

**Preparation and spontaneity in performance:  
A singer's thoughts while singing Schoenberg**

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**Abstract**

Research using the longitudinal case study method suggests that a subset of the features to which the expert performer attends during practice and rehearsal is retained as *performance cues* (PCs), which guide his or her attention and serve as cues for memory retrieval during performance. While many of the thoughts a singer reported during a performance of Schoenberg's Op. 14 songs were about features that she had already reported attending to in practice (prepared PCs), a substantial number were about features that acquired new musical or expressive significance during the performance (spontaneous PCs). Future research will seek to establish the extent to which these features and PCs predict her subsequent recall for the songs.

Keywords: Case study, practice, memory retrieval.

<sup>1</sup> Expert musicians' preparation for performance from memory has been studied since the mid-1990s using the longitudinal case study method, whereby individual performers record and transcribe their performance and annotate the musical score so as to indicate thoughts during practice, rehearsal and performance. Analysis of these data shows that a subset of the features of the music to which the performer attends during practice and rehearsal is retained as *performance cues* (PCs), which guide the performer's attention and serve as cues for memory retrieval during performance and subsequent recall, even years after the performance (Ginsborg & Chaffin, 2011).

In the present study, the first author, who is an experienced soprano soloist, reported the features that she attended to during practice and the PCs that she attended to during a public performance, from memory, of two songs by Arnold

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<sup>1</sup> This paper is based on a longer article to appear in a forthcoming issue of *Psychomusicology: Music, Mind & Brain (Special Issue on Singing)*.

Schoenberg. Most of the case studies of PCs conducted to date have not compared the use of PCs by different performers (Chaffin, 2007, is the one exception). We were thus able to assess the consistency with which a performer identified musical features and used PCs in two different songs.

We have previously suggested that many of the decisions made during practice are implemented automatically during live performance (e.g., Chaffin et al., 2002). To evaluate this claim, we compared the singer's reports of features attended to in practice with her reports of PCs to determine how many features she continued to think about during performance. Those that were *not* retained were assumed to have become automatic.

Another goal of our study was to examine more closely our previous claims, based on evidence that starts, stops and repetitions during practice coincided with features subsequently noted as PCs, that these are prepared during practice (Chaffin et al., 2002).

Finally, we examined the singer's spontaneous thoughts during performance, classified them as *prepared PCs*, *spontaneous PCs*, or *extraneous thoughts*, and compared them with the thoughts she had had during practice. Spontaneous PCs were thoughts about features of the music that she had not registered noticing before and that were likely to be retained as PCs in subsequent performances. Extraneous thoughts were spontaneous thoughts that were unlikely to recur in later performances because they were about things that were specific to that performance.

## **Method**

### *Musician and music*

The musician, and author of this paper, is a classically-trained, formerly-professional singer, now primarily a researcher. The singer had performed the music approximately 25 years earlier but had not sung or listened to it since. The music was two songs by Arnold Schoenberg, Op. 14, dating from 1907-1908, *Ich darf nicht dankend* and *In diesen Wintertagen*, settings of poems by Stefan George and Karl Henckell respectively.

### *Procedure*

The singer practised and re-memorized the songs in five sessions of about half an hour each over the course of three weeks prior to undertaking approximately 1½ hours of rehearsal with her regular accompanist on each of three occasions, the final rehearsal taking place on the morning of the performance, which took place in the evening. After the final rehearsal, she annotated a copy of the score, marking the locations and nature of the features of the music and text that she had made decisions about, practised, or otherwise paid special attention to during practice. Immediately after the performance (some ten hours after she had made the post-rehearsal annotations), while the concert still continued, the singer made a second set of annotations on another copy of the score representing her PCs and extraneous thoughts during performance. These were the features of the music, text, or performance itself that had been particularly salient during the performance. Examples of her annotations of features and PCs are shown in Figure 1.

The singer subsequently classified both sets of annotations as basic, interpretive, expressive, shared, or structural (see Table 1). The frequency of each type of annotation was then tabulated separately for the two songs and the singer further classified the post-performance annotations as prepared, spontaneous, or extraneous, referring to her pre-performance annotations when in doubt about whether an annotation was prepared or not.

**Etwas bewegter** move on!

93 97 101 105 1 2

Was wil - de Glut ent - zün - det, soll bren - nen fort\_ und fort,

milde - word changed! roll "r" Strong - sing through

*p* *f*

The top panel of the musical score shows a vocal line and a piano accompaniment. The vocal line has lyrics in German and English. The piano accompaniment has dynamics *p* and *f*. Performance cues are written above the piano part, including "milde - word changed!", "roll 'r'", and "Strong - sing through". The word "bren" in the lyrics is circled.

