraints and in uses of punctuation. So, how Zodiac and Margolis write in those two different genres, right? So Margolis's letter is completely sort of formal letter to the army, filing a complaint kind of letter, whereas obviously Zodiac is a serial killer letter, so you can't really judge that much on content. The difference though is the PS in that Margolis letter, that's just so stunningly different in style, and that alone gives us a lot of data towards similarities across them. It's almost like he shifted styles to the serial killer style in that PS, and even just using the PS itself is I think something they have in common. So I do think there's a very good chance on the basis of similarities in their usage style, in their punctuation style, and in the way they structure sentences, that Zodiac and Margolis are same authorship.

Bates is an issue because there's just simply less data. Dahlia is a real issue because there's less data of like style. So in Dahlia, the clipping cut and paste style is it doesn't just limit the amount of data, it substantively changes the form and style of that data to be determined in part by the method that was used. So it's a harder one. I think of all of them, that's the one I'm least convinced is necessarily the same person, but it's in some ways because of style differences, because of the kind of restrictions of the data form, of the fact that they're using cut and paste from a newspaper. There's nothing that says they're not the same person, I can say that. I don't see any smoking guns that say this can't be the same person. I would say just if you want my quick and dirty take, that I think there's a very good chance that they're same authorship with Zodiac and Margolis.

I think that is also true of Bates, that a lot of the categories that they do not share is because of lack of data, right? It's not attested in the data rather than anything being contradictory to suggest they're not the same authorship. And in fact, there are some important traits which I'll talk about that they do share, which would lead me to believe that there's a very good chance that Bates is also same authorship. Dahlia is the one I don't necessarily think shows that, and it could be because it's not the same person. It could be because the data is so drastically different, it really isn't. There's not enough attested to prove that they're the same person. That said, I didn't find anything that explicitly would contradict that they could be the same person, but no great evidence that they are. So I think it's three out of four here in terms of what you all were looking at.

Michael Connelly:

I need to point out something here. The package that we put together for Professor Fridland did not include any of the other forensic or circumstantial evidence that has been gathered in this case. We were interested in a blind analysis without any biases. In fact, she said that while she was familiar with the Zodiac case because she had read a book about it several years ago, she knew nothing about the killings of Cheri Jo Bates and Elizabeth Short. So this blind analysis, if you will, was important. She did not know, for example, that Marvin Margolis was a key suspect in the Black Dahlia murder, that he knew and had even lived with Elizabeth Short. She also didn't know that the keywords used in the construction of at least one of the Zodiac ciphers were the words Elizabeth and Cheri Jo. She didn't know that in his last year of life, Margolis sketched a portrait titled Elizabeth that depicted a naked, dark-haired woman cut off at the waist and showing some of the wounds suffered by Elizabeth Short, not to mention the word Zodiac being hidden in the dark shading surrounding that central image.

So Fridland not finding a strong linguistic connection between the cut and paste Dahlia messages and the handwritten Zodiac letters does not rule out a connection. Once again, Alex Baber.

Alex Baber:

Well, when you look at the case from the big picture, you have to take in consideration all the experts that have either confirmed or were unable to eliminate Marvin Margolis as the author of the letters or the perpetrator of the crimes. There's so many pieces, individual pieces of circumstantial evidence as well as pieces of physical evidence that we've uncovered that points directly to him and not away from him. And if you take into consideration he was a primary suspect, her last known boyfriend that she dated, that he was questioned even though he was cleared due to alibis, he became a focal point in the 1949 grand jury inquest by the two detectives that initially cleared him. They said he was still a very good suspect, and this is two years after the crime was committed. And then you move forward and we get our hands on the NCIS file and we see his psych evaluation, the warnings that were in there that this guy came back from Okinawa and he was not the same man that he was when he left, obviously.

Now, whether there was a core issue with him prior to shipping out or deploying, that's still up for debate, but we do know after he returned, he was not the same individual. And when we go back and we piece all these together, individually, they may not stand strong, some of them, but as a whole, as Judge Trott had worded it, when you look at a donut, you look not at the whole H-O-L-E, but the W-H-O-L-E, you have to realize that this doesn't just fit together by coincidence, where he's at, what he's doing, everywhere he lives, every letter that's mailed, every connection, it's impossible to overlook. So all the experts, forensic experts, the handwriting analysis, the image, everything that we have only supports our findings in our investigation. We have yet to meet an expert that has told us that we're wrong. We're on the right road, and we just got to see it through.

