

CURRENT DEVELOPMENTS IN GESTURE RESEARCH

UH University of
Hertfordshire

MANCHESTER
1824

WORKSHOP 2

*UNIVERSITY OF MANCHESTER
19TH JANUARY 2007*

10.00 A.M. TO 5.00 P.M



WE ARE VERY PLEASED THAT YOU WILL BE JOINING US AT THE SECOND OF TWO BPS FUNDED WORKSHOPS WHICH PROMISE TO OFFER AN EXCITING OPPORTUNITY FOR RESEARCHERS IN THE GESTURE FIELD TO COME TOGETHER TO EXCHANGE KNOWLEDGE, COMMUNICATE IDEAS AND METHODS AND TO DISCUSS CURRENT DEVELOPMENTS IN THIS FIELD.

THE WORKSHOP WILL CONSIST OF INFORMAL PRESENTATIONS AND OPEN DISCUSSIONS. WE HAVE AN EXCELLENT SELECTION OF SPEAKERS WITH A DIVERSE RANGE OF TOPICS. THE PRESENTATIONS ARE NOT TIMETABLED SO AS TO ALLOW THE OPPORTUNITY FOR DISCUSSION AND FLEXIBILITY IN THE EXCHANGE OF IDEAS.

DETAILS OF THE DELEGATES AND PRESENTATIONS ARE INCLUDED HERE AS WELL AS TRAVEL INFORMATION. ANY QUERIES PLEASE ADDRESS TO JUDITH HOLLER (JUDITH.HOLLER@MANCHESTER.AC.UK)

WE LOOK FORWARD TO SEEING YOU AT WHAT PROMISES TO BE AN EXCITING WORKSHOP.

KAREN PINE

GEOFF BEATTIE

JUDITH HOLLER

DELEGATES

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| TANYA BEHNE | UNIVERSITY OF MANCHESTER |
| MINGYUAN CHU | UNIVERSITY OF BIRMINGHAM |
| NAOMI COCKS | CITY UNIVERSITY |
| DORON COHEN | UNIVERSITY OF MANCHESTER |
| SUE FIELDER | UNIVERSITY OF MANCHESTER |
| EMILIE GENTY | UNIVERSITY OF ST. ANDREWS |
| JUDITH HOLLER | UNIVERSITY OF MANCHESTER |
| LIZ KIRK | UNIVERSITY OF HERTFORDSHIRE |
| SOTARO KITA | UNIVERSITY OF BIRMINGHAM |
| TRACY MACLEOD | UNIVERSITY OF GLASGOW |
| PAUL MARSHALL | OPEN UNIVERSITY |
| MARIA O'NEILL | UNIVERSITY OF BRADFORD |
| MILENA PISHEVA | UNIVERSITY OF BOLTON |
| CARL PICKERING | JAGUAR CARS & COVENTRY |
| UNIVERSITY | |
| SIMONE PIKA | UNIVERSITY OF ST. ANDREWS |
| KAREN PINE | UNIVERSITY OF HERTFORDSHIRE |
| ADAM SCHEMBRI | UNIVERSITY COLLEGE LONDON |
| ZOE WHEELER | UNIVERSITY OF SUSSEX |
| KATIE WILKIN | UNIVERSITY OF MANCHESTER |
| NICOLA YUILL | UNIVERSITY OF SUSSEX |

TALKS

JUDITH HOLLER & KATIE WILKIN

I WILL TALK ABOUT A PROGRAMME OF EXPERIMENTAL RESEARCH WHICH FOCUSES ON INVESTIGATING THE INFLUENCE OF SOCIAL, INTERACTIIONAL AND CONVERSATIONAL PROCESSES ON LANGUAGE USE, REFERRING TO BOTH THE USE OF SPEECH AND SPEECH-ACCOMPANYING HAND GESTURES. IN PARTICULAR, I WILL TALK ABOUT STUDIES WHICH FOCUS ON SHARED KNOWLEDGE, ITS EFFECT ON GESTURAL COMMUNICATION AND THE ROLE THAT GESTURE PLAYS IN COLLABORATIVELY ESTABLISHING SHARED UNDERSTANDING AND COORDINATING CONVERSATIONS. THE WORK BUILDS ON THE PLETHORA OF EXPERIMENTAL STUDIES THAT HAVE INVESTIGATED VERBAL LANGUAGE USE PREVIOUSLY, BUT, IN LINE WITH THE NOTION PUT FORWARDS BY ADAM KENDON AND DAVID MCNEILL, IT OFFERS A BROADER PERSPECTIVE WHICH CONSIDERS GESTURES AS PART OF LANGUAGE AND SHOWS HOW PEOPLE USE SPEECH *AND GESTURE* TO COLLABORATE AND COOPERATE IN TALK.

