Nonverbal behaviours in popular music performance: A case study of *The Corrs*

KAORI KUROSAWA AND JANE W. DAVIDSON
Department of Music, University of Sheffield

• ABSTRACT

The aim of this study was to investigate performer nonverbal behaviour in popular music performance in order to understand the use and functions of gestures, postures, and facial expression. To this end, the study begins by reviewing relevant psychological and sociological research including Ekman and Friesen and Argyle's categorisations of nonverbal behaviour. Drawing on these specific categories, functions of nonverbal behaviours in popular music performance are proposed. These include: to maintain performer self-control; to provide musical, narrative, emotional and personal information; to regulate and manipulate relationships between performer, co-performer and audience. The investigative work focuses on a case study of *The Corrs* and is carried out by observing two commercially available film recordings of the band in live performance. The songs demonstrate that within this band, three of the four members take turns singing solos. In the first performance, *What can I do?* is sung by Andrea (principle vocal), and in the second performance, *No frontiers* is sung by Sharon and Caroline. Focusing on the soloists, all their nonverbal behaviours are classified in terms of types (*e.g.*, emblem, illustrator, regulator, adaptor, affect display) and frequency of behaviour. The results demonstrate that Ekman and Friesen and Argyle's categorisations provide a complete description of the nonverbal behaviours found in the performances. Moreover, the analysis reveals differences between individuals and the two songs. With these findings, the paper concludes that nonverbal behaviours in this type of performance are crucial to the development, production and perception of the musical performance. Though preliminary, the study indicates a need for much more detailed research of this topic if performers, educators and researchers are to understand and exploit the nonverbal aspects of a musical communication fully.

INTRODUCTION

A developing research literature suggests that music is central to and reflective of the constitution of the human body and the interaction of bodies through thoughts and actions within social frameworks (*e.g.* Malloch, 1999/2000, and the work on

mother and infant interactions). Therefore, music is regarded as an important means of communication, with the body being crucial to this process (*cf.* Merriam, 1964; Gaston, 1968). Yet little investigation has been undertaken to explore the nonverbal information specified in a musical performance and its function. The current study is viewed as a preliminary means of exploring this under-researched area.

Diverse styles of music have emerged in Western modern society, with popular music flourishing and being featured in everyday life (De Nora, 2000). Academic study of popular music has been largely developed in the area of social studies in order to understand its significance from socio-cultural viewpoints. A definition of popular music which persists is that it has emerged as a product for a commercial purpose by means of "reproduction technology" (*cf.* Benjamin, 1970) such as recording. As a result, popular music has tended to be emphasised as something to be listened to (Tagg, 1982). However popular music has another side, that of "watching the musical performance", which has been evolved through the development of the technology of video and visual equipment, and so, individuals are not only able to listen to popular music, but watch performances of it on TV, video and DVD, and this has produced some academic investigation (*e.g.* Berland, 1993; Fiske, 1989; Frith, 1993; Watanabe, 2000). Arguably, of course, listening to music on CD means that the performance activity can be imagined/visualised (see Hatten, 2003, for such arguments). But, the "watched" performance provides more specific information for the audience about the context — the social dynamics of performer/co-performer and audience interaction — and arguably, a richer experience. Indeed, some research has shown that people prefer watching or attending live musical performance more than simply listening (Davidson, 1997; Kurosawa, 2002).

Intriguingly, nowadays, audiences can attend a live popular concert and watch the performance they are attending by viewing large video screens to the side of the live stage action. These screens usually show the performers in "close up" — so, the audience has the experience of "seeing" the performer at an intimate viewing distance (on screen), while simultaneously seeing the performer with their own eyes, often in the far distance (on the stage). The often large distance between the performer and the single audience member in the natural viewing situation makes the interaction with people in the audience immediately around that single spectator a more powerful social experience. Thus, the audience member can experience the power of the dynamics of the close proximity inter-audience behaviours whilst viewing the performer. In addition, the single audience member can also have the experience of being part of an often huge crowd looking at the performer and experiencing those "overall" (sense of group) dynamics, along with the interpersonal interactions within their local audience environment (see Davidson, 1997, for some discussion of audience behaviours). The video screens add to these dynamics, for they often show images of the audience as well, so, the audience

can watch themselves during the concert. This "self-viewing" can include seeing the audience as a whole unit, or viewing selected individuals within the audience, often in "close-up". The presence of the video screen provides relatively new ways of experiencing communication, and provides a potentially rich source of communicative possibilities which have obvious research potential (see Davidson, in press, where this is investigated in terms of a live performance by Robbie Williams).

The relative simplicity of the interaction between performer and audience in a typical live performance situation has yet to be fully explored, which seems to be an especially important first step, given all the complex social interactions possible with the video technology explored in the previous paragraph. Therefore, the current paper looks at live performance without video technology, taking the view of an audience member observing the performer, rather than any other and more complex audience interaction as in the multiple social interactions described above. The current study is a point of departure towards understanding the use and function of the nonverbal behaviour of the performer, and might lead to understanding the much more complex social interactions, for example, the use of video screens as mentioned above.

THE USE AND POTENTIAL FUNCTION OF NONVERBAL BEHAVIOUR IN POPULAR MUSIC PERFORMANCE

Of course, the musical material itself is a crucial component of the performance for the communicative activity, the performer's movements being used in the production and communication of the music. There are, however, additional more socially focused concerns such as acknowledging the audience, and projecting a desired "performing persona" to the audience (see Frith, 1996, for an extensive discussion of this topic), and reacting to the audience. Moreover, co-performers are required for the production of the performance, and so communication within group is essential. So, these factors combine and impact on how the performance is produced (Davidson, 2001).

Musical communication has developed in various traditions. In Western classical music, the performer is required to be "a faithful carrier of the composer's message" (Sloboda, 1998, p. 22). This typically means that the role of the performer is dependent upon the composer's score. Namely, the composer's characteristics and ideas seem to be more focused upon as the core communication in the performance, rather than the performer's personality and self-expression. In other traditions like popular music, a performer tends to be more self-reliant, often being the composer, or at least the arranger or improviser of a pre-existing work (Frith, 1996). Consequently, in popular music performance, performers arguably become central to the music's meaning, and part of the pleasure of the music is in the individual character of how the performer's voice/sound is produced and presented as a "personality within a body" (Frith, 1996, p. 208). Whilst this meaning can be par-

tially heard and visually imagined from a CD recording (as mentioned earlier), it is experienced most strongly when the performer can be seen. Because music unfurls over time in space, the co-performer and audience communicative process itself can have a powerful role in determining the performance and the musical product, and makes extensive use of verbal and nonverbal systems in the process (Frith, 1996). Whilst researchers like Middleton (1981, 1990) and Frith (1983, 1987, 1996) have previously discussed these topics, the use and functions of the popular performer's coding and de-coding of "nonverbal behaviours" to clarify the process of musical communication has not received much research attention (see Davidson, 2001, for example).

For a nonverbal communication to occur, there needs to be a socially shared signal system or a code between an encoder who makes something public through that system or code, and a decoder who responds systematically to that code. According to Watzlawick and Beavin (1967), all nonverbal behaviour is communicative, whether intentional or not. However, as Wiener *et al.* (1972) point out, a nonverbal sign may exist but not be part of a communication. Proving whether or not an encoder has an intention to communicate is difficult, and additionally, the decoder may misinterpret the meaning of a nonverbal code. So, a complex and subtle process of receiving and decoding information operates. It is important to point out these possibilities for when we observe music performance, we are receiving information that a performer may or may not intend. Despite this complexity, research has shown accuracy in the reading of nonverbal codes (Davidson, 1993; Kotlyar and Morozov, 1976). At one level, the bodily movement seems connected with the production of the music technically (to play the music functionally), but the movements also reveal information about the musical structure and its expression (*e.g.*, a head nod at a cadence point). Even when these are small changes to musical aspects of the performance, the bodily information can provide very fine grained information about the emotional intention of the performer, such as to play in a sad manner (Behrens and Green, 1993; Gabrielsson and Juslin, 1996; Gabrielsson and Lindstom, 1995; Juslin, 1997a, 2000; Juslin and Madison, 1999; Ogushi and Hattori 1996a; Sundberg *et al.*, 1995). There are important inter-performer messages for co-ordination contained in the movement patterns too. Williamon and Davidson (2000) found that co-performers conform to another's intentions, including adapting to one another's bodily style and movement pattern to produce a synchronised and expressively equivalent musical whole. Furthermore, Davidson (2001) found very specific socio-cultural influences which determined the performer and audience's way of behaviour towards one other. For example, she observed how Annie Lennox's audience understood what she wanted of them, and how to respond in a manner that would conform to her wishes (*e.g.*, gesture for audience sing-along; requesting applause, etc). Frith (1996, p. 205) has claimed that "performance is a form of rhetoric, a rhetoric of gestures in which [...] bodily movement and signs [...] dominate other forms of communicative signs". Ashley

114

(2003) explored the use of physical space during performance, discovering that this had a significant effect on the "effectiveness" of the expressive musical communication (*e.g.* the relative position of one performer to another, or proximity to the audience).

