Interview with Nicholas Wade

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SIEGEL: The information I am about to give you and your response will now be recorded.

My name is Marni Siegel and I am a student at Duke University. I am in a course on the history of genomics that includes an oral history project. One goal is to produce a written transcript of interviews with important figures in genomics. Some of the interviews may be archived or made public through a website.

I selected you as the person I would like to interview. The interview should last about 45 minutes. Your participation in this interview is strictly voluntary, and you may withdraw at any time. You do not have to answer every question asked. The information that you provide will be "on the record" and may be attributed to you. If you do not want something public, then we will turn the tape off and will ensure it does not appear in the transcript.

This interview is being recorded and I will take written notes during the interview. The interviews that are posted publicly will be archived as a history resource. It may be included as part of the "Human Genome Archive" established at Georgetown University with funding from the National Science Foundation, and now shared between Georgetown and Duke with funding from NIH and the Department of Energy. If you prefer that the interview be used only for the course and not made public, please indicate this.

One risk of this study is that you may disclose information that later could be used in ways you do not like and cannot control, by those accessing the archives. The benefit of participating in this study is ensuring that your side of the story is properly portrayed in the history of genomics.

Mr. Nicholas Wade, do you agree to the interview?

WADE: I agree?

SIEGEL: My first question is, I was reading up on some of your history, and I found the article about the book that your grandfather wrote about the Titanic. And what was your grandfather like?

WADE: Well, he died when I was quite young, I think my mid-teens. So I didn't know him very well.

SIEGEL: I was reading a Rae Goodell article from September 1977, and she cited you as the science community's DNA scribe. How did you get into studying science? I know that you majored science at the university, but how come you did not pursue this and instead pursued writing as a career?

WADE: When I was at school in England, where people have to decide their major in high school,, I specialized in classics, in Latin and Greek, and so wanted to learn something different at college. I decided the only thing that I couldn't teach myself at university or afterward was science. I never intended to work in a laboratory or become a scientist. I studied science just as an intellectual interest.

SIEGEL: Ok, so how did you begin your career as a writer?

WADE: I saw a job advertised one day on the news section of *Nature*, the English scientific journal, so I joined *Nature* and worked as a news writer for several years. At that time, they supplied a daily science column to the *Times of London*, so I spent most of my time doing that. It was a very useful exercise because I learned a lot about science. The downside was that when you learn science by writing about it, you make all your mistakes in public, and readers are not shy of letting you know when you've made an error.

SIEGEL: Oh no, so did you make a grave error at the beginning of your career? Anything really bad happen?

WADE: No, there was nothing too terrible, it was just that one is constantly aware that if you are writing in the public page, it is like being an actor on stage - the audience gets to notice all of your stumbling and fluffed lines.

SIEGEL: This past week in class, we discussed the Asilomar Conference, and Professor Cook-Deegan mentioned that you were actually one of the reporters invited to the conference. And how did this come about?

WADE: I was then working on *Science* magazine in Washington. I went to Washington as *Nature*'s Washington correspondent, and one day *Science*, which was our major rival, called and asked if I would like to work for them. I thought that it would be fun to work for an American publication for a time. So I was the reporter covering genetics when the Asilomar Conference was convened. That's how I got to attend it. It was a memorable occasion, and I was glad to have been there.

SIEGEL: So, what was- who did you encounter there, and what were your first impressions upon going to the conference?

WADE: Well, I think everyone realized that it was an unprecedented occasion. It was the first time that scientists had ever discussed putting voluntary restraints on a technique. There were some strong political passions in either side. There was international representation – even the Soviet Union had delegates there as I recall - and there was lots of very full and fascinating debate between the participants.

SIEGEL: And part way through the conference, James Watson, Mr. Watson changed his mind. Why do you think that happened, or what happened leading up to that that made him change his mind?

WADE: He was of course a signatory of the letter in Science that led to the conference being convened. I don't know for sure why he changed his mind about the wisdom of the process he had helped launch. But he's always been very prescient about many political issues, and I think in this case he probably foresaw that once scientists called for some restraints on research, however reasonable, the public or environmentalists would call for even tighter restraints. They'd say, 'If even scientists think this is risky, there must be real danger here.' And of course that's just what happened. So Watson was one step ahead of most his colleagues, as usual, and had come around to thinking that it would have been better if scientists had not raised this issue publicly, with the risk of unleashing uncontrollable political passions, but had resolved the matter quietly behind closed doors. But by the time of the Asilomar conference, it was far too late for that kind of response.

SIEGEL: So what was the end conclusion that you reported on, and how did you convey this to the public?

