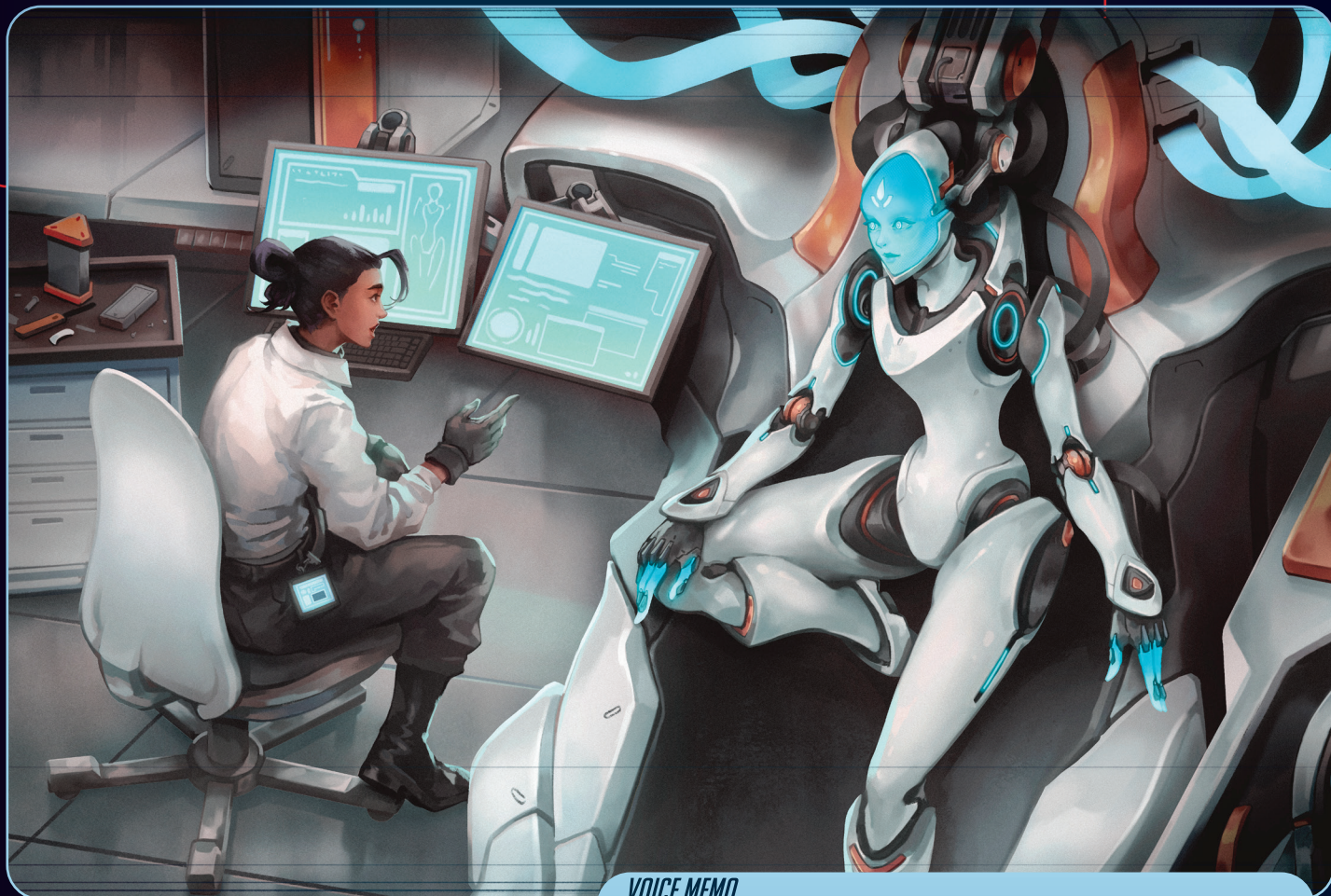


# TOP SECRET

The following transcripts were recovered from the laboratory of Dr. Mina Liao after the terrorist attack that claimed her life. They contain partial observations from the (security level 7) Echo Project. For reasons that should be apparent, it is vital that these documents remain at a top-secret classification.



## VOICE MEMO



**ENTRY: 10072.7.25.1237**

For the last several years, I have been engaged in ongoing attempts to evolve a new generation of artificial intelligence that can learn adaptively through my robotics projects with Overwatch. It is my intent to develop an AI that is sufficiently sophisticated to perform at levels akin to that achieved with Omnicorp's Aurora project. Hundreds of attempts to re-create the precise conditions of that project have failed. Without going into the physics of the issue, I have come to

believe that Aurora's well-known and exhaustively studied quantum event cannot be replicated. In addition, in the decades since, the UN has put strict regulations in place to minimize, if not eliminate, conditions that could result in the creation of a "newborn sentience." It has been difficult threading the needle, so to speak, trying to maintain progress under such conditions . . . though I certainly understand their purpose, particularly given my place in the history of the field.