Michael Connelly:

This is Mitzi Roberts.

Mitzi Roberts:

In context of the whole investigation, the linguistics report is only additive. Professor Fridland connects the Margolis letter to both the Zodiac and the Bates letter, which is irrefutable. I mean, she's so spot on, on that. And in the meantime, we have all this other evidence that connects the Dahlia to Margolis, to the Zodiac cases, all that other evidence you have to take into consideration. So in my mind, there's not four buckets. There's one bucket, and that's the bucket that is Marvin Margolis. Everything goes into that one bucket.

Michael Connelly:

And this is Rick Jackson.

Rick Jackson:

Dr. Fridland's really put it over the top with this analysis she did. Her analysis really only strengthens our case. I mean, she has a very qualified reason why she cannot strongly connect linguistics to the Black Dahlia killer in the letters because they were cut and paste type letters. It wasn't freehand writing like in Bates and the Zodiac cases, and so it's understandable. I like the fact that she's totally upfront, and this is why I can't do that. She didn't say it's not the guy. In my opinion, I think it's a great cumulation of evidence that she's put together.

Michael Connelly:

This is similar to the crypt analyst conducted by former NSA co-breaker Ed Giorgio and his team on this case. They confirmed that Alex Baber's method of breaking the Zodiac "My name is Cipher," which gave us Margolis's alias, Marvin Merrill, was sound and the conclusion was correct, but it wasn't the only answer that worked. It is only when you add the other evidence such as the keywords to the cipher being Elizabeth and Cheri Jo, and that Merrill was an alias for Margolis, a Black Dahlia suspect, and that another Zodiac code pointed to Elizabeth Short's grave or that the Zodiac called the police from a payphone within sight of a house where Elizabeth had once lived and so on, that the odds were, in Giorgio's words, vanishingly small that Margolis was not the Zodiac killer.

Mitzi Roberts:

In a case of this magnitude, you have to consider all of the evidence. When I go to trial, I'm not just going to show one or two of the best things I have. I'm going to show all of my evidence. I'm going to present the entire case to the jury. So when you add now this linguistics report, I think, again, it's just overwhelming evidence and even further convinces me that we have the correct suspect and it's Marvin Margolis.

Rick Jackson:

In looking at this episode and its emphasis on linguistics, that's great. And this further, further connects definitively in my opinion, but you have to, just like with any case that goes to court, you don't just center on a few pieces of evidence, you bring in the totality of all the evidence that points toward the suspect. All these things factor in, and then we keep adding additional things. In this case, the linguistics. So it's undeniable to me that this guy is involved in all of the cases we've been talking about. I've always been really interested in the linguistics part of it, but with Dr. Fridland, she blows it up big time.

Michael Connelly:

Here's another interesting point to be made about Professor Fridland's blind analysis. Remember, the Zodiac bucket we gave her contained all 21 letters ever connected to the killer, but three of those letters were suspect. They had long been thought to be phony, letters written by others as a prank or a hoax. We didn't tell her about that, and yet she told us right off the top when she presented the summary of her findings that her analysis indicated three letters were fakes and she named the exact three that have long been held in doubt. In other words, she knows her stuff. Incidentally, one of the Zodiac letters she confirmed as authentic was the one letter the killer sent south to the Los Angeles Times. You can take a look at it on the Killer In The Code website. And by the way, it's the letter that criticizes the police as usual, but then adds, "I do have to give them credit for stumbling across my Riverside activities." Yes, an early connection to the Cheri Jo Bates case.

Okay, let's get into some of the more exacting points of comparison by Professor Fridland. These come from a wide-ranging report she gave us that included a chart that she created that was sort of a scorecard for her analysis of the four buckets. And you can see this chart on our website. It charts 28 points of comparison and clearly shows the heaviest connection being that between the Zodiac letters and the eight-pager penned by Margolis.

Valerie Fridland:

In my opinion, based on the number I think I list here in just this really summary document that doesn't even deal with the spelling similarities, some of the other low level similarities that I think are fairly frequent that I did find, there's 28 categories and between Zodiac and Margolis, they share 21 of those.

