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SENTIMENT AND EMOTIONS IN TAYLOR SWIFT'S ALBUMS
A journey through the eras

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Abstract – American singer-songwriter Taylor Swift has navigated different musical styles throughout her career, ranging from country, to pop, to indie folk. Her albums are characterized by establishing the beginning of new eras, each marked by a defined aesthetics and sound. This research aims to scrutinize the evolution of Taylor Swift's lyrics throughout her discography in terms of sentiment and emotions. The main objective is to find out whether actual alignment exists between Taylor Swift's lyrics and the supposed eras that according to the artist have marked her work. To do so, we examine her discography in terms of sentiment and emotions. We use a mixed-methods approach to analyze each album's lyrics using several advanced text processing tools. To deal with sentiment, we analyze Swift's discography using an advanced sentiment analysis system that offers time series analysis. On the other hand, we extract the most salient emotions using an advanced corpus query tool designed for content and discourse analysis that allows the identification and raking of emotions according to Parrott's list. The results show that love and sadness dominate Swift's discography, with a predominantly negative sentiment. Additionally, there is a mismatch between the emotions in her lyrics and their sentiment classification, indicating that Swift's style does not rely on explicit positive or negative terms. Instead, her use of rhetorical devices and subtle language conveys meaning through more implicit forms.

Keywords: Taylor Swift; song lyrics; sentiment analysis; emotion detection; large language models.

1. Introduction

Taylor Swift has become a prominent figure in contemporary music, known for her versatility across various musical genres, ranging from country, pop, to indie folk. Over the past two decades, she has established herself in the music industry, achieving significant commercial success and earning recognition for her ability to write songs that connect with listeners on an emotional level. Swift writes or co-writes all her songs, and her voice and personal experiences have always remained a central part of her songwriting process. Thus, her lyrics play a crucial part in her music, and her fans all over the world, who are known as "Swifties", learn them by heart.

In this chapter, we attempt to analyze the words in Swift's songs by

applying a number of computational methods as well as qualitative analysis with a view to study the evolution of sentiment and emotions present in the lyrics, and how they align with eras that the artist herself uses to categorize and describe her music.

1.1. Overview of Taylor Swift's discography

Taylor Swift's albums are marked as eras. Every album she releases is treated as a unique chapter, with its own visual style, thematic focus, and musical direction. Every era is deliberately constructed to offer something new both visually and emotionally. When she creates an album, she adopts a specific look, sound, and even persona that aligns with the album's themes (Green 2024; Penn and Trust 2024). This allows her to engage her audience with her music in a new way with every release. Her early country albums, *Taylor Swift* (2006) and *Fearless* (2008), were characterized by youthful innocence, romantic optimism, and fairytale-like narratives. These were followed by *Speak Now* (2010), which Swift wrote entirely by herself. This era had a more mature tone and was focused on personal stories of love, heartbreak, and self-reflection, although it was still deeply rooted in her country background. *Red* (2012) marked a shift into a more diverse musical territory, blending country with pop and rock. It was an era of emotional complexity, as Swift explored love in its euphoric and devastating forms using the color red as a metaphor for emotions that are passionate and raw (Jagwani 2021). The *1989* (2014) era was Taylor's full dive into pop music, thus representing a break from her country roots. This era was characterized by a bright, synth-driven sound, and Swift centered her attention on independence, fun, and reinvention (Petridis 2024). Even her looks evolved during this era, as she adopted a chic, retro-inspired aesthetic that matched the sound of the album. *Reputation* (2017), in turn, was one of Swift's most dramatic transformations, as it came after a period of public scrutiny and media backlash. The aesthetic had a darker visual style and was inspired by snakes. Swift embraced a more assertive persona, even declaring in "Look What You Made Me Do" that the old Taylor was "dead". With *Lover* (2019), Swift returned to a brighter, more romantic persona. The pastel colors and the dreamy visuals of this era stood in stark contrast to the dark tones of *Reputation*. In 2020, Swift introduced yet another era with *Folklore* and *Evermore*, often referred to by the songwriter as *the sister albums*, as they were released five months apart. These albums marked a shift to an indie-folk sound, and they represented a quieter, more reflective mood, thus showing Swift's ability to shift into a more introspective, contemplative mode (Mylrea 2020). The *Midnights* (2022) era was based on the concept of sleepless nights and the thoughts that keep one awake at night. Its aesthetic was dreamy, dark, and steeped in mystery, as if between sleep and wakefulness. Finally, *The Tortured Poets Department* (2024), Swift's latest album, draws heavily from the idea of

the cursed poet, thus embodying the romanticism of self-destructive artists such as Dylan Thomas. Swift presents a black-and-white aesthetic where she reflects "a fleeting and fatalistic moment in time" (Nanji 2024).

1.2. Emotion identification and detection

Emotion detection is the process of identifying a person's various feelings or emotions (Nandwani and Verma 2021). Of course, any attempt to manually or automatically classify emotions presupposes an accepted pre-existing schema or taxonomy of emotions. Needless to say, human emotions present a wide spectrum or continuum of feelings, and arriving at an agreed-upon universal classification is no easy task.

The emotion models that have been proposed to date can be classified into two: dimensional emotion models, and categorical emotion models. The former represent emotions based on three variables or dimensions, namely, valence, arousal, and power, whereas the latter define emotions discretely, such as anger or happiness.

Thus, emotions are classified into categories according to the particular model being used. Ekman's model, one of the most salient in the literature, distinguishes six basic emotions: anger, disgust, fear, happiness, sadness, and surprise (Ekman 1992). The Human-Machine Interaction Network on Emotion (HUMAINE) project proposed the emotion annotation and representation language (EARL), which considers 48 emotions that grouped into 10 main ones: negative and forceful, negative and not in control, negative thoughts, negative and passive, agitation, positive and lively, caring, positive thoughts, quiet positive, and reactive (Douglas-Cowie *et al.* 2011). Parrott's classification, in turn, presents a tree-structured list of emotions (Parrott 2001) based on six primary ones: love, joy, surprise, anger, sadness, and fear, as shown on Table 1.