SOTARO KITA, O. DE CONDAPA, M. CHU & C. MOHR

METAPHOR EXPLANATION ATTENUATES THE RIGHT-HAND PREFERENCE FOR DEPICTIVE CO-SPEECH GESTURES THAT IMITATE ACTIONS

DIFFERENTIAL ACTIVATION LEVELS OF THE TWO HEMISPHERES DUE TO HEMISPHERIC SPECIALISATION FOR VARIOUS LINGUISTIC PROCESSES MIGHT DETERMINE HAND CHOICE FOR CO-SPEECH GESTURES. TO TEST THIS HYPOTHESIS, WE COMPARED HAND CHOICES FOR GESTURING IN 20 HEALTHY RIGHT-HANDED PARTICIPANTS DURING EXPLANATION OF METAPHORICAL VS. NON-METAPHORICAL MEANINGS, ON THE ASSUMPTION THAT METAPHOR EXPLANATION ENHANCES THE RIGHT HEMISPHERE CONTRIBUTION TO SPEECH PRODUCTION. HAND CHOICES WERE ANALYZED SEPARATELY FOR: DEPICTIVE GESTURES THAT IMITATE ACTION ("CHARACTER VIEWPOINT GESTURES", MCNEILL, 1992), DEPICTIVE GESTURES THAT EXPRESS MOTION, RELATIVE LOCATIONS, AND SHAPE ("OBSERVER VIEWPOINT GESTURES"), AND "ABSTRACT DEICTIC GESTURES". IT WAS FOUND THAT THE RIGHT-HAND OVER LEFT-HAND PREFERENCE WAS SIGNIFICANTLY WEAKER IN THE METAPHOR CONDITION THAN IN THE NON-METAPHOR CONDITIONS FOR DEPICTIVE GESTURES THAT IMITATED ACTION. FINDINGS SUGGEST THAT LINGUISTIC PROCESSES IN THE TWO CEREBRAL HEMISPHERES INFLUENCE THE DIVISION OF LABOUR BETWEEN THE TWO HEMISPHERES IN PRODUCTION OF GESTURES THAT IMITATE ACTION.

TRACY MACLEOD

A GROUP GESTURE: DOES GROUP SIZE INFLUENCE GESTURE?

THE ROLE OF GESTURE IN DIALOGUE IS INVESTIGATED AND A CODING SCHEME DEVISED THAT'S APPLICABLE TO MULTIPLE PARTY GROUPS. TO ESTABLISH A BASELINE, DYADS DISCUSSED AND ORDERED A SET OF RANDOMLY SELECTED CARTOON STILLS. THE TASK WAS REPEATED TWICE ALLOWING FOR TWO CARTOON CONDITIONS (FLOWER/BOOK) AND NUMBER OF STILLS VARIED BY 10 (5 EACH) OR 8 (4 EACH) ACROSS CONDITIONS. THIS EXPERIMENTAL DESIGN WAS EXTENDED TO GROUPS OF 5 AND 8 PERSONS. CODING FOUND SIMILAR GESTURE TYPES TO THAT DESCRIBED BY BAVELAS ET AL (1995). PROPOSITIONALS (ICONICS/METAPHORICS) WERE MOST FREQUENT FOLLOWED BY BEATS AND SOCIAL GESTURES. PRELIMINARY ANALYSES INDICATE GESTURE RATES ARE INFLUENCED BY GROUP SIZE AS ALL GESTURE TYPES OCCURRED MORE FREQUENTLY IN DYADS AND IN THE SMALLER GROUPS THAN IN THE LARGER. THESE FINDINGS ARE IN LINE WITH THOSE FOUND IN SPEECH (FAY ET AL, 2000). THEY SUPPORT THE CLAIM THAT MONITORING ABILITY INFLUENCES COMMUNICATION STYLE AND IN DOING SO HIGHLIGHT THE IMPORTANCE OF GESTURE AS A PART OF THE COMMUNICATION

CARL PICKERING**A RESEARCH STUDY OF HAND GESTURE HUMAN VEHICLE INTERACTION**

THIS PAPER DESCRIBES THE AUTOMOTIVE HUMAN MACHINE INTERFACE (HMI) TRENDS AND ISSUES WHICH ARE DRIVING AUTOMOTIVE USER INTERFACE DESIGNERS TO CONSIDER HAND GESTURE RECOGNITION AS A REALISTIC ALTERNATIVE FOR USER CONTROLS. A SUMMARY OF CURRENT AUTOMOTIVE HAND GESTURE RECOGNITION RESEARCH IS GIVEN. A NUMBER OF HAND GESTURE APPLICATIONS FOR HUMAN VEHICLE INTERACTION (HVI) ARE ALSO DISCUSSED TOGETHER WITH THEIR RESPECTIVE BENEFITS.