That's a pretty high probability. I think Bates is also quite probable to be the same writer, but there's just less opportunity to determine. But some of the traits that I think are more influential in terms of things that a person would do as a matter of habit are shared by Bates.

Michael Connelly:

But as you'll see on the chart, there were connections found between all four buckets.

Valerie Fridland:

One thing that I do think is really interesting is the embedding of questions. So one thing that Margolis does twice is he asks a rhetorical question. Well, we have the same thing in Zodiac, this inclusion of rhetorical questions. I mean, people don't write in rhetorical questions that frequently, especially in something like Margolis's letter, which is a letter to the Army, where really a rhetorical question is kind of out of place, and yet he uses two showing that his though process, revealing his thought process is important to him. We find the same thing in Zodiac, right? And the other thing that I found really interesting that really united them all that I think is unique is that all three actually, Bates, Margolis and Zodiac, but particularly Zodiac and Bates, answer implied questions. So there's a question that was never stated, but in their brains they're thinking, "I know these people are wondering this question about me and I'm going to answer it here in this letter." Again, that seems to be an odd thing to do in a letter, to respond to a question that wasn't even asked for two serial killers to do it, I think is unusual, and yet they share that pattern.

And then the other thing I think that we really can't miss is the high use of modal verbs. So modal verbs are things that express possibility, necessity, or obligation. So if you say, "Will you do that?" You're asking someone the possibility of whether they'll do it. If you say something like, "I must do this," you're stating something about the necessity of doing it. If you say, "I can do this or I could do this," all of these are example of modal verbs, they're expressing a potentiality but not obligation. So, what you can see with modal verbs is that there's a climb or a kind of continuum where you go from a verb that expresses the strongest obligation and necessity, which is *shall* or *must*, to one that basically expresses very little obligation or necessity. This is like *can* or *could*, or *may*, right? So those are the weak modals, and on the high end, you have these strong modals.

And in fancy linguist talk, it's called deontic modality, but basically the breakdown is on one end with *shall* and *must* and *should*, you're expressing necessity and obligation and often control, right? The authority, you have the authority to have control over someone's actions or your own or someone else's. On the other hand, you're expressing that you have no control. It's sort of up in the air. It's possible. You can't do much about it. You may or may not do it. *Might, may, can, could*. Those are the weak modals. Historically, what we see is a movement in American English away from high necessity modals like *shall* and *must*, to the point where they're almost, especially *shall*, absent in modern speech. You don't walk around *shall*ing people, and a move towards using ones that have less necessity or obligation. Part of that is because we've become a more democratic society, what we value as people is we value freedom from imposition.

And as part of that shift in our mentality over the 20th century, we've shifted from high use of those modals in the 1800s that are like expressing strong necessity, *must* and *shall*, to almost non-existent use of them today. So instead of *must* today, you'd say, I *have* to, or I *need* to. Hardly anybody walks around saying, I must go to the dentist today, or I shall go to the dentist today. I mean, you just wouldn't have friends if you talk that way. But if you look at the trends of tracing this over the last hundred years, for *shall* and *must*, this trend started a long time ago. And over the last hundred years, if you look at studies of *shall* use, for example, the use of *shall* has dropped by a whopping 95%, which means people don't

use it. The places we do find it are in frozen expressions like *shall we dance* or *shall we say*, where we don't even think of it as *shal*l anymore, it's just part of that expression.

So essentially you don't use it. That had started by the middle of the 20th century where you basically didn't use *shall*. So this is, I think, one of the big things that really is most clear that ties these killers together and Margolis, is this use of *shall* at high frequency. So in the Bates letter, you see *shall*, and it's not many words. So you're not talking about a lot of words where you'd have, oh, there's lots of opportunities to use a modal verb and there's lots of opportunities to use *shall*. There's not that many. There's like 10 lines. Out of those 10 lines, guess what? *Shall* is used. In Margolis, in that PS where he goes from being a letter writer trying to be formal and tell a story and lodge a complaint and request something, all of a sudden you have this PS where he basically takes almost an alter ego on and completely switches. What's super noticeable is that there was never a *shall* used in the other context, but all of a sudden you have this repetitive *shall, shall, shall*, control and authority and obligation and necessity built into the structure of that. So all of these killers are using it in this sort of authoritative controlling sort of way. I have the power to determine obligation. I have control and am expressing obligation and necessity and I'm using *shall*. And Zodiac uses *shall* extensively for that same reason. So it's I think telling not only that they have this commonality from a verb that's hardly ever used, a modal verb that's hardly ever used at all, but they're using it in this context to express obligation, control, and necessity. Now, could this be a serial killer pattern more broadly because serial killers are all about control and forcing people to do things?