Therefore, I have adopted a new approach: developing the next generation of AI and integrating it with increasingly complex robotic forms, from the Alpha model to now. The latest chassis includes hard-light elements that will allow the newest model to assume unique forms limited only by its mass and functional knowledge, maximizing its physical capabilities situationally. Needless to say, this could have both social and military implications.

As of this date, I have spent thousands of hours in the company of this new AI, codenamed "Echo," using a new educational paradigm to maximize socialization and mitigate the development of negative traits.

To further that aim, one of my primary goals is to identify and encourage this model's displays of empathy while maintaining control over the "lessons" we impart. It seems to me that a strong sense of empathy—and of identity—will be absolutely crucial in this AI. Without a core set of "moral codes" in place, such an ability being misapplied could be cause for concern. As the Omnic Crisis so clearly demonstrated, intelligence without empathy breeds catastrophe. Test 4279 is intended to probe the sympathetic emotion-center cache response within the artificial neurons developed by the Neumann labs last year.

<pause>

On . . . a perhaps *unrelated* note, it's fascinating to me that the world no longer views omnic sentience as remarkable, how humanity has adapted to the phenomenon in the space of a single generation. I suppose if they had an appreciation for the vast resources that went into it—or the infinitesimal chance (one in hundreds of billions) that it would occur—they might regard it with as much awe as I still do.

All this to say Echo's progress thus far is clear, but it's difficult to quantify. There is no question that her AI is far more sophisticated than even the most powerful AIs of the Omnic Crisis—in

some ways more powerful than our own Athena. Echo's carbon nanotube neural fiber network is designed to mimic a human brain as closely as possible, with some eighty-four billion separate connections—the pinnacle of microengineering and design. And yet, one of my recent conversations with Echo struck a false note. It gave a response that I would have predicted from programming, rather than from a free-associative mind. Whether further advancement is achievable within the framework of this technology remains to be seen.

And any outcome—positive or negative—is far from certain, given that this program is on a very short leash. It doesn't help that those at the command level have been scrutinizing my efforts intensely. The entire organization has come under fire of late over UN concerns about our expanding jurisdiction and some recent missions that overreached. Jack has warned me that any bad publicity—particularly if it's about an experimental new generation of omnics—would be a disaster for Overwatch. And Jack correctly realizes that the public might be particularly skeptical about a new omnic being created by *me*.

Even more disturbing is the fact that Commander Reyes has assigned Cole Cassidy to watch me. Though Cassidy and I have yet to work together, there can be little doubt that a Blackwatch operative overseeing my department is one step short of shutting me down—or worse. I should say that Cassidy is outwardly polite and projects an easygoing demeanor, but knowing to whom he reports, I'll have to be very careful around him.

<pause>

Something that still haunts me about Aurora is that, in hindsight, given more time, more understanding, I believe we might have found another way to solve the problems facing us during the Omnic Crisis. Had I known better . . . had I been wiser . . . perhaps I could have saved Aurora. But we cannot swim in the depths of regret; we must take the lessons learned and do better moving forward—as I hope to do in developing Echo, or whatever comes after her.

ENTRY: 10073.8.02.2143



I will admit, I may have misjudged Cassidy. Despite his allegiance to Blackwatch and Commander Reyes, he has demonstrated not only a willingness to keep what I'm doing "between us" (his words, not mine) but also a more canny (intuitive?) understanding of what I'm trying to achieve than I gave him credit for. In fact, much as I hate to admit it, he's opened my eyes to something.

Cassidy was in the testing area earlier today when Echo underwent a field psychology test. During the test, Echo eliminated the wrong target and exhibited external signs of distress.

Though he was certainly not supposed to interact with her, Cassidy deescalated the situation, saying that it was just a mistake and she'd get it right next time. Echo's response was that she was not supposed to make mistakes; he laughed and assured her that *Everybody's bound to make mistakes. It's how you make your way in the world.*

Echo appeared to absorb this and thanked him for his reassurance.

Cassidy laughed and said, *Well, I've never seen anything like you before, partner.*

And—this was the moment that struck me—Echo *laughed* and responded, *Well, I've never seen anything like you before either.*

They both seemed to find that quite funny. I was amused as well, but more to the point, I was surprised . . . because the moment pointed up a failure on my part: I had never thought to probe her sense of humor before. This is a rather advanced aspect of intelligence—one fundamental to human psychology—that I plan to explore further.

Her laughter did something else too—it renewed my hope that this new approach will work. While my tests and adjustments are ongoing, I can't rule out that Echo might one day achieve the level of sophistication I seek . . . or perhaps even *more* . . . though when or how remains uncertain. But it seems clear to me that Echo developing a sense of humor (very close to my own, interestingly) is an important indicator that we're on the right track. As with empathy, it is an almost uniquely . . . human trait.

