**Transference and the Screen: Digital Embodiment in Contemporary Abstract Painting.**

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*“Modern(ist) thought had stressed the role of subjectivity in framing appearance and imbuing it with meaning and coherence. (However) for Guy Debord and Jean Baudrillard technology is seen as itself supplying the frames through which the subject orders visual appearance and makes it meaningful. From this perspective, the mass reproduction and dissemination of images is understood to colonise the conscious and unconscious processes through which the subject senses, desires and understands the visible world. Thus, notwithstanding their differences, Debord’s ‘spectacle’ (in ‘Society of the Spectacle’) and Baudrillard’s ‘simulacrum’ (in Symbolic Exchange and Death’ and ‘On Seduction’) both describe a visual condition marked by withdrawal of the visual agency ascribed to the modern subject*”

**Graham MacPhee,** *Technology, Time, and the Return of Abstract Painting: Critical Perspectives on Contemporary Painting; Hybridity, Hegemony, Historicism.* *(2002,P.112)*

Unlike Modernisms role of privileging subjective thought as meaning or Postmodernisms withdrawal of subjective agency as supplied by the frames of new technology, I will explore how, in the 21st century, the ubiquity of screen imagery simultaneously transforms both the painters subjectivity and ontological relations to making; that the context and presentation of painting is *imaginatively* informed and reflected through transferable identification with and through the digital screen. I will argue that rather than adopt the position of the withdrawal of the postmodern subject in particular, the everyday presence and use of the digital screen gives rise to a complex and dialogical activity that which circumnavigates subjective usurping or dualist division as outlined above.

To do this I will need to combine a number of seemingly varied or competing philosophies from different academic fields. I will begin with Andrew Benjamin’s notion that contemporary abstract painters transform modernist formalism by re-staging a repetition of abstractions history. This re-staging will then be compared and contrasted with the art historicism of Clement Greenberg’s singular, modernist, media specific relation of painting that denies any reference to exterior representation. I will then overlay these two opposing theories onto Merleau-Ponty’s phenomenological claim that the painter reverses the relationship between the body and a painting by *imaginatively* overlapping the interior sense of self with the world of external objects; subjectivity as a mirroring of the world of objects as he puts it. I will then attempt to further link contemporary and historical painting, phenomenology and subjectivity by studying Stephen Perrella’s ‘Hypersurface’ that proposes a non-subjective, architectural deterritorialisation; a fluxus of transparent, fluid systems of multi-dimensional signs in which the contemporary subject traverses and which is activated by the digital screen.

***David Reed, ‘#596’, 2006-2009, Oil paint and alkylyd paint on polyester, 66.5 x 133cms***

In order to make sense of these seemingly conflicting claims and explore in more detail how they reflect and co-exist with digital representation we therefore need to (i) Redefine Clement Greenberg’s singular definition of media specificity by utilising Andrew Benjamin’s model of a ‘staged historical repetition’ in abstract painting. (ii) Understand how Merleau-Ponty’s *internal equivalent* of the *imaginary texture of the real* acts as an ontological reversibility of the subject/object through the act of physical making. (iii) Discover how being and making are accessed in and through digital subjectivity in Stephen Perrella’s architectural Hypersurface. And finally (iv) how these correlations are re-presented in the material practices of contemporary painters such as Charlene von Heyl, Albert Oehlen, David Reed, Chris Ofili and my own work.

***Charlene von Heyl, ‘Carlotta’, 2013, oil paint, acrylic paint, charcoal on canvas, 208 x 193cms***

I will demonstrate how these artists, consciously or otherwise, build into their painted practices strategies in relation to reversible disembodiment; how the (physical) application of their medium (or mediums) may in some instances appear as flat mimics of the screen, but in others retain thick painterly gesture that doesn’t necessarily adhere to the surface ‘look’ of the flat screen. For example, unlike David Reed (or myself) who disguise the trace of the hand gesture through flat, painted application, Charlene von Heyl and Albert Oehlen reveal a trace of their hand by applying paint gesturally or thickly. Although these four artists appear diametrically opposed in style, they all ‘replicate’ the tropes of Abstract Expressionism. In the context of historical tropes or even cliché, their work I will suggest, is *imaginatively* re-framed in relation to the screen and changes the body’s sensuous relation to time and space which is central to contemporary painting’s criticality.

***Albert Oehlen, ‘Loa’, 2007, oil paint, acrylic paint, spray paint, ink, photograph on paper on canvas, 170 x 310cms***

Surface Flatness as a Site for Re-Configured Activity

So, to locate an *imagined* agency in contemporary abstract painting, we need to begin with Greenberg’s understanding of advanced modernism in which he insisted that the physical application of paint carried a unified, singular and immediate relation to itself with no reference to representation or any other external associations; that ‘’the limitations that constitute the medium of painting - the flat surface, the shape of the support, the properties of the pigment – came to be regarded as positive factors, and were acknowledged openly. (1960,p.86). For Greenberg, material flatness in painting exemplified all “that was unique (to) the nature of its medium”(1960,p.86).