I mean, it's all about power. The use of *shall* is about power, which is why we don't use it anymore because no one wants to be *shalled* and no one wants to be that expressive and an asshole. No one wants to be a *shall* asshole. But it is really interesting that we see this pattern. I think this is one of our smoking guns. My main findings I think really point to shared authorship in these cases.

Michael Connelly:

Fridland said that there were interesting commonalities in word misspellings and misuse of punctuation. For example, the words *victim* and *twitch* are similarly misspelled in letters from the Zodiac and Bates cases. Commas are used in all four buckets where there should be periods.

Valerie Fridland:

When you look at the misspellings, they are very specific in pattern. What's interesting is some of them are intentional and then some of them probably are just not intentional. Absolutely the misspellings are over and above these findings, really suspicious, and they alone would make someone think, "Oh, this is unusual patterning and look, they're shared across two people that happened to kill people. Wow, that's pretty unique."

Michael Connelly:

Fridland found that certain grammatical errors are commonalities in both the Zodiac and Margolis buckets.

Valerie Fridland:

Both Margolis and Zodiac, one of the things that's very structurally similar is they both tend to really use a lot of run-on sentences. They both have this tendency of building a sentence by putting together a bunch of independent clauses essentially. Dahlia, by virtue of the cut and pasting, no one wants to be cutting and pasting all day. You're limited in what you can find. You're not going to be verbose in that context. So it's the exact opposite trend. In fact, sentence fragments are more common in Dahlia as

something we don't see in any of the other writing. So just by virtue, and then also the punctuation because you'd have to actually explicitly cut punctuation, which is done in one case. In another case, they add a question mark that's handwritten. But generally speaking, the punctuation is hard to analyze in that because it's unclear whether it's because they purposefully omit it, they didn't know to have it there, or they were too lazy to cut an extra comma out of the newspaper.

Michael Connelly:

Let's go back for a moment. Fridland said there are repeated uses of low frequency words in the material we gave her. A cut and paste note from the Black Dahlia Avenger says, "Dahlia cracking once terms." In the Zodiac letter, the killer both said he is crack proof. And then there is the word twitch used and spelled wrong in the same way in both a Zodiac and Bates letter. Then 17 years later, it is used again, this time spelled correctly in the Margolis letter.

Valerie Fridland:

I think it's a highly unusual word for all three of these people. Is it weird to ever use once in your life? Probably not, but for three of the same writers to use it, it is highly surprising. I think your focus on a lot of the vocabulary similarity is important, the misspellings of vocabulary similarity. A lot of the things that I'm talking about are more structural in nature, so things that normal people wouldn't think about looking at and which makes them so useful because normal people also don't think about changing them up. So with the spelling, I think it's really a good combination there that *twitch* is not a high frequency word. *Twitching* is a specifically unique choice. And then not only is it that three of these letter writers use that word, which the similarity alone is pretty surprising that they would have this common lexical item that's not a high frequency lexical item used in the same context, but the fact that it's misspelled in the same way across two of those letters I think is highly improbable that it would just happen by chance in two different contexts.

Michael Connelly:

It needs to be noted that the use of the word *twitch* was used in all three buckets in the description of impending danger or death. In fact, both the Zodiac and the Bates killer use it in conjunction with the word *scream* and *squirm*, another low frequency word according to Fridland. These letters are available in full on the website, but here is the excerpt from the Zodiac letter in which he is talking about torturing his victims.

"Some I shall tie over anthills and watch them scream and twitch and squirm." Four years earlier in a confession letter penned by the killer of Cheri Jo Bates, the writer said, "She squirmed and shook as I choked her and her lips twitched. She let out a scream." Both letters spelled the word twitch incorrectly in the same way as well as the word victim in other sentences. Fridland says the repeated use of those three words, *scream, squirm*, and *twitch* in one message was a telling indicator of shared authorship.