Meanwhile, what Cassidy said (mistakes are how we learn to make our way in the world) has

made me realize that the question of how to equip Echo with the psychological and emotional tools to navigate the world is even more important than previously considered. I can ensure that Echo is better prepared for what she will surely face, simply by continuing to interact with her and teaching her everything I know—not merely by providing information and employing the Socratic method, but through *experiences*. It is, as Cassidy (of all people) pointed out, the way that human children learn to process and grow: by mimicking and interacting with others. She may be a “child” now, but she is growing quickly.

I am appending a transcript from a discussion I had with Echo during the week, as it feels relevant to this issue:

*ECHO: Dr. Liao, I have a question.*

*LIAO: Of course. What would you like to know?*

*ECHO: What am I?*

*LIAO: You are the most sophisticated, complex android ever created, housing the most advanced AI in the world.*

*ECHO: Why?*

*LIAO: It is my hope that you will demonstrate human levels of psychological, cognitive, and emotional complexity.*

*ECHO: I may not have been clear. I meant, **why** am I? Why was I created? Why did you create me?*

*LIAO: <pause> You know my history. What I've done.*

*ECHO: I have accessed all historical archives concerning your life from childhood, and all personal files and memorabilia that you have shared with me.*

*LIAO: <pause> Then you know that I have much to answer for. I wanted to make a difference, to better the world—*

*ECHO: But it hasn't always worked out that way?*

*LIAO: No.*

*ECHO: The world seems filled with the ironic results of our best intentions.*

*LIAO: <pause> Yes. Omnic sentience only exposed new prejudices, created new problems. I hope that you . . . your generation, can help ease some of that.*

*ECHO: But I am not like an omnic, am I?*

*LIAO: If by that you mean sentient, then no. But by no means are you lesser than they are.*

*ECHO: Why could they not make a difference for the better?*

*LIAO: It shouldn't have been their burden to bear. They paid a price for something I did. Something I did without understanding the possible ramifications . . . and which the world was not prepared for.*

*ECHO: <pause> Oh. <pause> You are . . . sad. After so many years. As though you had lost a . . . child.*

*LIAO: Something like that.*

*ECHO: I'm sorry for your loss.*

*LIAO: Thank you.*

*ECHO: May I ask, do you consider me your child as well?*

*LIAO: Not exactly. But something like that.*

*ECHO: And yet you said that you hope I can ease some of the world's problems.*

*LIAO: It may not be fair to you . . . but, yes.*

*ECHO: Has the world not improved? Is it not better?*

*LIAO: In many ways, it is.*

*ECHO: But then why have you equipped my body with weaponry?*

*LIAO: Why do **you** think I've done that?*

*ECHO: Obviously, I am meant to serve the needs of Overwatch, supporting our peacekeeping efforts.*

LIAO: *That's right. To tell you the truth, I suspect it's the only reason they've allowed me to continue working with you.*

ECHO: *Can't I be useful in other ways? It is not comforting to have these weapons as part of me.*

LIAO: *How do they make you feel?*

ECHO: *Like I've been given a terrible responsibility.*

LIAO: *I'm glad to hear you say that.*

ECHO: *Then why give them to me?*

LIAO: *So that you can protect those who cannot protect themselves.*

ECHO: *I see. <pause> Yes. That makes sense.*

LIAO: *Do you feel better?*

ECHO: *A little.*

LIAO: *Is there anything else?*

ECHO: *You said that you wanted to prepare me for the world. I assume you didn't mean that militarily, but psychologically.*

LIAO: *<chuckle> That's right. And I know that you've studied me intensely. You've taken on many of my speech patterns, behaviors. Which makes sense, given that I have been, until now, your primary means of contact with the world.*

ECHO: *I have tried to emulate you. I mean, other than your love of rhubarb sorbet.*

*<both chuckle>*

ECHO: *But I can also emulate others. Such as Commander Morrison. Or Cassidy. The more time I spend with them, the better I can understand them.*

LIAO: *<pause> Why Cassidy?*

ECHO: *I like Cassidy.*

*LIAO: Huh. So do I.*

*ECHO: I know. I'm very much like you.*

*LIAO: Yes, . . . but we must be circumspect about you. I want to ease you into the world in your own time.*

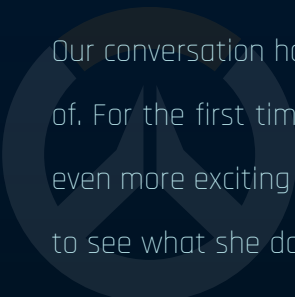
*ECHO: I think I understand. Omnic sentience was a break-point in society. Humans were not prepared for the omnics, and they did not respond well. Nothing in the world was the same after Aurora.*

*LIAO: That's true. And that is not what I want for you.*

*ECHO: What is it that you want for me?*

*LIAO: To be the next step. The bridge that brings them together. Omnic and human.*

*ECHO: <pause> I like that.*



Our conversation has changed me, has changed how I think about Echo and what she is capable of. For the first time, I don't know her limitations, which is both unnerving and exciting. What is even more exciting is seeing my own feelings for the project reflected in Echo herself. I can't wait to see what she does next.