Psychologists and sociologists have discussed the function of nonverbal behaviours for many decades (*e.g.* Argyle, 1975; Birdwhistell, 1970; Dittmann and Llewellyn, 1969; Patterson, 1983), but Ekman and Freisen (1981) have arguably provided the most extensive exploration of the different uses of nonverbal behaviours, identifying important functions, but mainly in relation to verbal communication.

SPECIFIC CATEGORIES OF NONVERBAL BEHAVIOURS TO BE USED IN THE CURRENT ANALYSIS OF MUSICAL PERFORMANCE

Ekman and Friesen (1981) have specified five categories of nonverbal behaviours used in verbal communication: *emblems*, *illustrators*, *regulators*, *affect displays* and *adaptors*. Davidson (2001) discovered most gestures and bodily movements in singing performance are associated with these categories (*e.g.* adaptive, regulatory, illustrative, and emblematic gestures). Therefore, it is evident that these are useful potential categories to describe movement function for the current investigation. Their definitions are as follows:

EMBLEMS
Ekman and Friesen specified the term emblem as a symbolic body movement that has high agreement with a direct verbal translation, or dictionary definition, and so can be replaced by a word or phrase. The meaning of an emblem is well shared by all members of a group, class, or culture. They can be seen in any area of the body such as facial movements in kissing, torso movements in bowing, arms movements in making the sign of a cross, or finger movements in a victory sign. A musical example would include the hand gestures of a rap performer such as when the arm raised is in front of the chest, with the index and fifth finger of the hand being outstretched and engaged in a hand flicking action. This has an emblematic function, identifying the type of performance being undertaken.

ILLUSTRATORS
Ekman and Friesen claimed that illustrators are used to illustrate the spoken message content, inflection and loudness, or rhythmically accent or trace ideas. They identified eight overlapping types of illustrators: *deictic movements* which point to indicate subjects; *batons* which accentuate words and phrases; *ideographs* which sketch the direction or trace ideas; *spatial movements* that represent spatial relationships between people, objects or ideas; *pictographs* to illustrate their meaning by drawing a picture of an event, objects or person; *kinetographs* to illustrate the

movement of a natural force, mechanical action or human action; *rhythmic movements* to illustrate the timing or rhythm of an event; and *emblematic movements* to repeat or substitutes for words. The rapper's emphatic rhythmically co-ordinated arm movements are likely to be illustrators, corresponding to accent, loudness, and meaning of the words in a song.

REGULATORS

Regulators are actions that maintain and regulate the flow and content of interactions. They usually relate to the speech exchanges, however they are not tied to specific fluctuations of speech, and are instead concerned with the pacing of the exchange. The most common regulator is, for instance, the head nod, eye contact, slight movements forward and small postural shifts. Music performance is a cooperative and coordinative event, thus performer and co-performer have to use such regulatory body movements. For example, in a jazz session, regulators such as head nods or eye contact are very important to exchange musical cues between players.

ADAPTORS

Adaptors are personal behaviours like habits, which are acquired as adaptive efforts at earlier stages of life, to satisfy self needs, or to perform bodily actions, or to control emotions, or to evolve and maintain interpersonal contacts, or to learn instrumental activities. Adaptors are triggered by feelings, attitudes, relationships and the environment associated with the learning of the adaptive pattern. Ekman and Friesen specified three types of adaptors: *Self-adaptors* which are learned in order to manage a variety of problems or needs (*e.g.* picking or scratching may be patterns of attacking the self), or to enhance or block sensory input and output (*e.g.*, covering ears or eyes by hands may be forms of blocking sensory input), or to perform bodily activities (*e.g.* wiping of the lips with the tongue), or to maintain body (*e.g.* grooming, cleansing, modifying). *Alter-directed-adaptors* are necessary to give or take from another individual (*e.g.* attacking or protecting oneself from others), or to develop affection and intimacy or withdraw and flight (*e.g.* showing invitation, flirtation, aggression). *Object-adaptors* are acquired in performances involving tools or objects (*e.g.* writing with a pen, smoking, using a telephone). A chanson singer's rocking motion coupled with the posture of wrapping the arms around the body may be a self-protective (*self-adaptor*) behaviour.

AFFECT DISPLAYS

These are facial and body expressions which reveal emotional states (*e.g.* smiling for joy, or a clenched fist showing anger). An encoder of affect displays may have considerable decoder response. For example, a decoder can experience the same emotional state of the encoder by observing, responding and reproducing the same affect displays for her/himself (*e.g.* Bush *et al.*, 1989; Hsee *et al.*, 1990; Hsee *et al.*,

1991; Lanzetta and Orr, 1986; Lanzetta and Orr, 1981). However, affect displays may or may not be appropriate to a particular setting, and are defined by culture, social class and family. Their primary function is to amplify, de-amplify, neutralize, blend, and mask. Hence, there are social norms about which display rule is appropriate for each affect when experienced by individuals of varying role, *e.g.* position, age and sex. In a rock performance, actions by performers or the audience such as jumping around on the stage or auditorium floor or diving off the stage into the audience are amplified affect gestures, which might be regarded as over-responding to or promoters of excitement in the performance context.

In addition to the Ekman and Friesen codes, the general nonverbal behaviour literature (see mainly Argyle, 1975, 1979) indicates that cues from the face such as degree of eye contact are also very important in interpersonal interactions. Therefore, these are now examined as we shall use them in the case study analysis of *u*.

FACIAL EXPRESSION

Apart from emotional display, Argyle (1975) proposed that there are different communicative uses of facial expressions. *Personality characteristics*: individuals are recognised most readily from their face, and their facial behaviour provides information about their personal characteristics. Therefore, facial expression can be viewed as a key to self-presentation. *Interaction signals*: Facial expression is important to offer feedback and synchronizing signals. There are social rules for such facial expressions governing the ritual involved in particular social settings. For example, in a soul singing performance, the singer might smile at the guitarist to indicate that she is happy with his playing.

GAZE

Pattern of gaze has an important role to establish interpersonal relationship and is used as an affiliate signal and to collect feedback (Argyle, 1975, 1979). A performer can also use gaze to observe audience response. Much decoding research has demonstrated that gaze is perceived as a signal for liking (Argyle, 1975; Burgoon and Saine, 1983). Thus, the signals of gaze can be used for manipulation in popular music performance. For instance, sending more gaze to a selected audience member may convey the impression that the performer likes him/her. Moreover, a difference of dominance or status also affects gaze (Argyle, 1975). Hence, gaze behaviour can be a signal from the audience to a performer that s/he is being seen as a dominant or powerful person.

POSTURE

Posture (general body alignment and stance) conveys information including interpersonal attitudes: liking/disliking, dominant/submissive, and tense/relaxed (*cf.* Argyle,1975; Mehrabian, 1972; Scheflen, 1965). Moreover, emotional states are

117

also identified by posture. Argyle (1975) suggested that there is a relationship between personality and posture, and posture may play a role in self-presentation. An example may be that a singer might adopt a slouched sitting posture when singing about a lost love.

TOUCH

Interpersonal attitudes and emotional states can be communicated by means of touch. Bodily contact has a primitive significance of heightened intimacy, and it produces increased emotional arousal (Argyle, 1975). Touch often conveys sexual signals and it also takes place in cultural conventions (greetings or ceremonies) which vary from culture to culture. The amount and type of touching is dependent upon the age, sex, and social relationship. There are several uses of bodily contact for communication: sex, aggression, nurturance-dependence, and affiliation. Also bodily contact is viewed in ceremonies as a means of producing symbolic acts. According to Argyle (1975), a pop fan's behaviour — wanting to touch the body or clothes of their favourite performer — indicates a spiritual meaning of bodily contact.