Primary emotion	Secondary emotion	Tertiary emotion
Love	Affection	Adoration / Fondness / Liking / Attraction / Caring / Tenderness / Compassion / Sentimentality
	Lust	Desire / Passion / Infatuation
	Longing	Longing
Joy	Cheerfulness	Amusement / Bliss / Gaiety / Glee / Jolliness / Joviality / Joy / Delight / Enjoyment / Gladness / Happiness / Jubilation / Elation / Satisfaction / Ecstasy/ Euphoria
	Zest	Enthusiasm / Zeal / Excitement / Thrill / Exhilaration
	Contentment	Pleasure
	Pride	Triumph
	Optimism	Eagerness / Hope

	Enthrallment	Enthrallment / Rapture
	Relief	Relief
Surprise	Surprise	Amazement / Astonishment
Anger	Irritability	Aggravation / Agitation / Annoyance / Grouchy / Grumpy / Crosspatch
	Exasperation	Frustration
	Rage	Anger / Outrage / Fury / Wrath / Hostility / Ferocity / Bitterness / Hatred / Scorn / Spite / Vengefulness / Dislike / Resentment
	Disgust	Revulsion / Contempt / Loathing
	Envy	Jealousy
	Torment	Torment
Sadness	Suffering	Agony / Anguish / Hurt
	Sadness	Depression / Despair / Gloom / Glumness / Unhappiness / Grief / Sorrow / Woe / Misery / Melancholy
	Disappointment	Dismay / Displeasure
	Shame	Guilt / Regret / Remorse
	Neglect	Alienation / Defeatism / Dejection / Embarrassment / Homesickness / Humiliation / Insecurity / Insult / Isolation / Loneliness / Rejection
	Sympathy	Pity / Mono no aware / Sympathy
Fear	Horror	Alarm / Shock / Fear / Fright / Horror / Terror / Panic / Hysteria / Mortification
	Nervousness	Anxiety / Suspense / Uneasiness / Apprehension (fear) / Worry / Distress / Dread

Table 1
Parrott's emotion classification.

As in any classification task, the fewer categories, the easier it is to make the classification. Therefore, in emotion detection shared tasks, such as those from SemEval (Chatterjee *et al.* 2019; Kumar *et al.* 2024) simpler emotion models with fewer categories are commonly used, as it simplifies both the task itself and the evaluation process. In this research, however, we employ Parrot's schema because, although it offers many emotion labels, they are hierarchically arranged, and therefore evaluation of the classification results can be done at the primary level even if secondary or tertiary emotion categories are used by the large language model (LLM henceforth) that we employ for automatic identification. This is further explained in Section 3.1.

1.3. Sentiment analysis

Sentiment analysis is a Natural Language Processing (NLP henceforth) task that attempts to automatically process people's opinions and sentiments towards other entities (e.g., products, services, individuals) and their attributes (Liu

2015). Its main aim is to analyze texts automatically to detect polarity, emotions, and/or intensity. This is generally done through the identification of lexical, iconographic, and structural features, in addition to using advanced algorithms to process them, in order to classify a document on a scale that determines its semantic orientation (Lei and Liu 2021; Moreno-Ortiz 2019).

Regarding its tools and techniques, these can be machine-learning, lexicon-based, or a combination of both. Machine-learning approaches use a set of features which are learned from annotated corpora, and although they have reached high levels of performance in language data analysis, they still perform poorly in domains they have not been previously trained on (Aue and Gamon 2005; De Clercq *et al.* 2017). The lexicon-based approach uses a lexicon to provide the polarity for each word or phrase found in the text, sometimes in combination with some system to account for valence shifters (Moreno-Ortiz *et al.* 2019; Muhammad *et al.* 2016; Taboada 2016). However, this type of approach also presents some drawbacks, as it requires rich lexical knowledge to achieve good results in different domains (Moreno-Ortiz and Pérez-Hernández 2018). Moreover, contextual valence shifters represent a challenge both at the sentence and discourse level, since phenomena such as metaphors, sarcasm, or understatements can entail shifts in polarity.

Sentiment analysis is inherently concerned with the study of evaluative language, i.e., linguistic expressions that describe a speaker's attitudes, feelings, and judgement, as well as their commitment towards the message (Benamara *et al.* 2017). Consequently, it has been widely applied to the domain of online consumer reviews about movies, books, restaurants, hotels, or other types of consumer products (Abdullah *et al.* 2023; Ameur *et al.* 2024; Khan *et al.* 2010; Moreno-Ortiz *et al.* 2019; Singh *et al.* 2013). It has also been applied to the domain of song lyrics in combination with emotion detection: Sharma *et al.* (2016) carried out a sentiment analysis of lyrics to classify them according to whether they are suitable for certain audiences or not, while Choi *et al.* (2018) proposed a method for the recommendation of music using emotion and sentiment analysis based on lyrics. More recently, Du (2024) explored how sentiment analysis can detect emotions within lyrics, determining whether a song conveys positive, negative, or neutral emotions. However, they already addressed the issue of working with song lyrics and advanced the role that complexity and the ambiguity of lyrical language can play in this type of analysis.

To our knowledge, nonetheless, no previous work has been carried out on emotion detection and sentiment analysis of a particular artist's or band's discography. For this reason, the present work attempts to investigate Taylor Swift's production with the aim of exploring whether her lyrics show a transition between her eras through the examination of her discography in terms of emotions and sentiment.