Valerie Fridland:

All three are unusual coalicates. What I mean by that is they're occurring together at the same time and to have that pattern repeat is what's unusual. So you have the same misspelling, the same three words, two of which are low frequency. That's really much more of an unusual pattern and I think important to this analysis. Again, I think when you take the misspellings, the pattern of misspellings, the shared vocabulary, because I also think what binds sort of the Bates letter writer and the Zodiac is, for example, the way they misspell *victim* the same way. When you look at those patterns, that's a pretty good case that's very obvious I think to a lot of people. It's easy to understand those patterns like, "Okay, yeah, I

can conceive of that. Those seem like unfamiliar words. We don't use them that often. These are weird misspellings and yet they have those in common." That's a good set of evidence.

When you add that to the structural and punctuation evidence that I have looked at, then I think what it does is just help affirm my findings and your findings that were done separately that deeds are very likely the same person.

Michael Connelly:

I assume most of you listening to this thought you had finished with English grammar lessons back in high school. So I'll give you just one more nugget of linguistic evidence from Professor Fridland, and that is another commonality among the buckets regarding what she called discourse markers. In this case, that would be the use of the word *yes* to begin a sentence, but not in answer to a question.

Valerie Fridland:

Yes. When I'm talking about a discourse marker is different than using a *yes* to affirm something. So if I said, "Did you paint the house?" And you said, "Yes, I did," that's actually confirming. But if you're just sort of saying, "Yes, we will do it," and no one asks you a question, that's actually sort of a stance marker. It's exclamatory, it's sort of advising, right? It's more about your mental state and what you're kind of emoting about rather than any kind of affirmation of a previous statement. It is a consistent trend across all three of these writers, Bates, the Bates killer, the Zodiac Killer, and Margolis. That may not seem like a big thing. Lots of people might do it, but to find three people that are suspected of doing that in all those same cases is unusual.

Michael Connelly:

Like Ed Giorgio and his team, we now consider Professor Fridland part of our team, and we will be hearing from her in later episodes as she continues her analysis.

Alex Baber:

I'd like to say that working with Professor Fridland has been an eye-opening experience for me. Linguistics is what I based my database on five years ago when I created it. And every conversation I had with Professor Fridland was enlightening to me. I learned something new and she was able to show me things that even I overlooked. There's not a lot of people that I've met that I can honestly say impressed me, but her analysis was clear, it was concise, and there was so much connective tissue, a term that we tend to use here, that connects Marvin to all the letters outside the Black Dahlia. But again, he can't be eliminated as the author of those. But it's overwhelming when you see the big picture and it comes from an expert, an academic professor who's well-known, well-respected, whose pedigree is impressive, for her to come to these conclusions independently. We held back some of the information. We didn't share the evidence with her. We just gave her the letters and said, "Look at these and please tell us if you see any similarities that stand out to you." And when she came back with her list, when you have 21 out of 28 possible similarities just between Marvin and Zodiac, that in itself is 75% right off the top. And then we have the other evidence that we've gathered throughout the years that point to him that supports her analysis. And as she worded it, hers was independent of our evidence. I think when you look at Cheri Jo Bates and the similarities between Zodiac and Bates themselves and then Marvin and Bates separately, it's just overwhelming.

Michael Connelly:

And we were not finished with this linguistic analysis. In our next episode, we will hear from a former federal agent who spent nearly 18 years in the FBI's vaunted Behavioral Analysis Unit, specializing in the use of linguistics to analyze evidence and build profiles of the suspects of serial crimes. Here's a preview of that.

Speaker 7:

Just reading them, it was clear to me that these are linked thematically. And mind you, copycats are easy in this day and age, like this whole Nancy Guthrie thing. It's so easy for copycats. The information is everywhere, but back then there wasn't this information super highway that we have. And so for someone to so copycat this, to describe the crime scenes, talk about them, use the same language, I find that extremely unlikely, bordering on impossible. So I'm satisfied in my mind from an investigative standpoint, they're linked.

Michael Connelly:

You've been listening to Killer In The Code: Solving The Black Dahlia and Zodiac Cases. This episode was written and produced by me, Michael Connelly, and edited by Terrill Lee Lankford, with music and post-production services provided by Mark Henry Phillips. We'll be back soon with Chapter 15. Thank you for listening.