**Etwas bewegter**

93 97 101 105

Was wil - de Glut ent - zün - det, soll bren - nen fort\_ und fort,

canon milde - remember! burn strong roll "r", finish high

*p* *f*

The bottom panel of the musical score shows the same vocal line and piano accompaniment as the top panel. Performance cues are written above the piano part, including "canon", "milde - remember!", "burn strong", and "roll 'r', finish high". Arrows point from the cues "canon" and "roll 'r', finish high" to the piano part.

Figure 1: Features (top panel) and performance cues (bottom panel)

**Table 1: Examples of annotations representing features and cues**

<b>Features</b>		
Basic	Intonation	'pitch higher' ( <i>Ich darf nicht dankend</i> , beat 10)
	Word (pronunciation)	't' [end of <i>dankend</i> ] (ibid., beat 14)
	Breath	Breath mark after <i>Trost</i> (ibid., beat 33)
	Technical	Underlined: change pitch sideways not up and down! ( <i>Liebe, In diesen Wintertagen</i> , beat 227)
	Prepare (pitch, count, listen)	'think through' <i>Wintertagen</i> (ibid., beat 25)
Interpretive	Word (meaning)	'strong' ( <i>fort</i> , ibid., beat 105)
	Sound	'clear sound' ( <i>du, Ich darf nicht dankend</i> , beat 21)
	Notice musical feature	'notice canon' (ibid., beat 62)
	Rubato	wiggle on <i>du</i> (ibid., beat 65)
	Dynamics	'crescendo' ( <i>In diesen Wintertagen</i> , beat 72)
Expressive	Convey meaning	'milde' – word changed! (ibid., beat 94)
Shared	Co-ordinate	'be aware of G's phrase' ( <i>Ich darf nicht dankend</i> , beat 65)
<b>Performance cues</b>		
Basic	Intonation	'intonation' ( <i>Ich darf nicht dankend</i> , beat 100)
	Word (pronunciation)	't' [end of <i>dankend</i> ] (ibid., beat 14 – feature retained as PC)
	Breath	Breath mark after <i>Trost</i> (ibid., beat 33 – feature retained as PC)
	Technical	'roll "r", finish high' ( <i>In diesen Wintertagen</i> , beat 106 – two spontaneous PCs at same location)
	Prepare (pitch, count, listen)	'count' [ <i>ver</i> ]hüllt (ibid., beat 33 – feature retained as PC )
Interpretive	Word (meaning)	'( <i>leises</i> ) missing from text' (ibid., beat 122 – feature retained as PC)
	Sound	'enjoy legato' ( <i>seligen</i> , ibid., beat 225 – spontaneous PC)
	Notice musical feature	'notice canon' ( <i>Ich darf nicht dankend</i> , beat 62 – feature retained as PC)
	Rubato	'wiggle – more time' ( <i>Leides</i> , ibid., beat 76 – spontaneous PC)
	Dynamics	'decrescendo' ( <i>hinein, In diesen Wintertagen</i> , beat 171 – feature retained as PC)
Expressive	Convey meaning	'growing excitement, more than in rehearsal' (ibid., beat 207 – extraneous thought)
Shared	Co-ordinate	'co-ordinate' ( <i>Ich darf nicht dankend</i> , beat 76 – spontaneous PC)

## Results

There was no difference between the proportions of basic, interpretive, expressive, and shared features or PCs in the two Schoenberg songs, although there was a trend towards more interpretive and expressive PCs for *In diesen Wintertagen* than for *Ich darf nicht dankend*,  $X^2(2) = 4.78, p < .09$ . Just under half (47.6%) of the features the singer reported thinking about during practice were retained as PCs (see Table 2). The remainder, just over half of the decisions that she made during practice, were executed automatically during performance.

**Table 2: Number of features retained as PCs, showing the % of each type of feature retained**

		Total number of features	Number of features retained		Total number features retained	% of features retained
			<i>Ich darf nicht dankend</i>	<i>In diesen Wintertagen</i>		
Basic	Intonation	2	1	0	1	50.0
	Word	15	2	4	6	40.0
	Breath	12	5	2	7	58.3
	Technical	2	0	0	0	0.0
	Prepare	13	3	5	8	61.5
<b>All basic features</b>		<b>44</b>	<b>11</b>	<b>11</b>	<b>22</b>	<b>50.0</b>
Interpretive	Word	20	0	4	4	20.0
	Sound	9	1	4	5	55.6
	Notice	12	1	5	6	50.0
	Rubato	3	2	0	2	66.7
	Dynamics	5	0	3	3	60.0
<b>All interpretive features</b>		<b>49</b>	<b>4</b>	<b>16</b>	<b>20</b>	<b>40.8</b>
<b>Expressive features</b>		<b>11</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>63.6</b>
<b>Shared features</b>		<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>100</b>
<b>Total</b>		<b>105</b>	<b>20</b>	<b>30</b>	<b>50</b>	<b>47.6</b>

Many interpretive annotations dealt with the meanings of words that, once internalized, did not require attention in performance but were executed automatically (or became the locations of expressive PCs). Because the singer tried to think about expression as much as possible in performance, expressive decisions were least likely to be executed automatically.