Andrew Benjamin by contrast offers a contemporary context for painting that operates outside the restrictive field of ‘pure’ materiality. Painting for him is an irreducible act of making that works against Greenberg’s dualistic opposition to external by constructing a thesis of *becoming*, or a yet-to-be resolved activity that historically locates a schism in painted flatness. For Benjamin, the act of making in contemporary painting becomes an arena of constant renewable activity and as such is irresolvable either practically or theoretically in advance of making. Benjamin says that Greenberg’s painting theory which refers only to itself, is no longer relevant because Greenberg did not take into account the full relation between the subject and the object as being in the world. Greenberg’s viewing subject whose *at-onceness* presumes that there is “a unified singular entity which in a single moment confronts a work that is given in its absolute simplicity”(Benjamin, 1996,p.27), assumes that opticality is defined or limited by an economy of completion and exhaustion that becomes an immediate experience. Instead, Benjamin argues, opticality is a relationship between a subject and an object; the subject comes to be at any one moment an effect of these subjective/objective determinations. For Benjamin, these determinations are *irreducible* and eliminate Greenberg’s limited notion of the undifferentiated subject as the foundation of subjectivity. Therefore, unlike a purely optical, detached sensory experience, the art object is transfigured to include an ontological experience with both the eye and the mind because the object resists the possibility of finality or completion and this also relates to experience. The contemporary painter as opposed to the modernist painter, according to Benjamin, reflects a self-conscious agency with the world of both representation and the world of objects.

So for Benjamin, Greenberg’s conception of ‘modernist painting’ as flat surface isre-configured in the contemporary and changed into an “open space without a single and unified texture”(1996,p.42). This means that the physical interplay between flatness and immediacy, initially brought about by the modernist painter, is maintained in contemporary abstraction, but only as “a painted recognition of the impossibility of that immediacy”(1996,p.42). This Benjamin says opens out the possibility of a yet-to-be resolved *becoming* in painting. Benjamin advocates an “interplay between a holding - the retention of the genre - and an opening out”(1996,p.42) as an affirmative possibility which criticality demonstrates a subject/object *complexity* through its surface, which is relationally embedded within the genre of abstraction but through exteriorized repetition.

In contradistinction though or perhaps as an overlap of how I want to demonstrate the melding or overlaying of previously distinct academic fields, the phenomenologist Merleau-Ponty suggests that the act of painting is related to the processes which drive it - an internalized reasoning and desire converted into the *being* of the painting (via vision) through thought and decision making. This *internal equivalent* of the *imaginary texture of the real* means that the painters thought (which is transposed onto the concrete world) allows for the painter’s *becoming* onto the world as a mode of approach rather than a means of *(real or simulated)* representation. The final results of which *represents* the painter’s style. *Approach as style* for the painter has a reflected relation to the fleshiness of what she/he sees because of the awareness of her/his own body. From this position the painter forms the initial outline of the work in hand in their own perception through the deployment of painterly language. It is through perception that the painter attempts to make manifest ‘diffuse’ meaning so as to produce an established meaning offered to the viewer, which Merleau-Ponty says is *auto-figurative:*

The painter’s vision is not a view upon the *outside,* a merely ‘physical-optical’ relation with the world. The world no longer stands before him through representation; rather, it is the painter to whom the things of the world give birth by a sort of concentration or coming-to-itself of the visible. Ultimately the painting relates to nothing at all among experienced things unless it is first of all ‘autofigurative’ (1960,p.141).

So auto-figurative *overlapping* occurs between the subjective and objective worlds starting with the painter’s nascent thought and ends with unique *style.* But what ontological criteria can we apply to access Benjamin’s historical staged-repetition as a *becoming* of activity? How do we interpret interest, value and style in painting through Benjamin’s *surface as a site of activity*? What in painting constitutes *content* and how is that made materially manifest through line, colour, form, depth, composition etc.? Indeed, exactly where is abstract paintings relation to the concrete world as a Hypersurface?

In the first instance it is through Merleau-Ponty’s notion of the *style* of the painter that we can concentrate on the value placed *on,* or rather, to give a value *to* the painter’s work in the contemporary - *value* as *style* becomes ‘content’ through context and this is achieved through hyperreflection. In the second instance, *Style as context* re-configures the ‘painter painting’ but only I will argue, when it is also seen through Stephen Perrella’s digital/architectural model which claims that the inside must reconnect to the outside. Via Merleau-Ponty’s *imaginary texture of the real* therefore, the contemporary painter *overlaps* her/his autobiographical *reversible imagination* through painterly language that is activated by the digital sign and Hypersurface.