In light of the literature above, the objectives for this paper are: (1) to clarify what types of nonverbal behaviours are used in a case study popular music performance; (2) to examine whether or not the nonverbal behaviour categories suggested by Ekman and Friesen and Argyle describe all the nonverbal behaviours and their functions found within this case study; (3) to assess the relative importance of the nonverbal behaviours in this particular case study.

A CASE STUDY : THE CORRS

EMPIRICAL APPROACH

CHOICE OF BAND

The Corrs comprise four members: Andrea (lead vocal and tin whistle), Sharon (violin and second vocal), Caroline (drumkit, bodhran and second vocal) and Jim (guitars and keyboards). We could have considered any band to investigate their nonverbal behaviours in performance, however, we were particularly drawn to studying this band as all members are siblings, and all three females sing solos, though there is one "principal" soloist. This meant that we could explore whether changing roles within the band — sometimes one of the sisters leading the singing and at other times another leading — affected the types of nonverbal behaviour. Furthermore, as siblings, it might have been that similar repertoires of socially learned behaviours would have been used, since all came from the same family. Jim does not take a singing role, therefore, his individual performance is not analysed here.

CHOICE OF PERFORMANCE

The data were collected from the video-taped live performance *The Corrs at Lansdowne Road* (video reference, Warner: 8536-53120-3, made in 2000). It was essential to investigate live performance so that co-performer and performer-audience interactions could be studied. The Lansdowne Road performance was particularly appealing since the band is from Ireland, and therefore, potentially, the band would be socially and culturally attuned to their audience. Two songs were selected for analysis: a) *What can I do* which was sung by Andrea, and b) *No frontiers* sung as turn-taking solos and duo choruses by Sharon and Caroline. Both songs were of equivalent lengths (4'16" and 4'21", respectively), though of different tempi and dealing with a different type of emotional content. Both were in the familiar verse-chorus popular song form.

SONG ANALYSIS

For each song, a general musical and textual analysis was undertaken to provide a framework for understanding the types of nonverbal behaviours used in each song. Next, the movements of the different solo singers were the focus of the analysis. Ekman and Friesen's five types of nonverbal behaviours (*e.g.* emblems, illustrators, affect displays, regulators and adaptors) and Argyle's posture, visual gaze, touch and facial expressions were applied to the nonverbal behaviours for classification purposes. These data were collected from the introduction to the song to the end, and were recorded relative to the lines of the sung text and the musical bar. Additionally, and for comparative purpose, the frequency of the behaviours were tabulated.

 The analysis procedure involved both authors discussing and co-determining the musical features and text of the songs. Next, a discussion was undertaken to ensure that both authors understood what each category of nonverbal behaviour could include. Then, the first author analysed all the nonverbal data. The second author subsequently viewed a random selection of the analysed data for verification purposes. A third party was then invited to view the analysed performances to establish further whether or not the categorisations seemed appropriate. During this process, small modifications were undertaken, but the results presented in this paper represent an agreed set of nonverbal categorisation and frequencies.

RESULTS AND DISCUSSION

It is important to begin by reporting that all the nonverbal behaviours (NVB) identified in each song could be categorised according to the labels proposed by

119

Ekman and Friesen and Argyle, and these seemed to provide a complete description for each singer. The abbreviations of these descriptions are listed in Table 1.

1) *WHAT CAN I DO* BY ANDREA

The song is A major, in a moderate tempo, the metre being 4/4. The structure of the song consists of: Introduction - Verse 1 - Chorus - Verse 2 - Chorus - Instrumental Bridge - Verse 3 - Chorus -Instrumental End. A core rhythmic pattern consisting of units of dotted semi-quaver dominates the song, appearing in the accompaniment of the guitar part and melody line itself. The words relate to a lost love. The musical structure, lyrics and an explanation of the body movements, gaze, posture, touch and facial expression with their labels are described in Table 2.

Table 1
The list of Abbreviations used in Tables 2 and 3

Main types of NVB*	Sub-types of NVB	Individuals	Structure
A: adaptor	**ad**: alter-direct-adaptor	**C:**Caroline	**Br:**bridge
AD: affect display	**ba**: baton-illustrator	**S:** Sharon	**Ch:**chorus
E: emblem	**bm**: body movement		**En:**ending
I: illustrator	**em** :emblem-illustrator		**In:**introduction
R: regulator	**fe**: facial expression		**Ve:**verse
	ga: gaze		
	oa: object-adaptor		
	po: posture		
	rh: rhythm-illustrator		
	sa :self-adaptor		
	to: touch		

*NVB = Nonverbal behaviours

As far as Table 2 shows, Andrea used NVB to develop a relationship with the audience during the Introduction. She used *gaze*, glancing at the audience. They responded with loud cheers, and she then responded with *facial expression* as *affect display* by smiling and hand clapping (Emblem). Immediately, this demonstrates that NVBs were being used for interpersonal interaction, and to establish the nature of the relationship between the singer and the audience. Before she started to sing Verse 1, she demonstrated a provocative *affect display* in a Monroe-esque stance whilst using a pumping body action (*regulator*) to keep the rhythmic pulse. This use of NVB suggests that Andrea's attention was shifting slowly from audience concerns to the narrative context, in which she had to play a "heroine role" in the song, but that this behaviour was also intended to keep the audience's interest in her, as a sexual appealing woman.

In the first verse and chorus, Andrea used a number of *facial expressions* as *affect display*. The use of facial expressions in this section was evidently a display of emotional reactions to the narrative context of the song. It indicated that she took

Table 2

What Can I Do by *The Corrs* — sung by Andrea in 2000

	Bars	Chord	Lyric	Type of NVB	Description
In	1	(key in A) A A E/G# E/G#		AD:bm	walking in sideways
				A:ad:g	glancing at audience
				AD:fe	smiling
	2	D D E E		E	hand clapping
	3	A/C# A/C# E E			
	4	Bm7 Bm7 E E		AD:po	pausing Monroe-seque style
				R	controls own musical cues
Ve1	5	A A E/G# E/G#	I have'nt slept at all in		
	6	D D E E	days (You know!?)	AD:fe	smiling
	7	A/C# A/C# E E	It's been so long since we have	I:rh	raising arms
	8	Bm7 Bm7 E E	talked	I:rh	nodding
				R	turn back to co-musicians
	9	A A E/G# E/G#	And I have been here many		
	10	D D E E	times	AD:po	putting hands on waist
	11	A/C# A/C# E E	I just don't know what I'm doing	AD:fe	confusion
	12	Bm7 Bm7 E E	wrong	A:oa	leaning on microphone stand
Ch	13	A A E/G# E/G#	what can I do to make you	A:sa	combing hair with hand
	14	D D E E	love me	AD:fe	uncertainty
				I:ba	open arms
				AD:fe	seeking
	15	A/C# A/C# E E	What can I do to make you	R	keeping rhythm
	16	Bm7 Bm7 E E	care	A:oa	holding microphone
	17	A A E/G# E/G#	What can I say to make you	I:rh	nodding
	18	D D E E	feel this		
	19	A/C# A/C# E E	what can I do to get you	AD:fe	confusion
	20	Bm7 Bm7 E E	there	E	crossing arms across chest on shoulders
				AD:ob	taking microphone off stand
				AD:bm	stepping back & jumping
				AD:fe	unhappiness
Ve2	21	A A E/G# E/G#	There's only so much I can	AD:bm	walking with rhythm to the left side of the stage
				I:ba	reaching with the left hand
	22	D D E E	take		
	23	A/C# A/C# E E	And I just got let it go		
	24	Bm7 Bm7 E E			
	25	A A E/G# E/G#	And who knows I might feel		
	26	D D E E	better		
	27	A/C# A/C# E E	If I don't try and I don't		
	28	Bm7 Bm7 E E	hope		
Ch	29	A A E/G# E/G#	What can I do to make you	A:ad:po	crouching down towards audience
	30	D D E E	love me	R:po	standing up
				I:rh	raising arms
	31	A/C# A/C# E E	what can I do to make you		
	32	Bm7 Bm7 E E	care	AD:bm	skipping on the stage
				I:rh	opening arms on beat
	33	A A E/G# E/G#	what can I say to make you	AD:bm	sideways walking
	34	D D E E	feel this (ah ya-ya	I:ba	raising her left arm
				AD:bm	walking to the edge of the stage
				I:rh	movement of left hand
	35	A/C# A/C# E E	ya) what can I do to get you		
	36	Bm7 Bm7 E E	there	AD:bm	running
				I:rh	opening arms
Br	37	F#m7 F#m7 F#m7 F#m7	No more waiting,		
	38	F#m7 F#m7 F#m7 F#m7	no more aching		
	39	DM7 DM7 E E			
	40	Esus Esus E E		R	moving back to starting position
	41	F#m7 F#m7 F#m7 F#m7	No more fighting,		
	42	F#m7 F#m7 F#m7 F#m7	no more trying		
	43	DM7 DM7 E E		A:ad:po	leaning to audience
	44	Esus Esus E E		I:em	shaking head
				I:em	raising arms
Ve3	45	A A E/G# E/G#	Maybe there's nothing more to		
	46	D D E E	say	A:sa	licking lips
				AD:fe	smiling
	47	A/C# A/C# E E	And in a (funny way I'm)		
	48	Bm7 Bm7 E E	calm)	E	inviting audience to sing
	49	A A E/G# E/G#	(Because the power is not	I:rh	pushing arm
	50	D D E E	mine)	I:em	hand movment
	51	A/C# A/C# E E	(I'm just going to let it	AD:bm	spinning round
				E	arm gesture:flying
	52	Bm7 Bm7 E E	fly)	AD:bm	running and stopping