WADE: As I recall, I had a deadline just two or three days after the conference ended if we were to get a story into the next issue of Science: I think I had just a weekend to write the article. I remember working very hard because I had lots of notes to transcribe and a series of very complex debates of which I had heard only the public portions - many important things happened in the negotiations behind the scenes, which we did not learn of until several years later. But I wrote an article as best I could which I hope reflected the tone of the debate and the principal issues and the rather surprising conclusion that emerged at the last minute from the conference.

SIEGEL: And did you think that the technicality of the conference – we were arguing about in class how technically detailed the conference was – and do you think that this was an issue? Because they were talking about how it was too technical to the point where people outside the conference would not be able to understand.

WADE: Well, one of the clever things the organizers did was to invite reporters on the condition that they sat through the entire conference and wrote nothing until it was over. So that gave the reporters plenty of time to get familiar with the issues and try to understand what the scientists were talking about. I think to a large extent that was successful because most of the coverage was, I think, quite good and well-informed despite, as you say, the technical content of the issues.

SIEGEL: Not only the controversy within the Asilomar Conference, but also the greater controversy that went along the Human Genome Project between the public and private sectors. Would you be able to talk a little bit about the Venter and Haseltine split and what went on between the two of them – what you reported on. I read a bunch of your articles; actually, I'm writing a paper about it, so it was very interesting to me. But how did you get in touch with Venter and Haseltine, and what were their different opinions in the 90’s? 1994-ish era?

WADE: Their relationship arose because Wallace Steinberg, a venture capitalist who had seen the value of the genome earlier than many other people, had tried to set Venter up with a private company and Craig had said, no he didn’t want to run a commercial venture, he wanted to run a non-profit venture. So the solution Steinberg devised was to have a commercial entity, which he put Haseltine in charge of, linked to a non-profit entity of which Venter was in charge. Essentially Venter passed on his findings to Haseltine who had an agreed six months to patent them before Venter published them. This odd couple arrangement worked as long as Steinberg was alive, but as soon as he died, which was two years into the partnership, given that both Venter and Haseltine have large personalities, it was inevitable that without a peacemaker around, they clashed and eventually parted company. Venter gave up some 40 million dollars that he was due from Haseltine just for the sake of achieving his independence. So as divorces go, it was quite costly.

SIEGEL: And, how much in contact were you with the two of them throughout all of this?

WADE: Well, I wasn’t closely in contact, I would just call up whenever I was writing a story. I didn’t have the luxury of following them on a day-by-day basis because I had so many other things to cover.

SIEGEL: So what were you focusing on around that period for the, you were working for the *New York Times* at this point?

WADE: Yes, that’s right. This would have been in the late 1990s. A lot was being written about the patenting the genome, which I found a dry subject and tried to keep well away from despite its importance. So I was more focused on the scientific side, on the methods of genome sequencing, on the first bacterial genome, which Venter achieved, and issues like that.

SIEGEL: So what was the most interesting story that you covered around this period? What interested you the most?

WADE: Well, I was amazed at the map of the first bacterial genome that Venter and Hamilton Smith had decoded. This was the first time anyone had seen a whole genome of a living organism, if one doesn’t count viruses which of course are a lot smaller and really parasitic bits of DNA, not real organisms. This was the first time that you could see the blueprint of a living thing, and in preparing it Venter pioneered many things we now take for granted such as how you display these genes and how you try and assign them to families. He was the first person to have to deal with this new knowledge, and the first to decide how to display it. So that was the kind of issue that I found most interesting, and I think indeed that paper is one of the most highly cited papers in biology.

SIEGEL: Do you think the conflict between Venter, the private sector, and the public sector of the Human Genome Project was a good thing or do you think that kind of dirties the science in a sense?

WADE: Oh no, I think that it was an excellent thing. Competition is almost always good, and Venter certainly provided fierce competition for the public sector, which sped up enormously once it felt Venter's breath hot on its heels. They adopted many of Venter's methods. In fact, Venter's genome sequencing method turned out to be more daring and much more efficient than theirs was. He was a very formidable competitor. He had the advantage of doing everything in a single place whereas, largely for political reasons, the public sector had divided up its funds among many different universities, not all of which were equally competent. There were all kinds of benefits the public reaped from the competition, not least of which was that the genome was finished many years sooner than it would otherwise have been.

SIEGEL: That is true. Why did you choose to write a book on nuclear war- the aftermath of nuclear war?

WADE: That was something I was asked to do by the publisher, a free-lance assignment that I took on.

SIEGEL: Your most recent book: when did you start researching for that? How did the idea for the book come about?

WADE: The idea derived from the many articles I found I was writing at the *Times* about recent human evolution. I realized that there was a very useful book to be done by putting in one place all the new insights we have on human origins from many disciplines but using the new genomic discoveries as a framework. I found there was a lot of new material that I wasn't aware of. It all came together in a book, *Before the Dawn,* that describes the last 50,000 years of human evolution.