2. Research design

2.1. Objectives and methods

The main objective is to find out whether actual alignment exists between Taylor Swift's lyrics and the supposed eras that according to the artist have marked her career and her discography. To do so, we examine her discography in terms of sentiment and emotions. Therefore, the main research question can be formulated as "do Swift's songs show an evolution in Swift's discourse in terms of sentiment and emotions that aligns with the *eras*?" This objective involves several operational prerequisites that determine the following specific objectives:

1. Specific objective 1: to gain insights into the most salient emotions contained in her discography.
2. Specific objective 2: to identify the evolution in the semantic orientation of the singer's eras.

To achieve this goal, we use a mixed-methods approach to analyze each album's lyrics using several advanced text processing tools. To deal with sentiment, we analyze Swift's discography using Lingmotif 2 (Moreno-Ortiz 2023), a lexicon-based sentiment analysis system. On the other hand, we extract the most salient emotions using Corpus Sense (Moreno-Ortiz 2024a, 2024b), a corpus query tool designed for content and discourse analysis. Specifically, we employ Corpus Sense's *Insights* feature, which uses an LLM model to extract very specific information from a corpus or subcorpus, such as the identification of rhetorical devices, rhetorical style, register, and sarcasm. For this work we used the emotion detection insight to identify and rank emotions according to Parrott's list of emotions.

2.2. Corpus

To accomplish the aforementioned objectives, we compiled a corpus of all of the artist's songs, from her self-titled album (*Taylor Swift* 2006) to her latest release to date (*The Tortured Poets Department* 2024). It must be noted that for the purposes of this work, we used the deluxe versions and the "Taylor's Versions" (TV henceforth) of her songs. The reasoning behind this choice is that these editions include more songs and, consequently, a higher number of words, thus offering a more thorough analysis of her discography. Nonetheless, we excluded songs written for films, such as "Safe and Sound", "I Don't Wanna Live Forever", or "Eyes Open", as they were based on such films' plot and, therefore, we consider that they are unrepresentative of Swift's eras. A total of 11 albums and 230 song lyrics files were included in the corpus, as shown on

Table 2. Please note that although the albums *Fearless*, *Speak Now*, *Red*, and *1989* were originally released in 2008, 2010, 2012, and 2014, correspondingly, their TV versions were not released in a chronological order, as shown on the table. It must also be noted that, when cleaning text for this corpus, we decided to remove repetition of expressions such as "la la la" or "oh oh oh", as it was noticed that they mainly functioned as fillers and did not add meaning to the songs.

Album	**Year**	**Songs**	**Words**
Taylor Swift	2004	15	4,271
Fearless	2008 (TV: 2021)	26	8,980
Speak Now	2010 (TV: 2023)	22	9,355
Red	2012 (TV: 2021)	30	11,729
1989	2014 (TV: 2023)	22	9,690
Reputation	2017	15	7,760
Lover	2019	18	7,818
Folklore	2020	17	5,381
Evermore	2020	17	6,406
Midnights	2022	17	8,047
The Tortured Poets Department	2024	31	11,553
Total		**230**	**90,990**

Table 2
Number of words in the corpus.

3. Analysis of results

3.1. Emotions

The first step in our analysis involved using Corpus Sense's *Insights* tool to obtain a quantification of the presence of different emotions in each of the albums. Corpus Sense uses a built-in LLM, currently Qwen 2.5 (Qwen Team 2024), to query a corpus or subcorpus (sampling it if necessary) about very specific aspects, including emotion detection and quantification.

Even the responses returned by the LLM acknowledge the difficulty involved in this endeavor, with remarks such as "Analyzing human emotions is not an easy task and specific personal context may play an important part in

identifying the proper emotions". As expected, responses were reasonably accurate but often incomplete. A typical LLM response as returned by Corpus Sense is shown (partially) in Figure 1.