121

Ch	53	*A A E/G# E/G#*	What can I do to make you			
	54	*D D E E*	love me			
	55	*A/C# A/C# E E*	What can I do to make you			
	56	*Bm7 Bm7 E E*	care			
	57	*A A E/G# E/G#*	What can I ay to make you			
	58	*D D E E*	feel this			
	59	*A/C# A/C# E E*	What can I do to get you	I:rh R	raising her left arm control beat
	60	*Bm7 Bm7 E E*	there	I:ba	arm movement
	61	*A A E/G# E/G#*	What can I do to make you			
	62	*D D E E*	love me			
	63	*A/C# A/C# E E*	What can I do to make you			
	64	*Bm7 Bm7 E E*	care			
	65	*A A E/G# E/G#*	What can I do to make you			
	66	*D D E E*	feel this			
	67	*A/C# A/C# E E*	what can I do to get you			
	68	*Bm7 Bm7 E E*	there			
En	69	*DM7 DM7 E E*	love me			
	70	*F#m7 F#m7 E/G# E/G#*				
	71	*DM7 DM7 E E*	love me			
	72	*F#m7 F#m7 E/G# E/G#*				
	73	*DM7 DM7 E E*	love me	E	hand gesture:come on
	74	*F#m7 F#m7 E/G# E/G#*		E	pointing index finger
	75	*DM7 DM7 E E*	love me			
	76	*F#m7 F#m7 E/G# E/G#*		I:rh	open arms
	77	*DM7 DM7 E E*	love me			
	78	*F#m7 F#m7 E/G# E/G#*				
	79	*DM7 DM7 E E*	love me			
	80	*E*				

on the character of the heroine of the song. She showed an emotional state of "the role" through her face. She used *posture* as *affect display* in the forth line of the verse 1, corresponding to the emotional context of "being at a loss" through her body. Moreover, she used a lot of arm movements, *illustrators — rhythm* and *baton —* to trace the rhythmical transmission and to accent words and phrases.

Of course, as Andrea sang, she had to process a lot of information (*e.g.*, voice, pitch, volume, notes, rhythm, words, and motor systems), and find ways to control and manipulate these elements. It appears that the *illustrator* gesture may have been helping to control such a complex network system. Thus by using *illustrators*, Andrea could be said to be maintaining and even enhancing her self-presentation and control of the performance. The use of *regulators* frequently emerged in this section, apparently, because it is the beginning of the song where Andrea needed to establish the flow of events.

Andrea used more *affect displays*, *illustrator* and *posture* during the second chorus and instrumental bridge section. It seems that the NVB corresponds to the peak of the song in terms of the narrative and music. We regard this part as the structural peak since in the previous verse and chorus, the same chord patterns were used (I-V/VII-IV-V,I/III-V-IIm7-V), however from the bridge to the end, a change of chord appeared (VIm7-IVmajor7-V-Vsus-V), and (IVmajor7-V-VIm7-V/VII). In the bridge section, the main melody is a descending pattern of notes, and a crotchet figure dominates the rhythm instead of a dotted semi-quaver.

It is clear that the narrative context and standard popular song form determines the musical structure. This is the story of a woman in trouble because of a man who does not seem to love her. In the first verse and chorus section, her circumstances,

feelings and emotion are described. In the bridge section, her intention is revealed, thus this is the key part of the song. So we are musically prepared for the final verse and the closing narrative that she is to give up hope of attaining his love. However, at the end of the song, as she still loves him, she explains that her heart is still breaking. In accordance with these peaks of the song, Andrea showed increasingly large movements, involving all of her body, and displayed dynamic and lively movements such as changing *posture*, moving around the stage by walking, running, and skipping, and using arm movements. The use of *affect display* seems to engage and react to the rhythmic stimulus for cueing units of musical and narrative structure, and to transfer an emotional presentation to the audience. The *postures* were perhaps being used for similar purposes as the *affect display*, however they seemed to express even more strongly her intention to communicate with the audience.

Emblems were used to send narrative messages directly to the audience. For example, in the last line of Verse 3 — "I'm just going to let it fly" — she used an arm gesture suggesting the movement of wings synchronised with the narrative concept of flying. Hence, NVB here seems to reveal her interpretation of the song. At the end of the song, the use of *emblem* seems to correlate with a direct audience interaction. Indeed, the emotional height of Andrea's performance was seemingly expressed as emblematic movements to the audience. For instance, her hand gesture which was read by the audience as a "come on" invited them to cheer. This NVB can be seen, therefore, to be used by her for an interactional, albeit manipulative purpose.

2) *NO FRONTIERS SUNG BY SHARON AND CAROLINE IN TURN*
Table 3 shows the location and categorisation of the nonverbal behaviours relative to the musical structure and the lyrics.

Table 3
No Frontiers by The Corrs — sung by Sharon Caroline in 2000

Bars		Chord	Singer/Lyric	Performer	Type of NVB	Description
				S&C	A:sa:po	sitting
				C	R:ga	looking at co-musician
				C	AD:fe	Smiling
				C	R:ga	looking at Sharon
				C	A:oa	touching microphone
				S	AD:fe	Smiling
In	1	(key in C) F9 F9 F9 C/G		S	R:ga	looking at co-musician
				S	A:oa	holding a microphone
				C	E	waving fingers
				C	A:sa:po	crossing legs
	2	F9 F9 F9 C/G		C	A:sa	combing hair with hand
				C	R:ga	looking at Sharon
				S	A:sa	head down,concentrated
Ve1	3	F9 F9 F9 C/G	S/ If life is a river and your			
	4	F9 F9 Dm7 Dm7 G7	heart is a boat	S	A:sa	shaking head softly
	5	C C Am Am	And just like a water baby,baby			
	6	Dm7 Dm7 G G	born to float			
	7	F9 F9 C/E C/E	And if life is a wild wind that			