Table 3 shows the total number of PCs of each type reported and the percentage corresponding to features reported prior to public performance. More than half (61%) of the PCs were prepared; we were surprised the proportion was not higher.

**Table 3: Percentage and frequency (in parentheses) of prepared PCs originating in features**

PC/feature	Prepared PCs (originating in features)	Total number of thoughts about the music reported during performance
<i>Basic+ Shared</i>	28.0 (23)	28
<i>Interpretive</i>	24.4 (20)	34
<i>Expressive</i>	8.5 (7)	20
<i>Total</i>	61 (50)	82

Almost 40% of the singer's thoughts during performance did not correspond directly with features of the music that she reported noticing during practice. As shown in Table 4, just over 60% of the singer's thoughts during performance involved prepared PCs, almost 30% were spontaneous PCs and less than 10% were extraneous. These proportions did not differ significantly for the two songs.

**Table 4: Percentage and frequency (in parentheses) of spontaneous (vs prepared) thoughts during performance judged by the singer as likely (vs unlikely) to reappear in subsequent performances**

Type of thought	Spontaneous (not originating in features)		Prepared	Total number of thoughts/PCs reported during performance
	PCs (likely to reappear in subsequent performances)	Extraneous thoughts (unlikely to reappear in subsequent performances)	PCs (originating in features)	
<i>Ich darf nicht</i>	7.3 (6)	3.7 (3)	24.4 (20)	29
<i>In diesen Wintertagen</i>	22.0 (18)	6.1 (5)	36.6 (30)	53
Total	29.3 (24)	9.8 (8)	61.0 (50)	82

As shown in Table 5, spontaneous PCs and thoughts were more often about interpretive and expressive issues and less often about basic issues than prepared PCs,  $X^2(2) = 8.90, p = .01$ . The difference reflects the fact that the singer's attention during the performance was more on interpretation and musical feeling than on technical issues.

**Table 5: Percentage and frequency (in parentheses) of prepared PCs, spontaneous PCs and spontaneous thoughts about basic, interpretive, and expressive aspects of performance**

Type of thought	Spontaneous (not originating in features)		Prepared	Total number of thoughts/PCs reported during performance
	PCs (likely to reappear in subsequent performances)	Extraneous thoughts (unlikely to reappear in subsequent performances)	PCs (originating in features)	
<i>Basic+ Shared</i>	3.7 (3)	2.4 (2)	28.0 (23)	28
<i>Interpretive</i>	15.9 (13)	1.2 (1)	24.4 (20)	34
<i>Expressive</i>	9.8 (8)	6.1 (5)	8.5 (7)	20
Total	29.3 (24)	9.8 (8)	61 (50)	82

In five instances, shown in Table 6, the singer reported thinking about a feature differently during the public performance than during practice.

**Table 6: Features becoming performance cues of different types (*Ich darf nicht dankend*)**

Beat	Word	Feature	PC	Annotation
17	<i>nieder[sinken]</i>	Interpretive word meaning	Technical	"unwanted fog in throat"
46	<i>abzu[winken]</i>	Interpretive word meaning ("shrug off")	Expressive	"imagine shrug"
75	<i>[Leijdes [Nähe]</i>	Basic word pronunciation	Interpretive rubato	wiggle
87	<i>ihm</i>	Basic breath after "ihm"	Expressive	"didn't need breath"
107	<i>Schlaf [nen]</i>	Interpretive word meaning	Interpretive sound	"colour"

## Discussion

As expected, there was no difference between the two Schoenberg songs in the proportions of the various types of features or PCs to which the singer reported attending. Certain decisions she made, reflecting discoveries relating to the music and particularly the lyrics (see Ginsborg & Chaffin, forthcoming) became additional expressive features and PCs. Also, during the performance, she found herself responding strongly to the feelings expressed in the songs and, as a result, reported a substantial number of thoughts that did not correspond directly to features of the music noticed during practice.