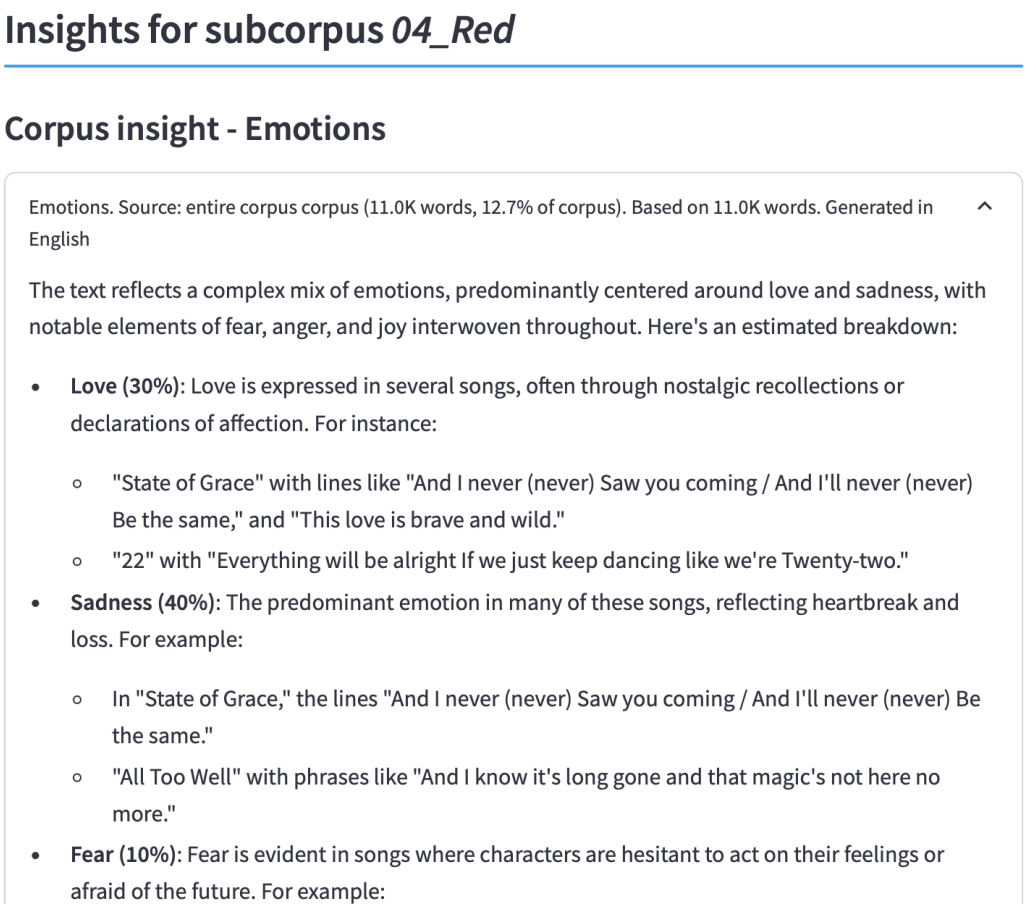

Figure 1
Example of LLM response.

The prompt that Corpus Sense employs to generate this response instructs the LLM to use Parrott's primary emotions (love, joy, surprise, anger, sadness, and fear), and although it generally abides by these instructions, it sometimes offers other more specific emotions, such as nostalgia, regret, or longing. This is why we decided to use Parrott's (2001) hierarchical model, as these specific emotions are almost always included within the secondary or tertiary sets of emotions in Parrott's model, and therefore can be easily mapped to the primary set, which are the ones we actually use to quantify them after manual analysis of the lyrics.

The manual annotation process consisted in labeling text chunks of arbitrary length for each of the primary emotions in Parrott's model and then counting them and calculating the proportions against the total number of labeled text segments per album. In general, the quantification offered by Corpus Sense's LLM, after mapping those labels that did not belong to the set of primary emotions and recalculating totals for those cases where the LLM

produced wrong total proportions,[1] were not too far off our own, manually-annotated one. We summarize the results of both Corpus Sense (CS) and manual annotation (MA) in Table 3.

Album	Love (%)		Joy (%)		Surprise (%)		Anger (%)		Sadness (%)		Fear (%)	
	CS	MA	CS	MA	CS	MA	CS	MA	CS	MA	CS	MA
Taylor Swift	30	29	8	6	2	0	15	19	42	39	3	6
Fearless	30	36	25	17	15	0	10	14	15	30	5	4
Speak Now	30	32	15	12	10	5	5	16	35	24	5	10
Red	35	24	5	11	10	1	5	15	30	42	15	7
1989	25	28	10	25	8	1	20	13	30	15	16	7
Reputation	30	57	15	9	8	0	15	15	27	3	5	15
Lover	30	46	20	17	10	0	5	7	30	8	5	22
Folklore	40	28	6	15	8	0	15	14	30	32	2	11
Evermore	25	26	5	12	5	1	15	11	40	40	10	10
Midnights	20	31	10	21	5	4	15	15	40	23	10	6
TTPD	35	16	2	11	5	1	25	33	30	32	3	7
Diff. (mean)	**9.91**		**7.18**		**6.64**		**4.64**		**11.18**		**6.36**	

Table 3
Evaluation of emotion quantification by LLM and manual annotation (M=7.91, SD=2.43).

The overall average difference is only 7.91%. Obviously, this relatively strong agreement does not unequivocally validate either quantification, since our single-annotator manual classification cannot be claimed to be a gold standard, but it does suggest that the LLM did produce close-to-human results.

Figure 2 visualizes the results of manual annotation as an ordered sequence that represents the evolution of the different emotions in Swift's lyrics over time.

[1] Large Language Models excel at achieving higher-order cognitive tasks, such as summarizing text or, more to the point, recognizing the expression of emotions in text. However, they are known to struggle with certain relatively simple tasks, such as counting (and therefore calculating correct proportions). In our experiments, it was often the case that the LLM produced percentages whose proportions did not add up to 100, which we fixed manually. The actual responses provided by the LLM can be found in this article's repository in PDF format, the link to which will be provided once the article review process has been completed in order to ensure anonymization.

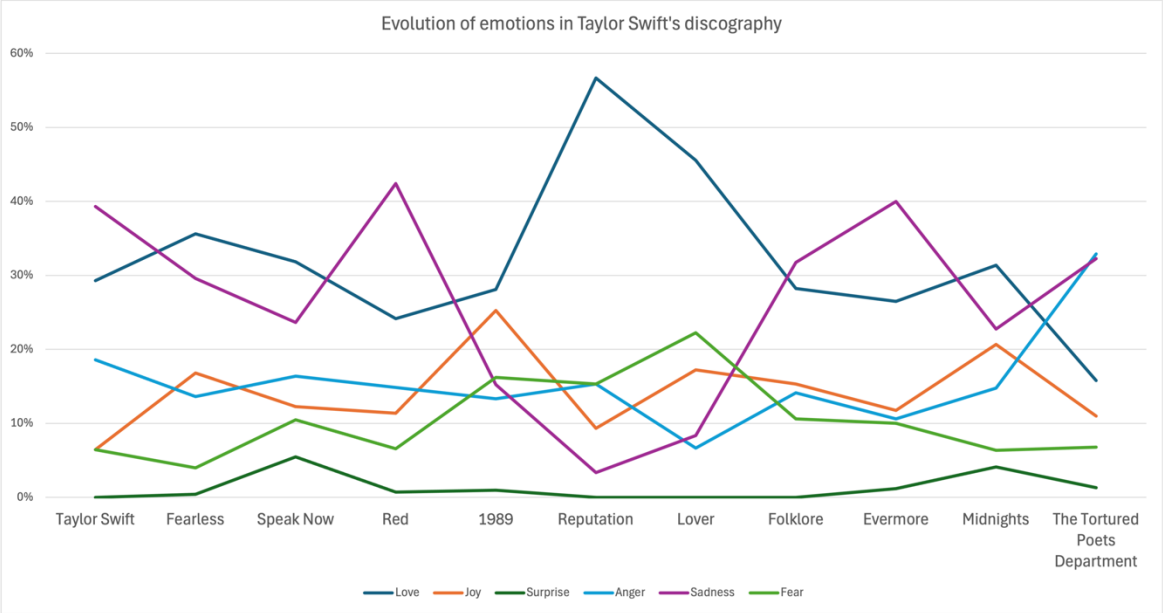

Figure 2
Evolution of emotions in Taylor Swift's discography.