123

	8	F9 F9 Dm7 Dm7 G7	blows way on high			
	9	C C Am Am	Then your heart is Amelia	S	R	taking hands gently off the microphone
	10	Dm7 Dm7 G G	dying fly			
	11	F F G G	Heaven knows	S	AD:fe	smiling
	12	Edim Edim A7 A7	No frontiers	S	S/I:ba	open hands movements
	13	Dm7 Dm7 G7 G7	And I've seen heaven in your			
	14	F9 F9 C/G C/G	eyes			
Ve2	15	F9 F9 C/E C/E	C/And if life is a bar room in which	C	C/AD:fe	smiling
	16	F9 F9 Dm7 Dm7 G7	you must wait	S	S/R	keeping rhythm on leg
	17	C C Am Am	Round the man with fingers on the	C	C/R	moving shoulder
	18	Dm7 Dm7 G G	ivory gates			
	19	F9 F9 C/E C/E	where we sing until dawn of our			
	20	F9 F9 Dm7 Dm7 G7	fears and fates			
	21	C C Am Am	And we stack all the dead men in			
	22	Dm7 Dm7 G7 G7	self-addressed crates, in your			
Ch	23	C9 C9 C/G C/G	S&C/eyes faint as the singing of a	S	R	control rhythm
	24	G G Fdim Fdim	lark That somhow this black	C	R:ga	looking at Sharon
	25	Am Am Dm7 G7	night feels warmer for the			
	26	C C Dm7 G7	spark, warmer for the			
	27	C9 C9 C/G C/G	spark to hold us 'til the			
	28	G G Fdim Fdim	day when fear will lose its	S	I:ba	head movement
	29	Am Am Dm7 G7	grip and heaven has its			
	30	F F G G	way heaven knows			
	31	Edim Edim A7 A7	No frontiers			
	32	Dm7 Dm7 G7 G7	And I've seen heaven in your			
	33	F9 F9 C/G C/G	eyes			
Ve3	34	F9 F9 C/E C/E	S/ if your life is a rough bed of	C	C/R:ga	looking at Sharon
	35	F9 F9 Dm7 Dm7 G7	brambles and nails			
	36	C C Am Am	And your sprit's a slave to man's	S	S/AD:fe	Sadness
	37	Dm7 Dm7 G7 G7	whips and man's jails			
	38	F9 F9 C/E C/E	C/ Where your thirst and your hunger			
	39	F9 F9 Dm7 Dm7 G7	for justice and right			
	40	C C Am Am	Then your heart is a pure flame of man's			
	41	Dm7 Dm7 G7 G7	constant night In your			
Ch	42	C9 C9 C/G C/G	S&C/eyes faint as the singing of a			
	43	G G Fdim Fdim	lark That somhow this black			
	44	Am Am Dm7 G7	night feels warmer for the			
	45	C C Dm7 G7	spark warmer for the			
	46	C9 C9 C/G C/G	spark to hold us 'til the	S	I:ba	hand movement
	47	G G Fdim Fdim	day when fear will lose its			
	48	Am Am Dm7 G7	grip and heaven has its			
	49	F F G G	way heaven knows	C	R:ga	looking at Sharon
				S	R	touching the microphone
				S&C	R:ga	looking at one another
	50	Edim Edim A7 A7	No frontiers			
	51	Dm7 Dm7 G7 G7	And I've seen heaven in your			
	52	F F G G	eyes Heaven knows			
	53	Edim Edim A7 A7	No frontiers			
	54	Dm7 Dm7 G7 G7	And I've seen heaven in your			
En	55	F9 F9 F9 C/G	eyes	S	I:ba	open and raising arms
				S&C	AD:fe	smiling
	56	C		S&C	A:ad:po	standing up
				S&C	A:ad:ga	looking at each other
				S&C	A:ad:to	hand in hand
				S&C	E	bowing
				S&C	AD:fe	Smiling
				S&C	A:ad:ga	looking at each other

The key of the song is C major, it is a ballad in a slow tempo in 4/4 metre. There is a simple accompaniment on the piano only. The structure of the song consists of: Introduction - Verse 1 - Verse 2 - Chorus - Verse 3 - Chorus - Ending. The

124

women sing the song in turn, during the verses 1, 2 and 3, but sing together in the two choruses.

From the introduction to the end, both performers sit on chairs. Their *posture* (*e.g.*, sitting) could be determined by the style and nature of the song. For instance, this song is slow tempo and low volume, and that might therefore imply few and slowly paced body movements. So, *posture*, rate and quantity of body movement could be regarded as sources of information about musical style and content.

No frontiers was based on an acoustic arrangement; with no percussion and no electric instruments. Therefore, there is an essential difference in terms of the acoustics between *What can I do* and *No frontiers*. The former involves powerful orchestration during the peak parts of the song, whereas the latter is less dynamic during the chorus sections. It may be because the narrative context of the latter song is more calm, poetic and metaphorical than that of first song. That is, it seems that the nature of the music is reflected in the performer's expression and interpretation which appear as NVBs.

At the end of their song, Sharon and Caroline showed larger body movements; *posture*, *gaze*, *touch*, *emblem* and *facial expression*. They used NVB to show their emotional states: pleasure, thankfulness, and satisfaction to the audience. Also, they present their interpersonal relationship by using hand gestures and looking at each other. These NVBs were demonstrated apart from the musical context. Hence, NVB reflected their personal interaction as well.

Tables 4, 5 and 6 show the number of nonverbal behaviours. In *No Frontiers* the performance actually totalled 37 identified moments in the song where NVBs were used. That is, although there were 24 individual movements from Sharon, and 22 from Caroline, 9 happened as interactive (between the two singers) gestures during the choruses. Thus, this is a smaller total number of NVBs than in Andrea's performance, which was 56. As mentioned earlier, the songs were of approximately the same lengths, but the tempi were very different, and as a consequence, it seems that Andrea was moving more rapidly and presenting more NVBs. But, additionally, we would note that Andrea generally seems far more confident and comfortable making bodily movement on the stage.

In short, we have found that three performers, Andrea, Sharon and Caroline showed a variety of types of NVBs in each performance, which could be classified as *emblem*, *affect display*, *regulator*, *illustrator*, and *adaptors*. They also used *facial expression*, *gaze*, *touch*, and *posture*. It was discovered that the choice and rate of use of NVB reflected the musical nature and narrative context of the songs, and structure of the songs. However, at the same time, the particular NVBs could be seen to depend upon the individual (Andrea being more movement-oriented) and her perceived performance role, alongside some interpersonal relationships which operate during the performance: sisters and co-performers, the performer-audience dynamic. It is also worth emphasising at this point that we did not find any shared repertoires of NVBs that might demonstrate a similarity in movement content and style. That is, a shared style of movement. These are sisters, but they did not move in the same

way on stage, despite an incredibly strong facial and overall physical resemblance.

   The literature reviewed at the start of this article demonstrated that NVB depends on the performer's experience, aptitude and familiarity with the style. Therefore, some NVBs could also regarded as self-*adaptors* (for example to ease their anxiety), or in the case of sitting relatively still, it could reveal less confidence in dealing with the body when singing. We raise these points for they seem relevant to the two singers involved in *No frontiers* and we shall elaborate on them further in the next section of our discussion.

<div align="center">Table 4</div>

The types and frequency of nonverbal behaviours in the performance of *What can I do* by Andrea in 2000

NB = Number of nonverbal behaviours
BM = body movements; FE = facial expressions; P = posture

	Main Type	Sub-type	NB	Total	%
1	Affect display	BM	9	19	33.9
		FE	8		
		P	2		
2	Illustrator	Rhythm	10	17	30.4
		Baton	4		
		Emblem	3		
3	Adaptor	Self	2	8	14.3
		Alter-direct	3		
		Object	3		
4	Regulator		6	6	10.7
5	Emblem		6	6	10.7
	Total		56	56	100

<div align="center">Table 5</div>

The types and frequency of nonverbal behaviours in the performance of *No Frontiers* by Sharon in 2000

* NB = the numbers of nonverbal behaviour; FE = facial expression

	Main Type	Sub-type	NB	Total	%
1	Adaptor	Self	3	8	33.3
		Alter-direct	4		
		Object	1		
2	Regulator	Gaze	2	6	25.0
		Others	4		
3	Affect display	FE	5	5	20.8
4	Illustrator	Baton	4	4	16.7
5	Emblem		1	1	4.2
	Total		24	24	100

<div align="center">**126**</div>

Table 6
The types and frequency of nonverbal behaviours in the performance of
***No Frontiers* by Caroline in 2000**

	Main Type	Sub-type	NB	Total	%
1	Regulator	Gaze	7	8	36.4
		Others	1		
1	Adaptor	Self	3	8	36.4
		Alter-direct	4		
		Object	1		
3	Affect display	FE	4	4	18.1
4	Emblem		2	2	9.1
5	Illustrator		0	0	0
	Total		22	22	100

ROLE, PERSONALITY AND INTERPERSONAL RELATIONSHIP: INTERPRETATIVE POSSIBILITIES

(1) ANDREA

In the case of Andrea, evidently she has her own personal characteristics and behavioural traits which interact alongside her roles as a lead vocalist in the band, a younger sister, a female, as an Irish person, and as a popular star. It seems that in the Introduction (see Table 2) of her song, for example, Andrea used *Gaze*, to function as an *alter-direct-adaptor* in order to draw attention to her from the audience, in a provocative and dominant manner. It suggests that she wants to take initiatives or be in control as a lead vocalist. As a result, the audience responded and cheered, then she used *facial expression*; *smiling* as *affect display* to show she was happy and pleased with the audience in this situation. It seems that there are affect rules she has learnt through former experiences. It seems that she may want to play pleasant, friendly and gentle role and also have control over her audience. The NVB apparently projects what she believes, judges, and wants to present about herself.