SIEGEL: What were your findings about the Ashkenazic Jewish population?

WADE: That was about a hypothesis put forward by Henry Harpending and Gregory Cochran. They sought to explain the reasons for Ashkenazi intelligence and Ashkenazis' many contributions to our culture, by establishing an evolutionary link between Ashkenazi IQ, which is somewhat higher than European IQ, and the special set of genetic diseases that have affected Ashkenazim. It's a very interesting thesis. It is by no means proved. It is based on an extended chain of arguments. Break one link in it and the argument fails, but each link has been quite carefully worked out and I thought it was interesting enough to bring to readers' attention, not least because if it is true, then it is an example of very recent human evolution. Many people, especially social scientists, assume that human evolution came to a halt at a point so far in the past that they needn't bother about it, but of course evolution cannot halt, and human evolution has continued vigorously, probably to the present day. Many examples of recent evolutionary change will probably be coming to light, and the case of Ashkenazi IQ may be one of those examples.

SIEGEL: So intelligence- so you think that intelligence, well it has obviously been affected by evolution, but do you think that there is an intelligence “gene” so to speak?

WADE: Well there are probably a large number of genes that underlie intelligence and other cognitive faculties because brain tissue is very expensive to run, it uses up large quantities of glucose, and no organism will invest in a large brain unless there is some good reason for doing so. So the size of our brain is definitely under genetic control, and you would expect intelligence to be influenced by the genes as well. Of course the environment would have an input, but it would be very surprising indeed if there were no genes involved.

SIEGEL: Right. So in light of Watson’s comments recently, what do you think he was trying to get across when he said what he did? Do you think that he actually believes what he said or, and also too, what is the role of the journalist in reporting what Watson said?

WADE: Well, I suppose it’s the same as with any other situation, one should try to report what’s of interest or significance and also to explain the relevant background. I didn’t write an article about the subject, so I don’t have any position to defend. I’m not sure how well it was covered. Watson made three remarks: I think each was in a different context, and each may have sounded more understandable in its context, but they were all put together by an English newspaper, I believe it was the *Independent*, in an article that appeared during his book tour. And if you read all three remarks together, they did make one feel a little uncomfortable, particularly the remark about employment, if indeed he said what was attributed to him. The remark about IQ scores has a factual basis because different racial groups do indeed come out with different scores. European-Americans score 100 on average by definition, Asian Americans come out somewhat higher, and African-Americans somewhat lower. That much is agreed: the disagreements concern downstream issues such as what do IQ tests mean, how much of the difference between races is due to environment and how much to heredity and so forth. But Watson didn’t get into that; he simply said, as I recall, that African-Americans do less well on IQ tests. And I think that is factually true and widely known to be the case, despite what was reported. I would have thought that a more substantive issue is whether he was wise in saying it, for it’s a somewhat divisive remark, and I think that one should be careful in making remarks that divisive unless one sets the context and explains why it is relevant. And perhaps this is just that Watson did in the original interviews, but I didn’t research them because I didn’t write an article about it.

If I may revert to your original question: what do I think he was trying to do. I think that he has, to his credit, often tried to initiate public discussion on misunderstood issues. He’s done that by making remarks that surprised or shocked people as a way of getting attention. He’s spoken out on genetic engineering, for example. He believes deeply in the power of genetics to do good for people if properly used and in particular, I think, he wants to keep the door open to things like germ-line genetic engineering, which would allow us to fix diseases in an individual and all his descendants, without having to make new repairs in each generation. Watson's not saying we should do that, but he would like for people to keep the door open until we can assess it. So that's one area in which he has spoken out. Now, my guess is that in this case, he is trying to start a conversation about race and the genetic differences between races, which are certainly coming to the fore because of what we know about the human genome and diseases, many of which have a different genetic basis in the various races. It's clear that each major racial group and maybe the ethnicities within races have slightly different genetic susceptibilities to disease, so if you are going to treat everyone equally, which we certainly should, then you need to study the genetic basis of disease of each race because it may be different. And that's a rather difficult concept to get across to the public because certain social scientists have spent so many years saying that there is no genetic basis for race. I think Watson was trying to get people to reconsider this subject in the light of new information but that's just a surmise on my part.

SIEGEL: Are you going to write an article about Watson in the future, or are you focusing on something else right now?

WADE: I'm on book leave, doing another book, so I am away from the newspaper for several months

SIEGEL: Oh, ok so what is your book going to be about?

WADE: This book is about the evolution of religious behavior.

SIEGEL: Could you tell me a little about that? What have you found so far?