Two main emotions stand out in Swift's discography: love and sadness. Generally, when one of them appears as the first one, the other follows closely, and they were usually properly identified by Corpus Sense's analysis.

Swift's self-titled album is centered around themes of young love, heartache, and self-discovery. It was released when she was 16, and, consequently, the album draws on her personal experiences as a teenager navigating romance and heartbreak. In this context, sadness is the main emotion (37%), as Swift portrays anguish ("Teardrops on My Guitar"), agony ("Tied Together With a Smile", "Cold as You", "Invisible"), or melancholy ("Tim McGraw"). This is closely followed by love (33%), present as tenderness ("Mary's Song"), adoration ("Stay Beautiful") or liking ("I'm Only Me When I'm With You", "Our Song"). Anger also plays a relevant role in this album (19%), especially in the form of rage ("Picture to Burn", "Should've Said No").

The album *Fearless* continues to explore the highs and lows of adolescence, thus combining catchy melodies with heartfelt storytelling. It represents the first shift from sadness as the main emotion, as love becomes the primary one (36%) and can be found in the form of longing ("Love Story", "You Belong with Me"), liking ("Hey Stephen"), or caring ("Jump Then Fall"), among others. Sadness (30%) is still present through emotions such as anguish ("Breathe") or disappointment ("You're Not Sorry", "Forever & Always"). In this album, joy also plays a very relevant role (17%), present as excitement ("Fearless"), happiness ("The Best Day"), or pride ("Change").

Speak Now reflects Swift's transition from adolescence to adulthood, as she examines her growth and experiences. It is the first and only album that Swift wrote entirely without the help of any co-writers, and, consequently, the

songs showcase her evolution as an artist and individual. This album continues to present love (31%) and sadness (24%) as the main emotions. Love can be found in a wide variety of forms: desire ("Sparks Fly"), infatuation ("I Can See You"), tenderness ("Ours"), or longing ("Mine"). Sadness, on the other hand, is present as regret ("Back to December") or grief ("Last Kiss"). It can also be found alongside anger (15%) as a combination of hurt and resentment ("Dear John"), as well as bitterness ("Better than Revenge"), contempt ("Mean"), and frustration ("Foolish One") alone.

Red, defined by the artist as "a fractured mosaic of feelings" that "resembled a heartbroken person" (Jagwani 2021), is the album with sadness in the highest proportion (42%). It materialized in a wide variety of forms: hurt ("All Too Well"), anguish ("I Almost Do"), pity ("The Lucky One"), melancholy ("The Moment I Knew"), sorrow ("Ronan"), *grief* ("Forever Winter"). This emotion is followed by love (24%) and anger (15%). The former can be found as tenderness ("Stay Stay Stay"), liking ("Everything Has Changed", "Begin Again"), or longing ("Run"); while the latter is present as frustration ("I Knew You Were Trouble") or annoyance ("We Are Never Ever Getting Back Together", "Girl at Home").

In the next three albums, sadness is not a salient emotion. In *1989*, Swift presents a narrative of self-discovery, independence, romance, and reflection through three main emotions: love (28%), joy (23%), and fear (19%). Love materializes as tenderness ("You Are in Love", "This Love", "Slut!") or desire ("Style"), while joy is found as amusement ("Blank Space", "Shake it Off") or thrill ("Welcome to New York", "New Romantics"). Fear, on the other hand, is shown as anxiety ("Out of the Woods", "I Know Places").

Reputation is the album where love is found in the highest proportion (56%). This is interesting if we bear in mind that this is the first album that Swift released after her public fallout with Kanye West and Kim Kardashian, which led to a media backlash against her. In this album, Swift states that "the old Taylor can't come to the phone right now / Why? Because she's dead", thus suggesting that her innocent and uncontroversial image no longer exists. Musically, she presents a darker and more aggressive sound with heavy beats and distorted vocals, which create a mood of confrontation and defiance. It is then surprising to find such a vulnerable emotion as love predominating in a wide variety of forms: as desire ("Ready For It", "Don't Blame Me"), attraction ("Gorgeous"), adoration ("King of my Heart"), or tenderness ("Call It What You Want", "New Year's Day"). It is followed by fear (15%) and anger (15%). Fear is present as anxiety ("Delicate", "Dancing with Our Hands Tied"), while anger can be found as outrage ("Look What You Made Me Do") and scorn ("This Is Why We Can't Have Nice Things").

In *Lover*, Swift returns to an optimistic type of sound, as she embraces a more colorful, pop-driven production that reflects a positive feeling. In this context, it is not surprising to find love as the most prominent emotion (46%), portrayed in

the form of tenderness (“Lover”, “Paper Rings”) and desire (“False God”). It is followed by fear (22%) and joy (17%). The former is especially present as anxiety (“The Archer”, “Miss Americana & The Heartbreak Prince”, “Afterglow”, “Soon You’ll Get Better”, “Death by a Thousand Cuts”), as she worries about losing her loved ones, whether friends, family, or partner. Joy, on the other hand, can be found as gaiety (“Me!”, “You Need to Calm Down”) and relief (“I Forgot that you Existed”).