Table 4 shows the types and frequency of nonverbal behaviours in the performance of *What can I Do* by Andrea. To some extent, the frequency of nonverbal behaviour could suggest the characteristics of the nonverbal communication in this particular performer. Prominently, Andrea's performance demonstrated 33.9% *affect display* and 30.4% *illustrator*. The high percentage of the use of *affect display* indicates that she tends to evoke emotional material from the musical and narrative context and from the audience. In other words, she amplifies emotional expressions through body movements and facial expressions. In the use of *illustrator*, *rhythm* appears in the highest frequency (see Table 4). It suggests that Andrea used controlling actions to manipulate her performance. Thus, it seems that she demonstrates some characteristics of herself as a mediator, exhibitor and manipulator.

127

Andrea also makes use of the interactive possibilities of NVB. For example, in the line 2 of verse 3 (see Table 2), she suddenly smiled as *affect display*, and stopped singing. Next, she used *emblem* to invite the audience to sing. The audience immediately acted upon the cue and began to sing the lines loudly instead of Andrea, who conducted them by using *illustrator*. It seems that she manipulated the audience to enhance their participation.

The occurrence of 10.7% *Regulator* indicates that she used some self-regulation and coordinative actions with co-performers in order to accomplish the flow of the performance.

Amongst the use of *adaptor* (only 8), 3 *self-adaptors* seemed few. It can be said that other NVBs like *illustrator* or *regulator* may have substituted for self-adaptive behaviours to avoid showing obvious inner conditions and idiosyncratic behaviours. The social setting of this performance where Andrea was exposed in front of the public may have affected the use of NVB.

A conclusion that may be drawn from these data is that Andrea has a confident, public stage presence. She seems to be experienced in the manipulation of her audience, the narrative content of the song, and co-ordinates with her co-performers and audience with fluency. She does not, however, reveal many "inner" or more personal states.

(2) Sharon and Caroline

These sisters have differently identified roles within the family and the band. Sharon is the eldest sister, and a solo violin player in the band. Caroline is a co-player as a drummer, and the middle sister. In *No Frontiers*, of her total of NVBs, Sharon used 33.3% *adaptor* and 25.0 % *regulator*, and 20.8% *affect display* (see Table 5). On the other hand, Caroline's performance comprised 36.4% *regulator*, 36.4% *adaptor*, 18.1% *affect display*, and 0% *illustrator* (see Table 6). Considering the fact that both Sharon and Caroline performed the same song for the same amount of time, the distinction in frequency of NVBs for each performer seems to highlight their individual characteristics. For example, Sharon used the largest number of *adaptors*, in particular *self-adaptors*, which might indicate that she needed a considerable degree of self-maintenance and concentration. The use of *regulators* in the Sharon's performance had a greater frequency as well. It suggests that Sharon tries to control herself and to cooperate with her co-performers to produce the musical activity smoothly. This could mirror her position as eldest sister, having perhaps more disciplined characteristics that her younger siblings.

In comparison to Sharon, Caroline also used a high percentage of *regulator*, however, interestingly, a remarkable distinction is shown on the number of *gaze* as *regulator* NVBs in the performance of Sharon and Caroline. Caroline used more gaze behaviour than Sharon did. It appears that the difference of role and personality may reflect the difference of frequency in *gaze*. It could be said that Caroline's role as a drummer requires more nonverbal signals such as eye contact,

nodding and hand movement during a performance to cooperate and coordinate with co-performers. Furthermore, her role within the sibling relationship may have induced her particular characteristics. The younger tends to rely on the older (see Byng-Hall, 1995). Caroline's gaze may have been a signal to Sharon for support, or an instruction, or a means to ease her own tension or anxiety. For instance, she showed a crossed leg posture as a self-adaptor in the earlier part of the song, perhaps indicating that she was trying to relax and calm herself. However she may not have decreased her anxiety level because the *gaze* behaviours were constant throughout the song, evidently seeking Sharon's signals. Interestingly, Caroline has described herself as a shy person (http://www.thecorrswebsite.com accessed November 2003). Thus, the prominent use of *gaze* might reflect her personality as an introverted individual.

In the performance of Sharon and Caroline, *affect display* as *facial expression* were the third most common NVB. It seems, therefore, they used affect display to express their own emotional feeling or response to the audience, rather than expressing interpretative emotion from the song. These results may have been both because of the musical characteristics and their perceived performer and personal role differences. It seems that no use of the *illustrator* gesture may reveal Caroline's perception of her role, that is, as a drummer, she might not be concerned with using her arms or hands without her drumsticks as an illustrator. It may be that her role as drummer requires a greater concern for the manipulation of instruments in order to create their sounds, which differs from the role of solo singer. In addition, *gaze* exchanges used as *regulators* by Sharon and Caroline also might indicate the nature of their relationship in the cooperative process. It seems that the performance of their song is a collaborative production, relying on interactive signals. Furthermore, Sharon and Caroline presented a friendly interpersonal relationship by demonstrating *alter-direct-adaptor*: *touch*, *gaze exchanging* and *emblem* to achieve a greater positive reaction of liking from an audience as manipulators. Such signals may be useful to promote a positive group presentation, with associated business connotations.

Seemingly, there are positive relationships between the role, personality, social environment and NVB in popular music performance. Having a different role, each singer expressed NVB in distinctive ways. The principal singer, Andrea was the most extraverted and seemed to enjoy her role as a mediator, providing musical and narrative information to the audience is a crucial purpose. Also, her self-presentation to the audience was very exhibitionist, maintaining a projected image of herself and developing a controlling relationship with the audience. In contrast, Sharon tends to be a self-controller, exhibitor and manipulator; whilst, Caroline seems to be a co-operator, with a more dependent and introverted type of personality. Thus, NVB reveals individual distinctiveness and the characteristics of the group as well.

Conclusion

This case study of *The Corrs* demonstrates that the repertoire of nonverbal behaviours of popular singers in their live music performance can be identified and categorized according to Ekman and Friesen's classification of emblem, illustrator, affect display, regulator, and adaptor. We also found that categories identified by Argyle of facial expression, posture, gaze, and touch were useful, though it seems that each one of these movement types could be described according to Ekman and Friesen's categories. For example, gaze as an example of an *emblem*. It was discovered that the performers selected and used NVB according to musical context, structure and description of the songs, personality, role and social factors associated with coordination and display. Therefore, we believe that nonverbal behaviours in popular music performance have important functions: to contribute to the performer's self-control in order to produce the musical activity; to provide musical and narrative messages; to reveal personal characteristics; to demonstrate emotion and to manipulate the performer's self-presentation and inter-personal relationships.

By categorising the popular performers' nonverbal behaviours, the process of popular music performance involving sounds, words, forms, the performers and the audience was clarified. In other words, by depicting how popular performers use their bodies to create a musical production we could gain some insights into popular music performance and how it operates.

However, this paper is based on a single case of a band, and was centred upon the categorization of nonverbal behaviours and identification of their functions in only two performances. It is important to point out that in order to identify and categorize musical behaviours more generally, a series of performances across a range of performers is necessary. Further study is needed, therefore, to examine more and different cases, and even other styles of popular music performance. It is also crucial to investigate the audience more specifically, and to explore how they watch, judge and react to their performers in popular music.

This paper only begins to address the important topic of nonverbal behaviour in music, however, as a starting point, it has shown how central the performer's movements are to their conception and realisation of the performance[1].

(1) **Address for correspondence:**
Kaori Kurosawa and Jane W. Davidson
Department of Music
University of Sheffield
38 Taptonville Road
S10 5BR
U.K.
e-mails: k.kurosawa@sheffield.ac.uk
          j.w.davidson@sheffield.ac.uk

• REFERENCES

Argyle, M. (1975). *Bodily communication*. London: Methuen.

Argyle, M. (1979). New developments in the analysis of social skills. In A. Wolfgang (ed.), *Nonverbal behaviour* (pp. 139-58). New York: Academic Press.

Ashley, R. (2003). Spatial elements of meaning in musicians' body movements: Pragmatic and semantic dimensions. *Paper presented at the International Conference on Music and Gesture.* Norwich: University of East Anglia, August.

Behrens, G .A., & Green, S. B. (1993). The ability to identity emotional content of solo impro-visations performed vocally and on three different instruments. *Psychology of Music*, *21*, 20-33.

