

# University Report

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NARRATOR - This week from Dar-es-Salaam communication and the  
JOHN BANKOLE importance of understanding traditional ways of  
JONES: transmitting information - and from the University of  
Science & Technology, Kumasi, Ghana, news of some very  
important research concerned with understanding why and  
how drugs affect people in different ways.

For many years now investigations have been going on to determine how drugs are broken down and used by the body - that is their metabolism - and what their distribution is. Obviously, this work is essential for the preparation and formulation of drugs. In fact, the distribution, metabolism, and consequently the action of any drug on the body - or any part of the body - depends on many factors, some of them - on the surface - social. One of these factors that is being studied at Kumasi is the reaction of the urine - that is to say that people with acidic urine will react differently to drugs than those with alkaline urine. This is called Urinary pH, and it can vary considerably. Urinary pH is expressed in numbers - so that someone with a pH of approximately 5-7 has an acidic reaction of the urine, and someone with a pH of about 7-8.5 has an alkaline urine. Well, as I said, in the Department of Pharmaceutical Chemistry at Kumasi work is being done on the whole business of drug metabolism, distribution - and thus effectiveness, for good or ill - on various types of people in Ghana. Someone who has been specialising in the urinary pH is Senior Lecturer Dr Bozena Hadzija, and on the campus at Kumasi William Sam first asked Dr Hadzija which are the factors that produce a difference in urinary pH and consequently affect the distribution, metabolism and excretion of drugs.

DR HADZIJA: One of the factors influencing differences in Urinary pH is the diet. It is well known that the pH of urine is on the acidic side in subjects on a high protein diet. Low subjects, whose food consists mainly of carbohydrate diet, have alkaline urine.

WILLIAM SAM: How much does the urinary pH of a man in Ghana, for instance, differ from those in Western countries?

DR HADZIJA: Well, this is a very important observation. In the Western world in subjects receiving a normal balanced diet, urinary pH varies between subjects as well as within subjects throughout the day, but the average pH is about 6. In Ghana, we selected twelve men, aged twenty to thirty years, from two classes of persons. First, students in halls of residence at the university who were receiving their usual balanced diet and, two, laboratory assistants, living at home, receiving their usual low protein diet. The results show that the urinary pH of laboratory assistants was alkaline in average 7.5, and of students acidic - average 5.9, which is a significant difference. It was interesting to observe that there was virtually no overlap in the pH profile in the two classes of subject.

WILLIAM SAM: What implications would you expect from these observations?

DR HADZIJA: The results of the differences in urinary pH have many implications in action, metabolism and distribution of different drugs. That is why the two classes of subjects will inevitably excrete drugs - partially ionised - to a different extent.

For instance, basic drugs will be expected to be excreted much less rapidly and metabolised to a greater extent by laboratory assistants than by students.

WILLIAM SAM: Have you carried out some experiments in this respect with different drugs?

DR HADZIJA: In fact, we have made some preliminary investigations with amphetamine and its analogues which supported our conclusions. Central nervous stimulation was more pronounced in laboratory assistants under alkaline urine than in students' acidic urine conditions after a single dose of 5 milligrammes of amphetamine. Even when the drug was taken at seven in the morning, insomnia resulted in laboratory assistants much more than in students. It is interesting also to add that the alkaline urine pH changed to an acidic one immediately after the laboratory assistants changed their diet. For instance, they were given balanced breakfasts for five consecutive days and their urinary reaction changed from alkaline to acidic which resulted, of course, in a faster excretion of amphetamine drugs.

WILLIAM SAM: It is known that all drugs before being released for marketing must be clinically tested. Do you think that the results which you obtained would influence the clinical tests?

DR HADZIJA: I think that since the pH of the urine can alter the excretion of drugs and also the ratio of metabolites to parent drugs in the body, our results indicate that it may be unwise to extrapolate from the observed effects and side effects of drugs in clinical trials in developed countries to predict the effects of these drugs in communities and countries with different dietary customs, including Ghana.

WILLIAM SAM: Do you intend to extend your experiments' to include some other drugs?

DR HADZIJA: Yes. We intend to extend our investigations by including more drugs from among other amphetamines, anti-malarials, anti-histaminics, analgesics and anorexics, particularly those drugs which are used in Ghana frequently.

NARRATOR -  
JOHN BANKOLE  
JONES: Dr Bozena Hadzija, Senior Lecturer in the Department of Pharmaceutical Chemistry at the University of Science and Technology, Kumasi, was talking to William Sam on the campus there.

And now to a completely different, but equally fascinating topic - the business of different ways of communicating that we have in Africa. Apart from the pleasure we get from our traditional ways of paying compliments - or insulting people, come to that - by proverbs, and so on, much of our speech and use of words is closely connected with, and sometimes dictated by, the social set-up. Someone who's done work on this, on both sides of the continent, is Mr Peter Seitel, a member of staff at the University of Pennsylvania in America. He worked first on the usage of proverbs in the novels of perhaps Africa's best-known writer - Chinua Achebe - trying to see if he could write a set of rules which would account for their usage. Mr Seitel, in the process, became increasingly aware of the importance of, in particular, proverbs in our societies - especially in more rural areas - as a means of being properly understood. So, having got a sort of model from which to work, he went to Tanzania to test it in the field. The title of his study there - "The Social Uses of Verbal Art" i.e. proverbs, folktales, and poetry - among the Wahaya. Just before Mr Seitel left Dar-es-Salaam for the States, he talked to John Carthew about his study and first John asked him how he applied the model he'd worked out from Achebe's novels in the field in Tanzania.

