

THE SONG OF THE SUPERB LYREBIRD IN THE AUSTRALIAN CAPITAL TERRITORY

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The song of the Superb Lyrebird *Menura novaehollandiae* was recorded at five sites in the Australian Capital Territory (A.C.T.). It was found that a number of features were common to all the songs, namely the species own calls and the mimicked calls of the Grey Shrike-thrush, Pied and Grey Currawongs, Red Wattlebird, Crimson Rosella and Yellow-tailed Black-Cockatoo. These features accounted for 70-90% of each bird's total output and suggest that the repertoires of lyrebirds in the A.C.T. are largely similar. The greatest distance between two lyrebirds sharing these similar repertoires was 70 km, which is considerably further than had previously been thought.

INTRODUCTION

The Superb Lyrebird is a common breeding resident in the Brindabella and Namadgi Ranges of the western and southern Australian Capital Territory (Frith 1984). It occupies a wide range of habitats from wet rainforest gullies to dry sclerophyll ridges. For the greater part of the year the bird is rather inconspicuous, but between May and September, its song is frequently heard. The species is thought to be sedentary (Blakers *et al.* 1984).

While the lyrebird's song has been the subject of much literary acclamation and casual speculation, little has been written on it in the A.C.T., Frith (1984) described the lyrebird's own territorial and alarm calls, and mentioned that the Grey Shrike-thrush *Colluricincla harmonica* is often mimicked. Robinson (1975) noted that the lyrebirds output of song at Tidbinbilla peaked in June and July when most other species in the area were silent. Robinson and Frith (1981) conducted an intensive study of the lyrebird's breeding biology at Tidbinbilla and described the role of song in the breeding process, but made no attempt to analyse the song itself.

Bell (1976) compared the song of lyrebirds at various locations throughout south-eastern New South Wales and described differences in dialect, and mentioned the territorial call and models included in the song of lyrebirds at the Tidbinbilla Nature Reserve, A.C.T. He found that at Mt Marulan, 130 km north-east of Canberra, the local dialect relies heavily on the lyrebird's own territorial call and the calls of the Red Wattlebird *Anthochaera carunculata*, Crimson Rosella *Platycercus elegans* and the White-throated Treecreeper *Climacteris leucophaea*. At Caoura in the Morton National Park, 75 km east of Marulan, the lyrebird's territorial call, and the calls of the Pied Currawong *Strepera graculina*, Crimson Rosella, Eastern Whipbird *Psophodes olivaceus*, Pilotbird *Pycnoptilus floccosus*, Eastern Spinebill *Acanthorhynchus tenuirostris*, Satin Bowerbird *Ptilonorhynchus violaceus* and Noisy Friarbird *Philemon corniculatus* are common. In the Royal National Park, just south of Sydney the lyrebirds own calls, as well as those of the Satin Bowerbird, the Grey Shrike-thrush and the Pied Currawong predominate (Bell 1976).

This study was undertaken to supplement the scanty amount of information on the song of the lyrebird in the A.C.T., and to discover what variations, if any, existed within the area.

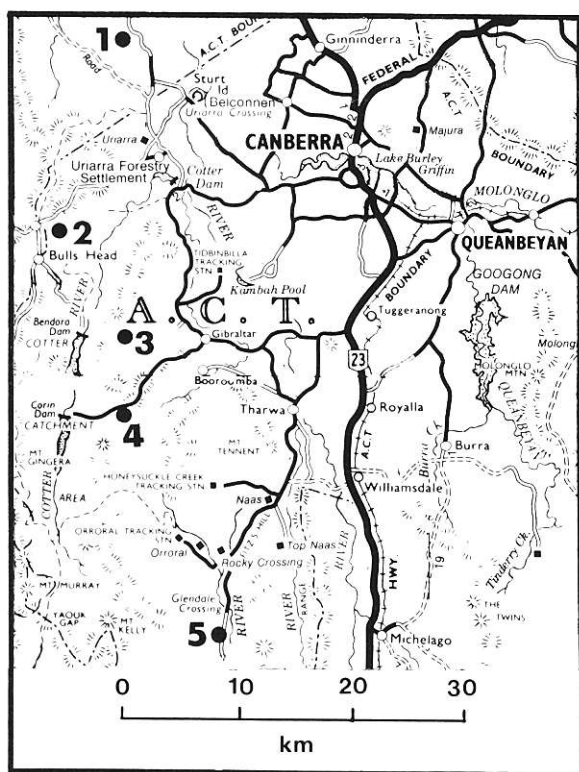


Figure 1. Location of study sites.