SIMONE PIKA & JOHN C. MITANI**REFERENTIAL GESTURAL COMMUNICATION IN WILD CHIMPANZEES (*PAN TROGLODYTES*)**

ONE OF THE DRIVING FORCES OF HUMAN RESEARCH IS THE QUESTION HOW SPOKEN LANGUAGE ORIGINATED AND EVOLVED. RESEARCHERS QUITE REGULARLY ADDRESSED THIS QUESTION BY COMPARING HUMAN COMMUNICATIVE SIGNALS TO THE SYSTEMS OF COMMUNICATION EVOLVED IN OTHER ANIMALS, ESPECIALLY IN NONHUMAN-PRIMATES (HEREAFTER PRIMATES). THE MAJORITY OF RESEARCH FOCUSED ON VOCAL COMMUNICATION, BUT RECENT STUDIES PROVIDE EVIDENCE THAT GESTURAL SIGNALLING PLAYS AN IMPORTANT ROLE IN THE COMMUNICATION OF APES AND RESEMBLES THAT OF PRE-LINGUISTIC HUMAN INFANTS IN SOME IMPORTANT WAYS. THE MAJORITY OF GESTURES USED BETWEEN APES ARE IMPERATIVE AND DYADIC, WHICH MEANS THEY ARE USED TO ATTRACT THE ATTENTION OF OTHERS TO THE SELF. HERE, WE REPORT THE FIRST OBSERVATION OF THE WIDESPREAD USE OF A REFERENTIAL GESTURE IN WILD CHIMPANZEES (*PAN TROGLODYTES*), WHICH DIRECT THE ATTENTION OF RECIPIENTS TO PARTICULAR ASPECTS OF THE ENVIRONMENT. THE USE OF REFERENTIAL GESTURES IS OF SPECIAL IMPORTANCE BECAUSE THEIR USAGE HAS BEEN LINKED WITH COGNITIVE CAPACITIES SUCH AS MENTAL STATE ATTRIBUTION. WE DISCUSS DIFFERENT HYPOTHESES.

NICOLA YUILL & ZOE WHEELER***USING GESTURE TO DISAMBIGUATE MEANINGS IN JOKING RIDDLES**

12 PAIRS OF 7- TO 9-YEAR-OLD CHILDREN DISCUSSED JOKING RIDDLES, E.G. 'HOW DO YOU MAKE A SAUSAGE ROLL? PUSH IT DOWN A HILL' AS PART OF A COMPREHENSION TRAINING STUDY. ANALYSIS OF THE CHILDREN'S LANGUAGE SHOWS THAT VERBALLY EXPRESSING BOTH SENSES OF AN AMBIGUOUS PHRASE PREDICTS LEVEL OF COMPREHENSION IMPROVEMENT. THIS POSTER EXAMINES THE POTENTIAL ROLE OF GESTURE IN FORESHADOWING CHANGES IN CHILDREN'S LANGUAGE COMPREHENSION. WE IDENTIFY 5 WAYS THAT THE GESTURES OBSERVED MIGHT INFORM US ABOUT CHILDREN'S UNDERSTANDING OF AMBIGUITY. WE WILL DESCRIBE THESE, WITH ILLUSTRATIVE VIDEO CLIPS AND REPORT SOME INITIAL DATA ON THE FREQUENCY OF DIFFERENT TYPES OF GESTURES IN RELATION TO COMPREHENSION CHANGE.

*DATA DERIVED FROM RIDDLES PROJECT: YUILL, LUCKIN, KERAWALLA, PEARCE,

POSTERS

MINGYUAN CHU & SOTARO KITA

INDIVIDUAL DIFFERENCE IN GESTURE PRODUCTION IN A MENTAL ROTATION TASK

THIS STUDY INVESTIGATES THE SPONTANEOUS GESTURES IN A MENTAL ROTATION TASK. THE PARTICIPANTS WERE SEATED ALONE IN AN EXPERIMENTAL ROOM, AND RESPONDED WITH TWO FOOT-PEDALS WITHOUT ANY TALKING, LEAVING THEIR HANDS FREE FOR SPONTANEOUS GESTURES. BOTH THE ERROR RATE AND THE REACTION TIME OF THE GESTURER GROUP ARE SIGNIFICANTLY HIGHER THAN THOSE OF THE NON-GESTURER GROUP. FURTHERMORE, FOR THE GESTURER GROUP, THERE WAS A SIGNIFICANT RELATIONSHIP BETWEEN THE NUMBER OF GESTURES PER TRIAL AND ERROR RATE. WITHIN SUBJECT ANALYSIS SHOWS THAT THE ERROR RATE OF TRIALS WITH GESTURES IS SIGNIFICANTLY HIGHER THAN THAT FOR ITS COUNTERPART TRIALS WITHOUT ANY GESTURE. THE GESTURE RATE IS SIGNIFICANTLY HIGHER IN DIFFICULT TRIALS THAN IN EASY TRIALS. IN ADDITION, THE OBJECT-ANCHORED GESTURE HAPPENS SIGNIFICANTLY EARLIER IN THE EXPERIMENT THAN THE DETACHED-FROM-OBJECT GESTURE. WE CONCLUDED THAT PEOPLE WITH POORER SPATIAL ABILITIES DEPEND MORE ON THEIR GESTURES, THAT DIFFICULT SPATIAL PROBLEMS TRIGGER MORE GESTURES, AND THAT GESTURAL STRATEGY BECOMES LESS DEPENDENT ON THE DIRECT PERCEPTION-MOTOR LINK (I.E., INTERNALIZED) OVER THE EXPERIMENT.