MR SEITEL: Well, what I found was that the model, in general, was very good but it was not really sophisticated - was not complex enough to deal with the data. What I did was for six months was proverb interviews, watched people as they used proverbs, and tried to write what we might call a grammar of proverb uses.

JOHN CARTHEW: Could you give us an example of this to try and show just what was going on?

MR SEITEL: Well, in general, I found that the proverbs do essentially two things. They name a recurring sort of situation and they give us strategy for dealing with it. Now let me give you an example. A friend of mine and I went to visit somebody and at the time that I wanted to leave I quoted a Kihaya proverb which says in English "One oar leaves early." So I was saying, "We are alone. We have a long way to go. Let's leave." Whereupon my friend said "In the house of the good man, you cannot leave him. Poverty will kill you there." Well, he was saying that when you meet somebody and you stay in his house and he's such a good person, it is so difficult to leave him, that even if poverty will come to you there you still can't leave." Well, what he had done was to say "Yes. We have to leave, but the reason that we are having so much difficulty in leaving is because the person we are visiting is such a good person." Well, my naming of the situation first was: "This is a situation in which we have to leave. The strategy is let's leave now." His strategy (he had essentially the same naming of the situation) - his strategy was "Yes. We have to leave now. But let's say what a good person this is." This is what I mean by a strategy and naming of the situation.

JOHN CARTHEW: Can I go back to something you mentioned earlier. You spoke of carrying out proverb interviews. Could you tell me something about what that involved?

MR SEITEL: Well, what I essentially did was to try to construct a proverb interview on the model of a linguistic interview i.e. if I am trying to elicit from you various kinds of linguistic forms I will say "Give me a sentence. 'John hit the ball.' And I will vary one aspect of that sentence." What I did with proverbs was to, for example, vary the person to whom the proverb is applied - the same proverb with a different kind of correlation - second person instead of first person changes the meaning entirely. I might also vary whether this proverb occurs before or after the event to which it refers, whether the people are present or not present.

JOHN CARTHEW: So that, having done this work with proverbs, you did find that you could write a kind of grammar of proverb usage. Were you able to take it further though? Were you able to construct a similar kind of grammar for other genres of verbal art?

MR SEITEL: Yes. Well, what I expected to find was that all the concerns, all the types of information that I would need for proverbs would be just about all of them that existed for all verbal art because proverbs were so connected to social context, much more so, say, than folktales, or songs, or poems. I found, in fact, that I could use the technique which I used for proverbs with folktales. In Buhaya, folktales are also used for the same kinds of social purposes that proverbs are. Let me go on to explain that. If proverbs are the most socially bound of verbal art, and folktales are a little bit less socially bound, then we have poetry which is recited and doesn't usually refer to a social situation which is there. It isn't usually used as a strategy. And I was interested in seeing how people order their social reality through the use of metaphor. To take it one step further. We have poetry which is at least somewhat occasional, and this

of totemism which exists and is dying out now in Buhaya is another metaphoric system whereby people are forbidden to eat certain kinds of food. Two people who are forbidden the same food cannot marry. This is a metaphoric system. This person doesn't eat this. The other person doesn't eat something else. Therefore they can marry. If, in fact, they eat the same thing they could not marry. So what I was interested in was taking a metaphor from the point of view, first, of a very strategic use, a very person-to-person use, and then tracing it through all the way to a situation where the metaphor is a very major ordering principle in society.

JOHN CARTHEW: What would you say, essentially, that your research has brought out? Does it have any kind of practical application?

MR SEITEL: Well, in the African situation we must be concerned with communication. If we're interested in communication, if we're interested in convincing people that certain facts of society are better than others or certain policies are better than others, we have to understand how people traditionally convince one another. And, if we can understand this, then perhaps we can better convince them or at least speak to them more directly in their own terms.

JOHN CARTHEW: Does what you're saying imply that this kind of research will have to be carried out in every area of Tanzania?

MR SEITEL: No. Because what I think will happen, when other research is done perhaps in a few more places, is that there are certain general concerns that one must have in order to construct traditionally understandable messages i.e. the kinds of messages which Wahaya accept might be very similar to the kinds of messages that Wachaga or that Wasukuma or that any of the other peoples in a certain area might respond to. I have, of course, no way of

judging whether this is, in fact, the case. But it seems to me that the ways that people have of reasoning are pretty much based on the kinds of societies which they live in. The way they view their social order depends, to a large extent, on what the social order is. And the social order, in turn, depends, to a large extent, on the type of economy and the type of ways which they have of making a livelihood. And as these things, first of all, are very widely distributed in vast areas, probably the ways people have of looking at their society, ways that people have of speaking to one another, convincing one another, are also widely distributed. The second point about it is that as these economies and social organisations evolve and develop the ways of looking at society will change. And the ways of looking at society, and the ways of talking and convincing one another will become more and more uniform.

NARRATOR - Well, I hope it doesn't become too uniform at that.  
JOHN BANKOLE Anyway, that was Mr Peter Seitel, talking to John Carthew  
JONES: about his research in Tanzania into the social uses of  
verbal art among the Wahaya