- 1 Mountain Creek Road 4 Corin Creek
 2 Lees Creek 5 Namadgi National Park
 3 Tidbinbilla Nature Reserve

METHODS

In July and August 1984, the song of the Superb Lyrebird was recorded at five locations in and around the A.C.T. For location and description of sites, see Figure 1 and Table 1 respectively. A continuous, sustained segment of the song of each of two individual lyrebirds was recorded at each site. To ensure that the same individual was not recorded twice, the second song was recorded a short distance from the site of the first recording, in most cases 200-500 m, only a few minutes after the first recording was made.

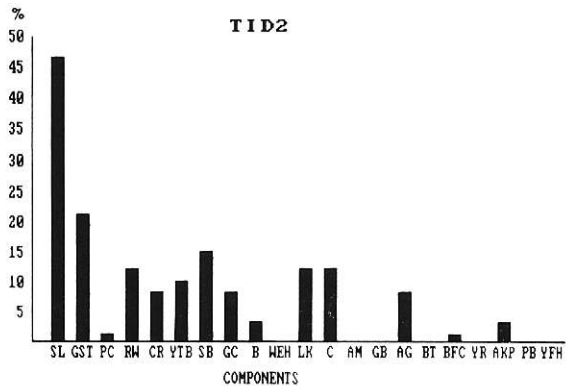
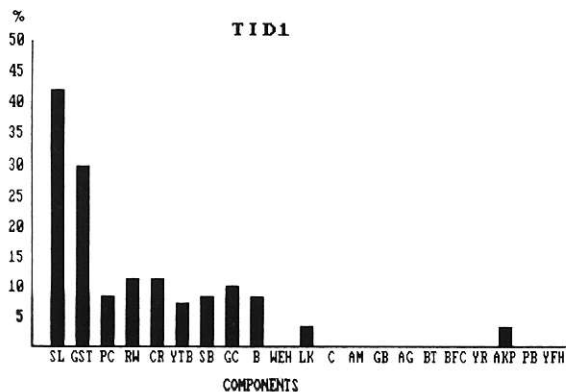
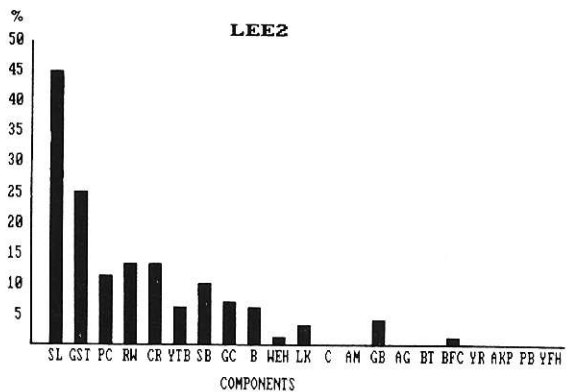
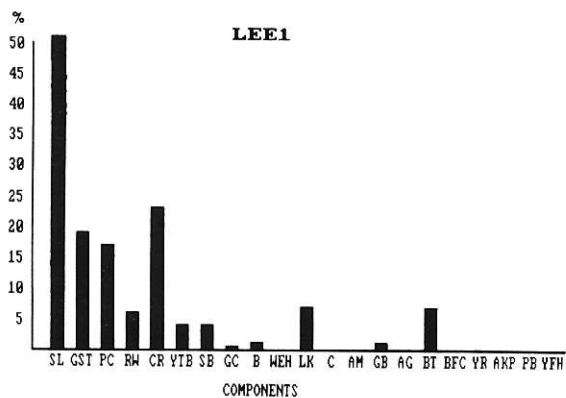
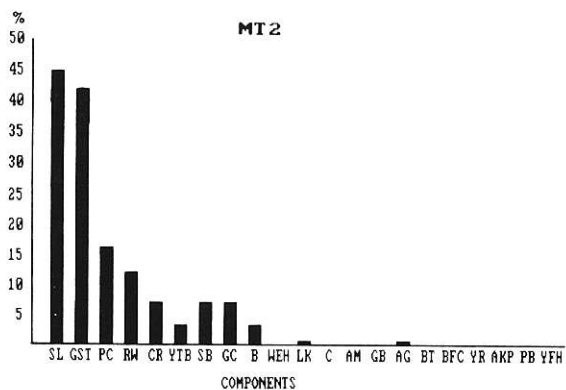
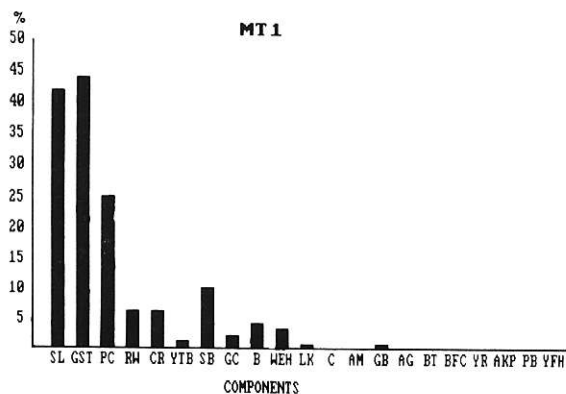
A Philips AR-789 cassette recorder with built-in stereo condenser microphones was used. Bell (1976) demonstrated that a seven minute sample of song is largely representative of an individual lyrebird's repertoire, particularly with regard to the overall frequency of the major models. The presence or absence of less important models in these shorter samples may be largely a matter of chance. The length of song recorded at each site during the current study (9-18 min) more than fulfills the criterion for the representative nature of the frequency of major models in the sample.