NAOMI COCKS, SALLY ZLOTOWITZ, LAETITIA SAUTIN, GARY MORGAN & SOTARO KITA

THE IMPACT OF APHASIA ON GESTURE COMPREHENSION: A PILOT STUDY

THIS POSTER WILL PRESENT DATA FROM A PILOT STUDY WHICH INVESTIGATED 2 PARTICIPANTS WITH APHASIA'S ABILITY TO INTEGRATE INFORMATION FROM GESTURE AND SPEECH. THE RESEARCH COMPARED THE 2 PARTICIPANTS WITH APHASIA WITH A GROUP OF CONTROL PARTICIPANTS.

BASED ON THE FINDINGS OF THIS PILOT PROJECT WE WILL DESIGN A LARGER PROJECT WHICH WILL INCLUDE A LARGER NUMBER OF PARTICIPANTS. WE WELCOME FEEDBACK ON THE PILOT STUDY AND THOUGHTS ON HOW THIS RESEARCH MIGHT PROGRESS.

DORON COHEN

AN INVESTIGATION INTO USING DE-CONTEXTUALISED, CLAUSAL UNITS AS THE PRIMARY ANALYTIC UNIT IN GESTURE RESEARCH

GETTING THERE

THE WORKSHOP WILL TAKE PLACE IN THE SCHOOL OF PSYCHOLOGICAL SCIENCES AT THE UNIVERSITY OF MANCHESTER, COUPLAND BUILDING 1, IN THE TURING SEMINAR ROOM (THERE WILL BE SIGN POSTS TO SHOW YOU THE WAY).

FOR DETAILED MAPS AND DIRECTIONS ON HOW TO FIND US PLEASE LOOK AT:

-CAMPUS MAP: [HTTP://WWW.MANCHESTER.AC.UK/VISITORS/TRAVEL/MAPS/NUMERICAL/](http://www.manchester.ac.uk/visitors/travel/maps/numerical/)

(THE COUPLAND 1 BLDG. IS NUMBER 43; THE UNIVERSITY ACCOMMODATION FOR PEOPLE WHO ARE STAYING OVER NIGHT IS NUMBER 29)

-IF YOU ARRIVE AT PICCADILLY STATION, THE 147 BUS WILL TAKE YOU FROM THERE DIRECTLY TO THE UNIVERSITY. PLEASE LOOK AT THE FOLLOWING WEBSITE (WHICH CONTAINS EXACT MAPS OF WHERE THE BUS LEAVES, TIMETABLES ETC):

[HTTP://WWW.CAMPUS.MANCHESTER.AC.UK/STAFFNET/TRAVELPLAN/OXFORDRDLINK/](http://www.campus.manchester.ac.uk/staffnet/travelplan/oxfordrdlink/)

-IF YOU ARRIVE AT OXFORD ROAD STATION, THERE IS A BUS STOP AS YOU WALK DOWN TOWARDS OXFORD ROAD, AND YOU CAN TAKE THE 142, 143, 42, 43. ALTERNATIVELY, YOU CAN JUST WALK UP THE ROAD (WHICH TAKES ABOUT 10 MINUTES), STRAIGHT AHEAD, UNTIL YOU COME TO THE UNIVERSITY (A BRIDGE ACROSS THE ROAD SAYING 'UNIVERSITY OF MANCHESTER' MARKS THE START OF THE CAMPUS).

IF YOU DO TAKE THE BUS, YOU HAVE TO GET OFF WHERE THE CAMPUS MAP SHOWS A LITTLE FLAG (NEXT TO NUMBER 39) – THE BEST THING MAY BE TO ASK THE DRIVER TO LET YOU KNOW WHEN YOU ARE AT THE UNIVERSITY/PRECINCT CENTRE.

THERE WILL BE TEA AND COFFEE UPON ARRIVAL FROM 9.30 A.M. ON FRIDAY. THE WORKSHOP WILL BEGIN AT 10 A.M. LUNCH WILL BE PROVIDED AT 12.30.P.M. AND THE DAY WILL CLOSE AT 5 P.M.

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