Folklore and *Evermore* are viewed by Swift as sister albums, as they were released five months apart and share several overarching themes, since they are both deeply introspective, storytelling-driven projects that focus on escapism and nature imagery. It is thus unsurprising to find that both albums present the same emotions (although in different proportions), and that both represent a shift from the previous ones. Sadness reappears as the main emotion (32% in *Folklore*, 40% in *Evermore*), followed by love (28% in *Folklore*, 24% in *Evermore*) and joy (15% in *Folklore*, 14% in *Evermore*). Sadness can be found as despair (“Exile”, “Hoax”), guilt (“Champagne Problems”, “Coney Island”), loneliness (“Tolerate It”), and melancholy (“Happiness”). Love is present through tenderness (“Invisible String”), longing (“Willow”), and attraction (“Cowboy Like Me”), while joy is in the form of amusement (“The Last Great American Dynasty”) and relief (“Long Story Short”).

Midnights explores the concept of sleepless nights and the thoughts that surface during those hours when the mind is restless. Therefore, this album is deeply introspective. It represents the last appearance of love (31%) as the first emotion, followed by sadness (23%) and joy (21%). Love is especially present in the form of tenderness (“Snow on the Beach”, “Sweet Nothing”, “Paris”) and desire (“Lavender Haze”), while sadness is realized as melancholy (“Midnight Rain”), grief (“Bigger Than the Whole Sky”), and loneliness (“Dear Reader”). Joy is also present as triumph (“Karma”) and thrill (“Bejeweled”, “High Infidelity”).

Swift’s latest album, *The Tortured Poets Department*, was conceived during a turbulent period in Swift’s personal life, following constant breakup and dating rumors. The album serves both as a reflection on personal turmoil and a commentary on the tension between private emotion and public persona. In this context, it represents a departure from all her previous albums in terms of emotions. For the first time, an emotion other than love and sadness ranks at the top: anger (33%). This emotion appears in a wide variety of forms: as fury (“Who’s Afraid of Little Old Me?”), bitterness (“The Smallest Man Who Ever Lived”, “Cassandra”), contempt (“Thank You Aimee”), and torment (“The Black Dog”). Anger is closely followed by sadness (32%), which can be found as agony (“My Boy Only Breaks his Favorite Toys”, “I Can Do with a Broken Heart”), grief (“How did it End?”), and melancholy (“Chloe or Sam or Sophia or Marcus”). Love appears in this album in the lowest proportion of Swift’s discography (16%) as attraction (“The Alchemy”) and desire (“So High

School").

3.2. Sentiment

A first approach to assessing the overall sentiment in Swift's discography is simply to use to the emotion annotations discussed in the previous section. If we ignore surprise, which does not inherently convey polarity (a surprise can be positive, negative or neutral), the other five emotions can easily be classed, at least in principle, as positive (love and joy) or negative (anger, sadness, and fear). Aggregating the proportions can be done by simple averaging. Table 4 shows the results of this aggregation.

	Love	**Joy**	**Anger**	**Sadness**	**Fear**
Taylor Swift	30	8	15	42	3
Fearless	30	25	10	15	5
Speak Now	30	15	5	35	5
Red	35	5	5	30	15
1989	25	10	20	30	16
Reputation	30	15	15	27	5
Lover	30	20	5	30	5
Folklore	40	6	15	30	2
Evermore	25	5	15	40	10
Midnights	20	10	15	40	10
TTPD	35	2	25	30	3
Mean	**30**	**11.00**	**13.18**	**31.73**	**7.18**
	Positive emotions (mean)		Negative emotions (mean)		
	20.5		17.36		

Table 4
Overall sentiment assessment by emotion grouping.

This methodology suggests that positivity prevails, albeit slightly, over negativity. However, it is worth using more sophisticated means to qualify sentiment for several reasons. First, love is not necessarily a positive emotion and does not always occur in positive contexts. For example, among the top ten modifiers of the noun "love" in Swift's lyrics, we find both positive (*magic*, *beautiful*, *true*, *great*), and negative words (*faithless*, *crooked*, *calamitous*). Also, as mentioned above, surprise may involve either positivity or negativity. These two factors alone may skew the results considerably and, in fact, change the overall polarity, as the aggregated emotion scores (20.5 vs 17.36) are not very far apart. Thus, we should use more sophisticated means, such as a lexicon-based sentiment analysis system to confirm these findings.

Figure 3 shows the overall sentiment scores returned by Lingmotif. The TSS (Text Sentiment Score) scores texts on a scale of 0 (extremely negative) to

100 (extremely positive), while the TSI is an intensity score where higher values indicate higher intensity.

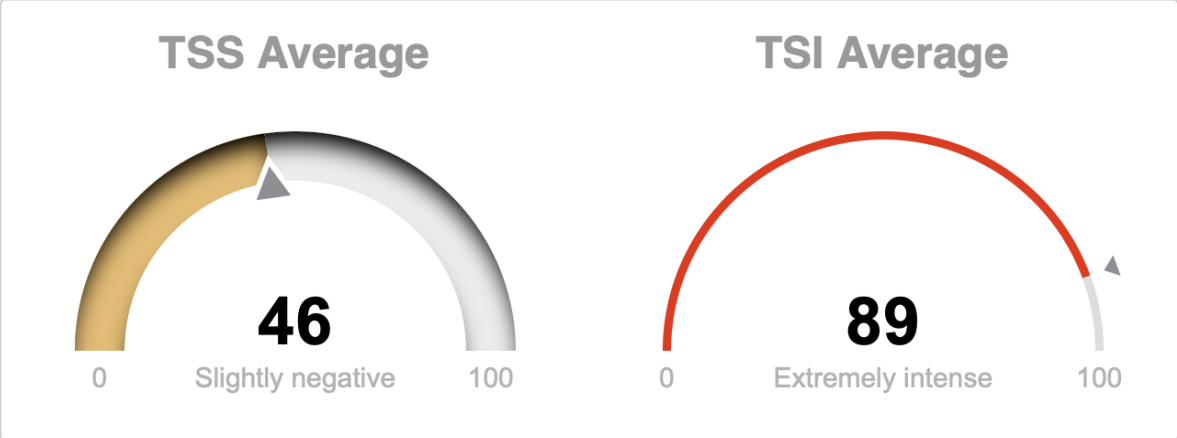

Figure 3
Sentiment analysis of the whole corpus.