The song of each bird was analysed into its component calls — the lyrebird's own calls and the mimicked calls of other species — on the

TABLE 1

Description of Sites

Site	Vegetation	Undergrowth	Bird	Duration of song (mins)	Total no. of calls	No. of types of calls used	Remarks
Mountain Creek Road	Dry sclerophyll	Sparse	MT 1 MT 2	19:42 11:29	201 131	12 11	Lyrebirds not common, difficult to approach.
Lees Creek	Wet sclerophyll	Dense	LEE 1 LEE 2	13:03 11:07	129 119	12 13	Displaying
Tidbinbilla Nat. Res.	Wet Rainforest	Very dense	TID 1 TID 2	9:23 10:43	129 84	11 13	50 m apart easily approached.
Corin Road	Wet sclerophyll	Moderate	COR 1 COR 2	9:17 10:43	121 112	16 14	200 m apart, easily approached, Very common.
Namadgi Nat. Res.	Wet sclerophyll	Sparse	NAM 1 NAM 2	17:36 17:45	96 125	10 11	Area burnt out in 1983, Rare, shy.



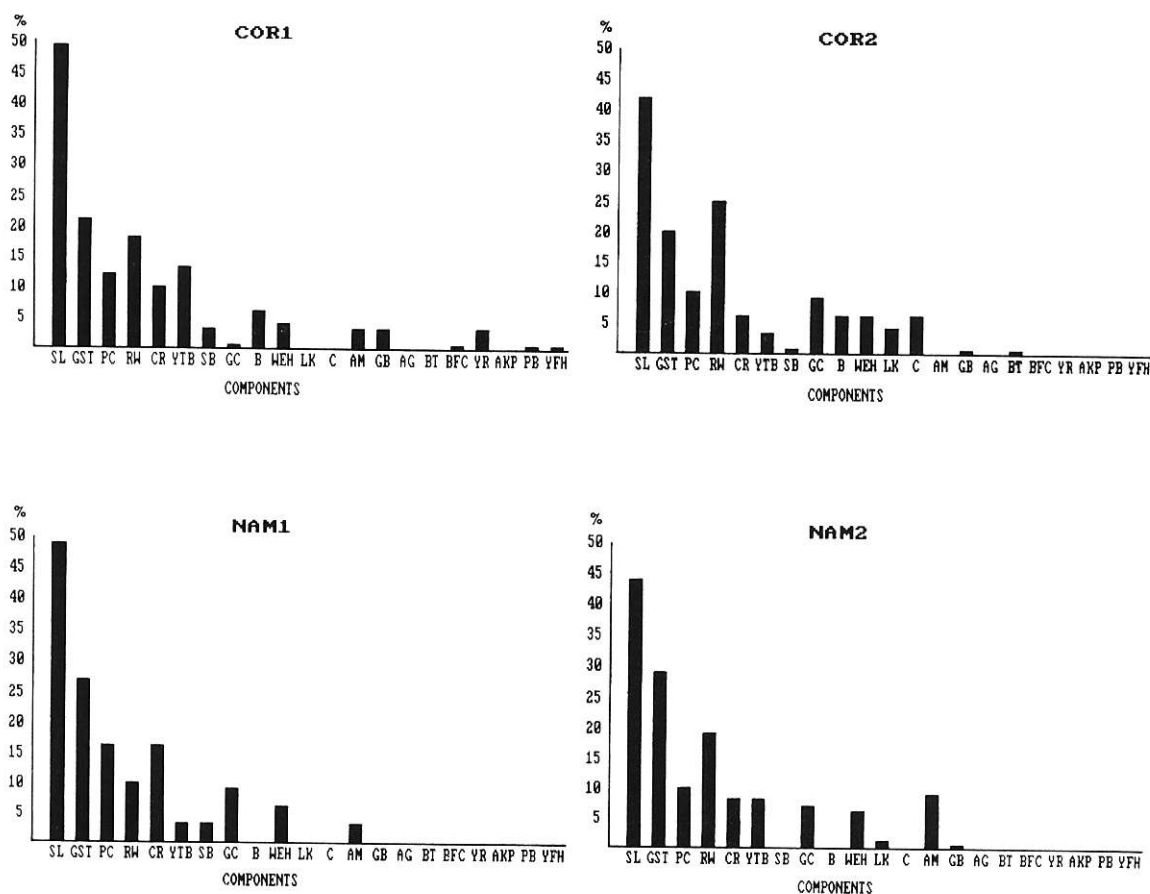


Figure 2. Composition of the song of the Superb Lyrebird in the A.C.T., showing percentage of total output of each component. Component codes are as follows:

SL	Superb Lyrebird	C	'Clicking'
GST	Grey Shrike-thrush	AM	Australian Magpie
PC	Pied Currawong	GB	Grey Butcherbird
RW	Red Wattlebird	AG	Australian Goshawk
CR	Crimson Rosella	BT	Brown Thornbill
YTB	Yellow-tailed Black-Cockatoo	BFC	Black-faced Cuckoo-Shrike
SB	Satin Bowerbird	YR	Yellow Robin
GC	Grey Currawong	AKP	Australian King-Parrot
B	Begging	PB	Pilotbird
WEH	White-eared Honeyeater	YFH	Yellow-faced Honeyeater
LK	Laughing Kookaburra		

basis of the number of times each type of call was heard. The percentage that each type of call represented in the repertoire was then calculated.

RESULTS

The most frequent component of almost all the lyrebirds' songs was their own territorial and contact calls. These calls, of which four distinct varieties were noted, comprise about 30% of the total number of calls in each bird's entire output (Figure 2). The most commonly heard and most voluminous call is a loud descending whistle which is often repeated rapidly a number of times — 'pew, pew, pew, pew'. This