WADE: I'm trying to address the question of why religious behavior evolved. It looks like a behavior that has a genetic basis because every known human society has some form of religion. Religion must have been practiced in the ancestral human population before it dispersed from its homeland in Africa some 50,000 years ago. Religion is also very costly in biological terms. It takes up a lot of time, energy, and resources so it must produce some benefit in helping people survive. And if we knew what that benefit was, we would gain a deep understanding into the very complex roles that religion plays in today's society. Far from fading away as society became more secularized, as was predicted in the 1900's, religion has continued to be a powerful force. Religion is personally very important to people but I think that it evolved not because of what it does personally but because of its social effects, which were a way of getting everyone on the same page for collective action. Social cohesion was important for hunter-gatherer societies which were very egalitarian, with no one eager to give or take orders. With religion, however, a group could get everyone to agree on a common moral code, for example, or to act together for defense or for attacking other groups. In today's societies, we see religion performing much the same roles.

SIEGEL: That's very interesting! I look forward to reading that in the future. Going back to writing and the newspaper, how do you go about conveying accurately both the public perception or/and the scientific knowledge that is coming out. What is your approach to this?

WADE: We look for what is new and significant and explicable to readers in a short space. We try to put things into words that are comprehensible and readable and also attract the reader's interest.

SIEGEL: What's the most interesting story you've ever covered?

WADE: In terms of scientific interest, I would say the stories on human origins that I put together in my book *Before the Dawn*. In terms of personal drama, I wrote a book long time ago, called *The Nobel Duel*, about a race between two scientists who spent some twenty years battling each other for a Nobel prize, only to have the race end in a dead heat - they were awarded the Nobel Prize jointly. There was so much personal animosity and rivalry and intrigue on the road to Stockholm that it made a good book, or at least one very enjoyable to write.

SIEGEL: What were they researching?

WADE: The two scientists were Roger Guillemin, of the Salk Institute - in fact he became the head of it recently - and Andrew Schally, of the Veterans Administration in New Orleans. They were trying to identify the hormones that are produced in the hypothalamus region of the brain and which control the pituitary gland. These master hormones are produced in very small amounts and were very hard to detect with the methods then available.

SIEGEL: And who were you working for at that point?

WADE: I was working for *Science* magazine.

SIEGEL: All right, and is there anything that I should have asked you, having to do with social or political history of genomics that would be of interest to college kids?

WADE: Well, you've asked me lots of excellent questions. Nothing immediately springs to mind that I need to add.

SIEGEL: What is going on in Congress right now with genomics and what is the biggest issue that is going on?

WADE: Well, the government is sequencing the genomes of more and more species, which is interesting but not ground breaking. I suppose the major issue before Congress is the perennial one of stem-cell research. There has been a resounding silence from stem-cell researchers who have made almost no progress that I can see in terms of showing the cells can be used therapeutically to regenerate tissues. It's possible that stem-cell research will be as disappointing as gene therapy. We know regeneration can be done because nature does it quite regularly with little animals like newts and zebrafish, but nature does it in the opposite way to the one that the stem-cell advocates have proposed. The way you regenerate a newt's tail or a deer's antler is not from stem cells: you take the adult cell at the site of the wound, and you dedifferentiate it back into a stem cell and from **that** stem cell you generate a new organ. So if nature is saying the way to do regeneration is to start from the adult cell then it may be hopeless for us to start with the stem-cells. And that may be the reason why we've had no progress so far as I can see. On the other hand, it's been a wonderful way of raising funds for science.

SIEGEL: And one last topic. The program of Rabbi Josef Ekstein for Tay-Sachs, did you talk about this in one of your books? Or what do you know about that?

WADE: Yes, he runs an excellent voluntary program for reducing the burden of genetic disease in the Jewish community.

SIEGEL: . And what about eugenics. Did you ever write any articles on the eugenics movement in America and the sterilization program in North Carolina?

WADE: No, I never have done.

SIEGEL: Who is the most interesting character you've ever interviewed with?

WADE: Oh! Sydney Brenner is pretty interesting. James Watson is fascinating. I've had brief conversations with Francis Crick before he died. I wish they had been longer. Those are the three who come immediately to mind.

SIEGEL: And, have you ever had an interview with somebody, and they conveyed a great message onto you? Like the most influential thing on you?

WADE: No, I don't think I have.

SIEGEL: That's about all I have. But thank you so much for doing this interview with me.

WADE: Oh, you're very welcome!

SIEGEL: I've learned a lot. And I'm going to go read your entire book on the ancestral human population- the most recent one that you wrote.

WADE: Oh good, I hope that you enjoy it!

SIEGEL: Because we have to write a large research paper, so I think I might write it on that.

WADE: Great.

SIEGEL: All right, have a great week, and thank you so much.

WADE: And thank you so much for thinking up such good questions. You must have done a lot of preparation.

SIEGEL: Talk to you later.

WADE: Ok, Bye bye.