Benjamin, W. (1970). Das Kunstwerk Im Zeitalter Seiner Technischen. In *Werke band 2*. Tokyo: Shobun-Sha

Berland, J. (1993). Sound, image and social space: music video and media reconstruction. In S. Frith., A. Goodwin and L. Grossberg (eds), *Sound and Vision : The Music Video Reader* (pp. 25-44). London: Routledge.

Birdwhistell, R. L. (1970). *Kinesics and Context*. Philadelphia: University of Pennsylvania Press.

Boone, R. T. (2001). Children's expression of emotional meaning in music through expressive body movement. *Journal of Nonverbal Behaviour*, *25(1)*, 21-41.

Burgoon, J. K., & Saine, T. (1978). *The unspoken dialogue*. Boston: Houghton Mifflin.

Bush, L. K., Barr, C. L., McHugo, G. J., & Lanzetta, J. T. (1989). The effects of facial control and facial mimicry on subjective reactions to comedy routines. *Motivation and Emotion*, *13*, 31-51.

Byng-Hall, J. (1995). *Rewriting Family Scripts*. New York: Guildford Press.

Davidson, J. W. (1993). Visual perception of performance manner in the movements of solo musicians. *Psychology of Music*, *21*, 103-13.

Davidson, J. W. (1997). The social in musical performance. In D. J. Hargreaves and A. C. North (eds), *The Social Psychology of Music* (pp. 209-28). Oxford: Oxford University Press.

Davidson, J. W. (2001). The role of the body in the production and perception of solo vocal performance: A case study of Annie Lennox. *Musicæ Scientiæ*, *5(2)*,235-56.

Davidson, J. W. (in press). A "moving musician": Exploring the stage performance of Robbie Williams. In A. Gritten and E. C. King (eds), *Music and Gesture*. Aldershott: Ashgate.

De Nora, T. (2000). *Music in Everyday Life*. Cambridge: Cambridge University Press.

Dittmann A .T., & Lllewellyn, L. G. (1969). Body movement and speech rhythm in social con-versation. *Journal of Personality and Social Psychology*, *11*, 98-106.

Efron, D. (1941). *Gesture and Environment*. New York: King's Crown Press.

Ekman, P., & Friesen, W. V. (1981). The repertoire of nonverbal behaviour. In A. Kendon (ed.), *Nonverbal Communication, Interaction and Gesture* (pp. 57-106). Nertherlands: Mouton.

Fiske, J. (1989). *Reading the Popular*. London: Routledge.

Frith, S. (1981). *Sound Effects: Youth, Leisure and the Politics of Rock'n'Roll*. New York: Pantheon.

Frith, S. (1987). Why do songs have words? In A. L.White (ed.), *Lost in Music: Culture, Style and the Musical Event* (pp. 77-106). London: Routledge.

Frith, S. (1993). Youth/Music/Television. In S. Frith., A. Goodwin and L. Grossberg (eds), *Sound and Vision : The Music Video reader* (pp. 67-84). London: Routledge.

Frith, S. (1996). *Performing Rites*. Oxford: Oxford University Press.

Gabrielsson, A., & Juslin, P. N. (1996). Emotional expression in music performance: Between the performer's intention and the listener's experience. *Psychology of Music*, *24*, 68-91.

Gabrielsson, A., & Lindström, E. (1995). Emotional expression in synthesizer and sentograph performance. *Psychomusicology*, *14*, 94-116.

Gaston, E. T. (1968). *Music in Therapy*. New York: MacMillan.

Hatten, R. (2003). A theory of musical gesture and its application. Keynote address at First international Conference on Music and Gesture, University of East Anglia, U.K, 28-31 August.

Hsee C.K., Hatfield, E., Carlson J.G., & Chemtob, C. (1990). The effects of power on susceptibility to emotional contagion. *Cognition and Emotion*, *4*, 327-40.

Hsee C.K., Hatfield, E., & Chemtob, C. (1991). Assesments of the emotional states of others: conscious judgements versus emotional contagion. *Journal of Social and Clinical Psychology*, *11*, 119-28.

Juslin, P. N. (2001). Communicating emotion in music performance: A review and theoretical framework. In P. N. Juslin and J. A. Sloboda (eds), *Music and Emotion: Theory and research* (pp. 309-40). Oxford: Oxford University Press.

Juslin, P. N. (1997). Emotional communication in music performance: A functionalist perspective and some data. *Music Perception*, *14*, 383-418.

Juslin, P. N. (2000). Cue utilization in communication of emotion in music performance: Relating performance to perception. *Journal of Experimental Psychology: Human Perception and Performance*, *26*, 1797-813.

Juslin, P. N., & Madison, G. (1999). The role of timing patterns in recognition of emotional expression from musical performance. *Music Perception*, *17*, 197-221.

Kotlyar, G. M., & Morozov, V. P. (1976). Acoustic correlates of the emotional content of vocalized speech. *Soviet Physics & Acoustics*, *22*, 370-6.

Kurosawa, K. (2002). Comparison of the uses of and participation in music in both Northern Europe and Japanese. *Unpublished Master of Arts dissertation. University of Sheffield.*

Lanzetta, J. T., & Orr, S. P. (1981). Stimulus properties of facial expressions and their influence on the classical conditioning of fear. *Motivation and Emotion*, *5*, 225-34.

Lanzetta, J. T., & Orr, S. P. (1986). Excitatory strength of expressive faces: Effects of happy and fear expression and context on the extinction of a conditional fear response. *Journal of Personality and Social Psychology*, 50, 190-94.

Malloch, S. N. (1999/2000). Mothers and infants and communicative musicality. *Musicæ Scientiæ*, *Special Issue*, 29-57.

Mehrabian, A. (1972). *Nonverbal Communication*. Chicago: Aldine-Atherton.

Merriam, A. P. (1964). *The Anthropology of Music*. Evanston, Illinois: Northwestern University Press.

Middleton, R. (1981). *"Reading" Popular Music*. Open University Course: U203 Popular Culture, Unit 16. Milton Keynes: Open University Press.

Middleton, R. (1990). *Studying Popular Music*. Milton Keynes: Open University Press

Ogushi, K., & Hattori, M. (1996a). Emotional communication in performance of vocal music. In B. Pennycook and E. Costa-Giomi (eds), *Proceedings of the Fourth International Conference on Music Perception and Cognition* (pp. 269-74). Montreal: MacGill University.

Patterson, M. L. (1983). *Nonverbal Behaviour: A functional Perspective*. New York: Springer Verlag.

Sheflen, A. E. (1965). Quasi-Courtship behaviour of psychotherapy. *Psychiatry*, *28*, 245-56.

Sloboda, J. A. (1996). The acquisition of musical expressivity. In K. A. Ericsson (ed.), *The road to excellence* (pp. 107-26). Mahwah, N J: Erlbaum.

Sloboda, J. A. (1998). Musical performance and emotion: Issues and developments. In S. W. Yi (ed.), Proceedings of the Fifth International Conference on Music Perception and Cognition (pp. 21-5). Seoul: Seoul National University.

Sundberg, J., Iwarsson, J., & Hagegård, H. (1995). A singer's expression of emotions in sung performance. In O. Fujimura and M. Hirano (eds), *Vocal Fold Physiology: Voice Quality Control* (pp. 2217-29). San Diego, CA: Singular Press.

Tagg, P. (1982). Analysing popular music: Theory, method and practice. *Popular Music*, *2*, 37-67.

Watanabe, J. (2000). *Indentity no Ongaku.* Kyoto: Sekaishisosha.

Watzlawick, P., & Beavin, J. H. (1967). Some formal aspects of communication. *American Behavioral Scientist*, *10*, 4-8.

Wiener, M., Devoe, S., Robinson, S., & Geller, J. (1972). Nonverbal behaviour and nonverbal communication. *Psychological Review*, *79*, 185-214.

Williamon, A., & Davidson, J. W. (2000). Coordinating duo piano performance. In C. Woods, G. B. Luck, R. Brochard, S. A. O'Neill and J. A. Sloboda (eds), *Proceedings of the Sixth International Conference on Music and Cognition*, CD-ROM. Keele, UK: Department of Psychology.