A TSS of 46 does indeed tip the scales in favor of a slightly predominant negative sentiment, which contradicts the emotion aggregation results. The system also gives a score of 89 in terms of intensity, which is to be expected in lyrics where the main theme revolves around personal relationships.

Table 5 below shows the top 10 positive and negative items identified by Lingmotif in Taylor Swift's whole discography, as well as their absolute frequency in the corpus. Please note that these items have been lemmatized.

Top positive items		**Top negative items**	
Item	**Frequency**	**Item**	**Frequency**
love	374	lose	87
good	89	bad	86
smile	75	cry	52
best	66	hate	49
kiss	52	die	42
beautiful	50	screaming	37
like	35	fake	35
fall in love	33	mad	34
welcome	32	trouble	31
nice	27	wrong	31

Table 5
Top positive and negative lexical items.

The results show that the top positive terms in Swift's discography are mainly associated with being in love (e.g., "love", "kiss", "beautiful", "fall in love"), as shown in examples (1)-(3), where she sings about the early stages of being infatuated and starting a relationship.

(1) But can you feel this magic in the air? It must've been the way you **kissed** me / Fell in **love** when I saw you standing there (Today was a Fairytale)

(2) What must it be like to grow up that **beautiful**? / With your hair falling into place like dominos (Gold Rush)

(3) I **fell in love** with a careless man's careful daughter / She is the best thing that's ever been mine (Mine)

In turn, we can also find negative expressions that can be associated with emotional distress or even suffering (e.g., "cry", "die", "screaming"), as shown in (4) below, as the songwriter conveys a very intense feeling of grief. Loss of control (e.g., "mad", "trouble", "wrong") is also very much present in her songs, as can be seen in (5)-(6). Overall, we can see that the negative terms are fairly dramatic, while the positive ones, although present in a much higher frequency, are not as intense.

(4) Now I want to sell my house and set fire to all my clothes / And hire a priest to come and exorcise my demons / Even if I **die screaming** (The Black Dog)

(5) I knew you were **trouble** when you walked in (I Knew You Were Trouble)

(6) Isn't that what they all said? / That I'll sue you if you step on my lawn / That I'm fearsome and I'm wretched and I'm **wrong** (Who's Afraid of Little Old Me?)

The analysis of the evolution of sentiment in Swift's discography is shown in Figure 4 below, where the trend line clearly shows an increasingly negative semantic orientation. In fact, there seem to be two phases in her discography: one ranging from *Taylor Swift* to *Lover*, where the TSS remains around 50 on average, and one ranging from *Folklore* onwards, in which the TSS barely goes above 40. In other words, the use of negative words and expressions is increasing in her lyrics.

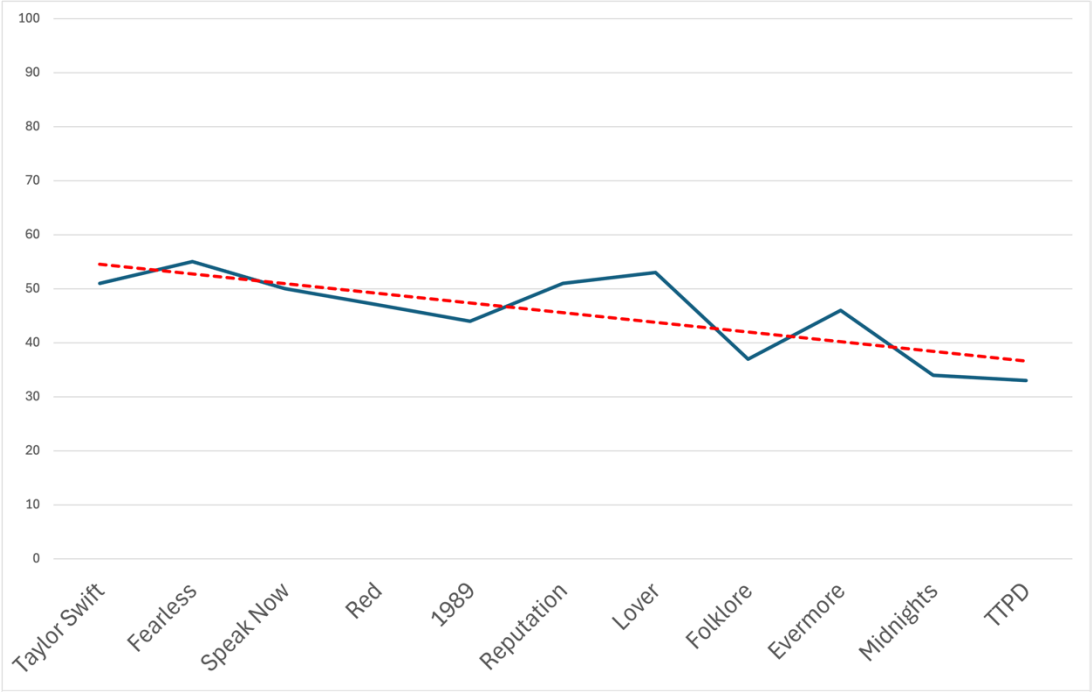

Figure 4
Evolution of sentiment in Taylor Swift's discography.