During the performance she did not think of about half the musical features she had been thinking about during practice, including the pronunciation and meanings of words, breath locations, and some aspects of preparation, including pitches in the accompaniment used for pitching the melody. Practice had done its work, and these features had become automatic. In the five cases shown in Table 6 features became PCs of different types. The first instance was that of dealing with a problem (“unwanted fog in throat”) by shifting focus from interpretation to technique; in others, the meaning of a word had become internalized so the singer could shift her focus from interpretation to expression.

The finding that more than half of the singer’s PCs were prepared during practice is consistent with the suggestion of Chaffin et al. (2002, pp.169-170) that experienced performers prepare PCs by repeatedly attending to them in practice. As a result, the musical feature comes to mind automatically during performance, ensuring that it will be implemented as planned. Yet the suggestion that *all* PCs are prepared during practice has to be modified since the remainder represents spontaneous thoughts, which were more or less equally divided between expressive and interpretive aspects of the music. Many of these reflect new musical insights, typically to features that may have been noticed before, during practice, but without the singer’s appreciating their importance. One example is the canon at beat 93 of *In diesen Wintertagen* that was not marked after the rehearsal. These new insights are likely to become PCs; a study testing this hypothesis is currently under way.

The proportion of extraneous thoughts was less than 10%. One consequence of training oneself to attend to PCs may be to reduce the frequency of unwanted and

distracting thoughts during performance. Although some extraneous thoughts may be necessary to cope with unanticipated events, others may be unnecessary and unwelcome; for example, thoughts about what a member of the audience is doing or about how well (or badly) the performance is going are rarely helpful. In the present study, the singer's extraneous thoughts were all to do with the music and her reaction to it. We suspect that a low proportion of extraneous thoughts is a characteristic of expert performance and that PCs may help keep extraneous thoughts to a minimum.

Ideally, most performers would probably prefer to focus entirely on expression during performance. Well-prepared PCs can make this possible, although they certainly do not guarantee that it will happen. When a performer can focus on expressive PCs, other aspects of the music and performance retreat into the background. This happened increasingly for the singer as the performance progressed and her annotations represent the final kind of spontaneous thought, reflecting her increasing enjoyment of the performance. First, her confidence grew as she recovered from a difficult start (“unwanted fog in voice”); second, while the mood of *Ich darf nicht danken* is “serious, sad”, the mood of *In diesen Wintertagen* is intimate, tender, becoming passionate and ending in exultation. Her first expressive feature – and PC – was “smiling”. Above the C major chord at which the singer enters, she wrote “hearing beautiful harmony”. During the extended interlude before the beginning of the last sentence of the poem (*Dem Schein der Welt verschollen* – “the glitter of the world may disappear”) she reminded herself, again, “listen to harmonic progression / build from here”; and then over the next phrase (*auf unserm Eiland wollen wir Tag und Nacht* – “on our island let us day and night...”) noted “growing excitement (more than in rehearsal)”. The song ends ...*der seligen Liebe weih'n* – “consecrate to holy love”, at which she noted “enjoy legato”. Finally, over the last 10 bars of the piano postlude, she made the following annotations: “real feeling of pleasure during postlude – such beautiful music, and sense of coming / being home.” She describes the feelings that prompted these annotations thus:

This “homecoming” for me was not just a response to the C major tonality of the song's conclusion, but a reference to the context of the performance: the first concert [...] on the occasion of a birthday celebration for the pianist, my husband. Not only, then, did it feel like a home-coming to be

singing with long-standing and very dear friends, but also to be in the role – once again – of professional musician, rather than / as well as (musician-) researcher.

### *Practical applications*

We suspect that the use of the procedures we have described, noting features during practice and PCs following performance would be a valuable exercise for advanced students. Research is needed to test this intuition. (Software designed for this purpose is available at <http://www.htfdcc.uconn.edu/psychlabs/research/symp1.html>). The more musicians are aware of their goals – for example of which features they want to become automatic and which they want to keep in mind during performance – the more efficiently they can practice.

### **References**

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### **Author’s biographies**

Jane Ginsborg was a professional singer before she became a music psychologist. She is currently Associate Dean of Research and Director of the Centre for Music Performance Research at the RNCM, and Managing Editor of the on-line journal *Music Performance Research*. In addition to expert performers’ preparation for performance she studies collaborative music-making and musicians’ health. She still performs in public occasionally.

Roger Chaffin is Professor of Psychology at the University of Connecticut, where he is also Director of the Music Psychology Lab. In addition to pioneering the longitudinal case study method of studying the cognitive processes underlying musical performance, he has published widely on the topics of memory, language and problem-solving. He is an amateur flautist and singer.