call varied in speed in different areas; for example, it was delivered considerably more rapidly at the Corin Road sites than at Tidbinbilla. More often than not, this call was preceded by a high pitched whistle, not unlike the call of the Rufous Whistler *Pachycephala rufiventris*. This call was always followed by the 'pew, pew, pew' call, although the latter was sometimes heard alone.

Two birds (LEE 1 and NAM 1) were displaying while their songs were being recorded. Two different calls characterised their songs: the first is a low-pitched rapid gravelly call, reminiscent of the sound of hand-beaters — 'gulla, gulla, gulla'. This call was interspersed with an explosive 'plick'. While these two calls were usually heard together, they were also heard independently. Owing to small sample size, no attempt was made to compare the models used by displaying birds with those used by birds that were not displaying.

In addition to their own calls, the lyrebirds under study mimicked the calls of a total of eighteen species of bird. In addition, sounds resembling the beating of wings and the begging calls of young birds were recorded.

Second to their own calls in prominence were the calls of the Grey Shrike-thrush which usually represented about twenty percent of total output, although in the case of MT 1 and MT 2, the level was nearer thirty per cent. Most common was the 'dit, dit, dit-a-wit', but this was often followed by the corresponding call of the female. In some cases, the peevish whistle that precedes the more strident main song was also detected. The familiar single bell-like call of this species was recorded on a number of occasions.

The Red Wattlebird was also an important model, typically accounting for about ten percent of the lyrebirds' total output. A variety of harsh cackling and grating calls were noted, as well the territorial antiphonal song of 'chuck, chuck, chuck' and 'pew, pew, pew'. Sometimes, a single lyrebird was heard mimicking both parts of this duet simultaneously.