• Comportamientos no verbales en la interpretación de música popular : un caso de estudio de *The Corrs*

El objetivo de este estudio era investigar el comportamiento no verbal del intérprete de música popular para entender el empleo y las funciones de los gestos, posturas y expresión facial. Con este fin, el estudio comienza con una revisión de relevantes investigaciones psicológicas y sociológicas, incluyendo las categorizaciones no verbales de comportamiento de Ekman, Friesen y Argyle. Partiendo de estas categorías específicas, se proponen las funciones del comportamiento no verbal de la música popular. Éstas incluyen: mantener el autocontrol del intérprete; proporcionar información musical, narrativa, emocional y personal; regular y manipular las relaciones entre intérprete, co-intérprete y audiencia. La investigación se centra en un caso de estudio de *The Corrs*, y tiene como fin observar dos grabaciones comerciales de interpretaciones en directo de la banda. Las canciones demuestran que dentro de la banda, tres de los cuatro miembros cantan solos. En la primera interpretación, *What can I do?* es cantado por Andrea (principal vocalista) y en la segunda interpretación, *No frontiers* es interpretado por Sharon y Caroline. Centrándose en los solistas, todos sus comportamientos no verbales son clasificados en términos de categorías (por ejemplo, emblema, ilustrador, regulador, adaptador o muestra de un efecto) y frecuencia del comportamiento. Los resultados demuestran que las categorizaciones de Ekman, Friesen y Argyle proporcionan una completa descripción de los comportamientos no verbales encontrados en las interpretaciones. Por otra parte, los análisis revelan diferencias individuales entre las dos canciones. Con tales descubrimientos, el trabajo concluye que los comportamientos no verbales en este tipo de interpretaciones son cruciales para el desarrollo, producción y percepción de la interpretación musical. Aunque de forma preliminar, el estudio revela la necesidad de una investigación más detallada sobre el tema si los intérpretes, educadores e investigadores desean comprender y explotar los aspectos no verbales de una comunicación plenamente musical.

• Comportamenti non verbali nell'esecuzione di popular music : Un *case study* su *The Corrs*

L'obiettivo del presente studio consisteva nell'analizzare il comportamento non verbale degli esecutori in spettacoli di *popular music*, per comprendere l'uso e le funzioni di gesti, posture ed espressioni facciali. A tale scopo, lo studio inizia col passare in rassegna rilevanti ricerche psicologiche e sociologiche, ivi incluse le categorizzazioni del comportamento non verbale da parte di Ekman, Friesen ed Argyle. Sulla base di tali categorie specifiche, si propongono alcune funzioni dei comportamenti non verbali nelle esecuzioni di musica *popular*. Esse includono : mantenere l'autocontrollo dell'esecutore; fornire informazioni musicali, narrative, emotive e personali; regolare e manipolare relazioni fra esecutore, co-esecutore e pubblico. Il lavoro investigativo si concentra su un *case study* relativo a *The Corrs*, ed è condotto sulla base dell'osservazione di due registrazioni — disponibili in

commercio — della band, effettuate durante esecuzioni dal vivo. Le canzoni dimostrano come all'interno di questa band tre dei quattro membri si alternino in assoli vocali. Nella prima esecuzione, *What can I do?* è cantata da Andrea (voce principale), e nella seconda *No frontiers* è cantata da Sharon e Caroline. Concentrandosi sui solisti, tutti i loro comportamenti non verbali vengono classificati in termini di tipo (ad esempio: simbolo, illustratore, regolatore, adattatore, segnale emotivo) e frequenza del comportamento. I risultati dimostrano che le categorizzazioni di Ekman, Friesen ed Argyle forniscono una descrizione completa dei comportamenti non verbali riscontrati nelle esibizioni. Inoltre l'analisi rivela differenze tra canzoni individuali e a due. Con tali scoperte, l'articolo conclude che in questo tipo di esibizioni i comportamenti non verbali sono decisivi per lo sviluppo, la produzione e la percezione dell'esecuzione musicale. Per quanto preliminare, lo studio segnala la necessità di una ricerca assai più dettagliata sull'argomento, qualora interpreti, didatti e ricercatori debbano pienamente comprendere e mettere a frutto gli aspetti non verbali di una comunicazione musicale.

• Comportements non verbaux dans l'exécution de la musique populaire : étude de cas du groupe *The Corrs*

On étudie ici le comportement non verbal de l'exécutant dans la musique populaire afin de saisir l'utilisation et la fonction des gestes, des attitudes et de l'expression du visage. Pour ce faire, on examine d'abord la recherche psychologique et sociologique pertinente, y compris les catégorisations de comportement non verbal d'Ekman et Friesen ainsi que celles d'Argyle. Ces catégories particulières étayent la définition d'une série de fonctions des comportements non verbaux dans l'exécution de la musique populaire, à savoir : conserver la maîtrise de soi, transmettre des informations musicale, narrative, émotionnelle et personnelle, régler et manipuler les relations entre l'exécutant, ses partenaires et le public. La recherche est centrée sur une étude de cas du groupe *The Corrs* et conduite par l'étude de deux enregistrements filmés de prestations live du groupe disponibles dans le commerce. Les chansons montrent que, au sein de ce groupe, trois des quatre membres chantent à tour de rôle en solo. Dans la première exécution, *What can I do?* est chanté par Andrea (vocaliste principale). Dans la seconde exécution, *No frontiers* est chanté par Sharon et Caroline. La recherche se focalise sur les solistes, et l'ensemble de leurs comportements non verbaux sont classés selon leur type (par exemple, emblème, illustration, régulation, adaptation, démonstration d'affect) et leur fréquence. Les résultats montrent que les catégorisations d'Ekman et Friesen et celles d'Argyle offrent une description complète des comportements non verbaux présents dans les exécutions. En outre, l'analyse révèle des différences entre les individus et les deux chansons. On en conclut que, dans ce type d'exécution, les comportements non verbaux sont des éléments cruciaux du développement, de la production et de la perception de l'exécution musicale. Cette étude préliminaire appelle une recherche plus poussée afin de conduire exécutants, enseignants et chercheurs à la

compréhension et à l'exploitation de l'intégralité des aspects non verbaux d'une communication musicale.

• Nonverbales Verhalten in Darbietungen von Popmusik: Eine Fallstudie zu *The Corrs*

Das Ziel der Studie war die Erforschung von nonverbalem Verhalten in Darbietungen von Popmusik, um die Funktionen von Gesten, Posen und dem Gesichtsausdruck verstehen zu können. Die Arbeit beginnt mit einem Überblick über relevante psychologische und soziologische Forschung, einschließlich Ekman und Friesen und Argyles Kategorien des nonverbalen Verhaltens. Auf diesen spezifischen Kategorien basierend wurden Funktionen des nonverbalen Verhaltens in Darbietungen von Popmusik vorgeschlagen. Unter anderem: die Erhaltung der Selbstkontrolle des Musikers; Preisgabe musikalischer, narrativer, emotionaler und persönlicher Informationen; Regulation und Beeinflussung der Beziehung zwischen den mitwirkenden Musikern untereinander und zum Publikum. Die Forschungsarbeit konzentriert sich auf eine Fallstudie zu *The Corrs* und wurde anhand von zwei kommerziell zugänglichen Filmaufnahmen von Live-Konzerten der Band durchgeführt. Die Songs zeigen, dass in dieser Band drei der vier Mitglieder beim Singen der Soloparts abwechseln. In der ersten Performance, *What can I do?*, singt Andrea (erste Gesangsstimme) und in der zweiten Performance, *No frontiers* singen Sharon and Caroline. Das nonverbale Verhalten der Solisten kann in Typen (z.B. Symbol, Illustrator, Regulator, Adapter, Affektdarstellung) und Häufigkeiten klassifiziert werden. Die Ergebnisse zeigten, dass Ekman und Friesen und Argyles Kategorien eine vollständige Beschreibung des nonverbalen Verhaltens, welches in den Darbietungen gefunden werden konnte, lieferten. Darüber hinaus zeigten die Analysen individuelle Unterschiede und Unterschiede zwischen den beiden Songs. Es kann geschlossen werden, dass nonverbales Verhalten bei dieser Art von Performance bedeutend für die Entwicklung, Produktion und Wahrnehmung der musikalischen Vorführung ist. Obwohl vorläufig, deutet diese Studie an, dass noch deutlich mehr detaillierte Forschungsarbeiten in diesem Bereich notwendig sind, wenn Musiker, Lehrer und Forscher die nonverbalen Aspekte einer musikalischen Kommunikation vollständig verstehen und nutzen möchten.