There are, however, some mismatches between emotions and semantic orientation in these albums. The LP *Taylor Swift*, which presented sadness as its first emotion, is classified by Lingmotif as slightly positive (TSS: 51). *Fearless* and *Speak Now*, which had love as their main emotion, are classified by Lingmotif as only fairly positive (TSS: 55) and neutral (TSS: 50), correspondingly. *Red*, the album with the highest proportion of sadness, is categorized as only slightly negative (TSS: 47). Bearing in mind the difference in emotions between these four albums, one would expect them to present a higher degree of variation in terms of semantic orientation. Although these results could be explained by the fact that sadness is still part of the three main emotions in most of these albums, the case of *1989*, where love is actually followed by joy, refutes this theory, as it was still classified as fairly negative (TSS: 44). *Reputation* and *Lover*, the two albums with the highest proportion of love, are categorized as only slightly positive. Therefore, it seems that the proportion of a particular positive or negative emotion is not directly proportional to the polarity.

What these mismatches suggest is that there is not a correlation between certain emotions and a higher presence of sentiment-laden words, whether positive or negative. This is especially true of love. Although we tend to categorize love as a positive emotion, the actual sentiment may be positive or negative depending on the words that contextualize this emotion. Furthermore, this contextualization and modulation of the love emotion materializes as mechanisms other than sentiment-laden lexical items.

Rhetorical devices also play an important role, as examples (7)-(8) below illustrate. These two instances, extracted from the albums *Fearless* and *Speak Now*, show how Swift often expresses feelings such as falling in love without any other positive words, thus leading the sentiment analysis system to classify such verses as neutral.

(7) He knelt to the ground and pulled out a ring / And said, marry me, Juliet / You'll never have to be alone (Love Story)

(8) You said, "I'll never leave you alone" / You said, "I remember how we felt sitting by the water / And every time I look at you it's like the first time" (Mine)

The *Red* album, characterized by the presence of themes such as sadness and heartbreak, also presents verses that escape lexical sentiment analysis systems because of the absence of negative sentiment words. Example (10) shows Swift recalling a relationship that she cannot move on from; however, she expresses this without using negative terms.

(9) Remembering him comes in flashbacks and echoes / Tell myself it's time now, gotta let go / But moving on from him is impossible / When I still see it all in my head / In burning red (Red)

The case of the album *Midnights* is especially interesting, as it was classified by Lingmotif as fairly negative (TSS: 34), although its main emotion is love. Once again, this discrepancy can be attributed to the actual lack of sentiment words on Swift's lyrics. Example (10) shows how Swift expresses that she is infatuated with her lover through the 1950s expression "lavender haze", which means to be in the early stages of falling in love. Nonetheless, this was classified as negative due to the presence of terms such as "haze", "damn", and "shit". Example (11), on the other hand, is an excerpt that was categorized as neutral because no sentiment words were found, even though Swift expresses the feeling of falling in love.

(10) I feel the lavender haze creeping up on me / Surreal, I'm damned if I do give a damn what people say / No deal, the 1950s shit they want from me / I just want to stay in that lavender haze (Lavender Haze)
(11) I do not even dare to wish it / But your eyes are flying saucers from another planet / Now I am all for you like Janet / Can this be a real thing? Can it? / Are we falling like snow at the beach? (Snow on the Beach)

4. Conclusions

Swift's discography shows a dynamic emotional landscape, with love and sadness at the forefront throughout most of her work. While these two emotions tend to accompany each other, the balance between them changes from album to album, thus showing that each era has a different focus: from heartache in *Taylor Swift*, to the more complex emotional combinations of *Reputation* and *Lover*, which incorporate fear and anger into her narrative, yet maintain love as a central theme. In her latest release, however, Swift breaks away from her established emotional formula, placing anger at the forefront for the first time, perhaps hinting at a new direction in her artistic expression.

On the other hand, the sentiment analysis reveals a moderate yet distinctly negative sentiment score, coupled with high intensity. This dynamic is aligned with the introspective themes prevalent in her lyrics, particularly as she focuses on her personal life experiences. Moreover, a shift in sentiment emerges across her albums, marking a trend toward increasingly negative sentiment from *Folklore* onwards. This evolution suggests that her work is transitioning towards a deeper exploration of complex, sometimes darker emotional states.

Finally, a significant mismatch was revealed between the emotions conveyed in her lyrics and the classification of those emotions based on sentiment words. While one might expect albums with a higher proportion of emotions like love or sadness to align more closely with positive or negative sentiment scores, the findings paint a different picture. For example, albums like *1989* and *Reputation*, where love predominates, were classified as fairly negative or slightly positive, suggesting a disconnect between emotions and lexical choices. Swift's lyrical style often expresses deep emotions such as sadness, love, and anger without relying on explicit positive or negative terms. Instead, her use of rhetorical devices and subtle language choices results in verses being classified as neutral, despite conveying clear emotional depth. This suggests that emotion in music cannot always be measured by the frequency of sentiment words, as demonstrated in the lyrics of albums such as *Fearless*, *Speak Now*, *Red*, or *Midnights*. This is in accordance with previous findings by Du (2024), whose study showed that music often conveys complex emotions that sentiment classifiers struggle to quantify accurately. Ultimately, Swift's discography illustrates the complexity of expressing human emotions, showing that meaning is often embedded in more nuanced and implicit forms of language. This suggests, as put forward by Du (2024) and Choi *et al*. (2018), that while sentiment analysis is a useful tool, it is perhaps insufficient to fully capture the depth of the emotional storytelling in music. Swift's lyrics precisely exemplify this, as their emotional richness often contrasts with how sentiment classification systems categorize them. In this sense, emotion in music might be more exhaustively studied if we considered the implicit and complex ways in

which artists such as Swift convey meaning through language.

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