The calls of the Pied Currawong also made up about ten percent of the song recorded in this region. Most frequently heard was the diagnostic 'currawong, currawong', although the contact call of 'pee-oo' was also recorded.

The harsh, screeching alarm call of the Crimson Rosella is an important component of the lyrebird's repertoire, although both birds in the Namadgi National Park imitated the high-pitched rising whistle which is the typical alarm call of the Crimson Rosella in the southern A.C.T. On one occasion, a bird (LEE 1) also used the bell-like contact call of the rosella.

The diagnostic cry of the Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus* and the 'kling, kling' of the Grey Currawong *Strepera versicolor* each accounted for about five per cent of the lyrebirds' total output.

As Bell (1976) observed, lyrebirds usually only imitate the rolling prelude of the song of the Laughing Kookaburra *Dacelo novaeguineae*, but the birds at Lees Creek and Namadgi also gave more complete renditions of this call. Similarly, the rapid prelude to the song of the Grey Butcherbird *Cracticus torquatus* — 'too-ee, too-ee, too-ee' — was mimicked more often than its melodious fluting call. The two lyrebirds in the Namadgi area imitated both the 'peeoo' alarm call and the typical carolling of the Australian Magpie *Gymnorhina tibicen*.

On one occasion, a sound resembling the beating of wings was heard. It was detected intermittently over a span of about a minute at the end of a prolonged period of sustained song (COR 2). Bell (1976) noted that this sound is included in the repertoires of lyrebirds at Royal National Park and Mt Marulan. In this case, however, this sound may not have been mimicry. The calls of a number of other species were detected. The relative frequency of each call for these species and those described above are shown in Table 2.

With the exceptions of Pied Currawongs near NAM 1, Brown Thornbills *Acanthiza pusilla* at Lees Creek and a pair of Kookaburras at NAM 2, none of the other models was heard or observed within earshot of any of the lyrebirds under study, although most are known to be common breeding residents or altitudinal migrants in the ranges.

A number of writers (e.g. Robinson 1976, Frith 1984), have already commented on the significance of the fact that the lyrebird's models are generally silent during the period of the lyrebird's greatest vocal activity.

DISCUSSION

There was a degree of similarity in the composition of the songs of all the lyrebirds which were studied. A number of features were common to all songs — namely the species' own calls and the mimicked call of the Grey Shrike-thrush, Pied and Grey Currawongs, Red Wattlebird, Crimson Rosella and Yellow-tailed Black-Cockatoo. These features account for 70-90% of each birds total output.

As Bell (1976) showed, the Mt Marulan dialect relies heavily on the calls of the Red Wattlebird, Crimson Rosella and White-throated Treecreeper which account together for 64% of output. However, the Grey Shrike-Thrush, Yellow-tailed Black-Cockatoo and Grey Currawong are rarely mimicked if at all. In the Caoura dialect, territorial calls and those of the Crimson Rosella, Pied Currawong, Satin Bowerbird and Eastern Spinebill account for 48% of the song. In the Royal National Park, mimicry of the bowerbird, territorial calls (including 'clicking'), the Grey Shrike-thrush, the Pied Currawong and the Pilotbird make up 53% of the song. In all these areas, many calls which are frequently imitated in the A.C.T. are not heard.

The sites at Mountain Creek Road and Namadgi National Park are approximately 70 km apart, yet the songs recorded there exhibit a number of similarities. This casts some doubt on Frith's (1984) statement that 'birds in districts only a few miles apart have quite different "dialects" '.

Bell (1976) postulated that the amount of mimicry in a repertoire is less in areas with thinner vegetation. This view is not supported

by the data presented here. Birds at Tidbinbilla (dense rainforest where visibility at ground level is 1-2 m), used 10-13 different models and mimicry accounted for 68-71% of output. At Mountain Creek Road (dry sclerophyll with visibility at ground level of 20-40 m), 11-12 models were used and mimicry was 69-71% of the birds' song.

Obviously, a great deal more data must be gathered to answer the following questions. What factors contribute to the general similarities that exist in the calls of the lyrebirds in the A.C.T. and account for the differences in dialects at Mt Marulan and Caoura? To what extent does the relative abundance of suitable models affect repertoire? To what extent do lyrebirds learn their song from other lyrebirds in the locality?

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