***David Reed, ‘#403, 1997-1998, Oil paint and alkyd paint on solid ground, 81.5 x 142.5cms***

Perrella’s Hypersurface discusses the contemporary experience of the subject as a disembodied condition through the surfaces of architectural materiality. He claims that modernist “form has been pushed out of relation to function, programme has been dissuaded from context, and structure is disjoint from signification”(1998,p.10). Therefore, Hypersurface offers a variant of (human) agencies which are singular yet connected but in a state of flux by absorbing *and* resonating meaning as an infrastructural term; as a middle ground between the traditionally conceived body/object duality.

Because Perrella argues that if “human agency is evermore defined through technological interfaces… subjectivity co-figures architecture in a complex way”(1998p.12), we as subjects become or are part-media constructs as well. As a result, being and agency is inevitably manifested both through the computer screen where we are embodied as cursors, and also through the built environment in which we access both other bodies and technology; “an inflected place where we encounter ourselves, but as technology”(1998,p.13). For Perrella, “media architecture (as he calls this condition) helps to establish an infrastructure for Hypersurfaces only without its material aspect”(1998,p.10). Hypersurface becomes fully intense when it is both surface/substance *and* signification, a play through each other in a temporal flux, a relational exchange between digital signs and the forms which support them. And by extension, as augmented form/image; a virtual deterritorialization that is manifest through the relations between our physical embodiment and the disembodied screen.

So, if Hypersurface offers a generalized infrastructural term which begins to ontologically frame contemporary being, how could painting be re-thought in this context? And equally, how could individual practices be understood as an extension or *becoming -* of what a painter’s expression or *style* may be in relation. This now leads me to the question of aesthetic evaluation of *style.* For example, how do we define which of David Reed’s paintings are more *aesthetically reflective* because, or despite of, his embodied *overlapping* with the architectural and the screen*?* As I previously explained when overlaying Merlea-Ponty with Perrella, *value* as *style* becomes ‘content’ through context in the contemporary, rendering Greenberg’s value judgments of *purity* and *quality* irrelevant tools (indeed factors). The processes of production in contemporary painting therefore become more complex and it is here that we need to examine the said individual painters.

Style as Hypersurface in Contemporary Painting

Arthur C. Danto, when describing the act or build-up of David Reed’s painting process says that “Reed always studies what he has produced in order to see which particular passages stand out. The reasons for selecting a passage are bound up with Reed’s entire sensibility as an artist, and they are not easy to articulate”(1999,p.125). From this selection of passages Reed then makes further choices for the construction of the painting which finally appear as flat, almost photographic renditions of gestural abstract painting. Because Reed’s work both borrows from the traditions of Abstract Expressionist and Baroque painting as mimicked simulations, and because the forms are simultaneously physical brushstrokes *and* flat representations of brushstrokes, Reed’s paintings confuse the senses of sight and touch - what we expect to see as a physically manifest gesture of the painted form as a materiality in its own right - means that instead we see the same form both as paint and as a representation. The materiality of Reed’s painting demonstrates a tangible relation between the materiality of the traditions of painting and paintings representation as flat reproductions in the world of the sign; a relational cross-over between surface representation and the objective world.

We can also think of Danto’s description of Reed’s work here as ontological; a lived, bodily *overlapping* with the world as reversibility through the *style* of Reed’s colour schemes. Danto describes the colour in Reed’s paintings as adopting “sometimes lurid hues, I think of his painting as Manhattan baroque - or, as with the cheeky red and mustard of #439, Las Vegas baroque”(1999,p.122). Reed’s paintings reposition the ontological nature of the sign of abstract and baroque painting therefore *hyperreflecting* those signs through colour. This occurs not only because of the comparisons with Merleau-Ponty’s relationship between the imaginary and the real - “the ‘carnal obverse’ of the life led by the real in my own body”(1993,p.181), but also with a concern for colour which Merlau-Ponty says is unstable when determining space from an internal law of construction. These colour comparisons I would argue, determine the *style* of Reed’s painting’s but this time as *imaginary textures of the real.* Reed’s voluminosity of colour rejects the binding of the drawn outline in order to include depth and space in his paintings as an inter-relational overlapping of vision, thought, and the body of the painter.

***David Reed, ‘#625’, Oil paint and alkyd paint on polyester, 66.5 x 137cms***

Reed’s approach also suggests that the notion of Greenbergian materiality as standing in for itself - the carrier of its meaning as a medium, could be re-configured as the carrier or operation of Merleau-Ponty’s ‘carnal obverse’, not as an expression of ‘pure’ inner subjectivity, but as *auto-figurative,* an *overlapping* with the conventions of art historical tropes replaced as up-to-date city-scape external colour schemes. This seems to me to offer an experiential, embodied ontology for future painting that flows as a co-presence with *all* mediated signs in the world of objects as *poetic* resonance. But what of the plausibility of Stephen Perrella’s Hypersurface’s to extend the overlap of experiential embodied ontology through the symbolic virtual? How does Hypersurface change the body’s sensuous relation to time and space? And what are the relations between ontology with the digital screen? Perhaps more importantly, how does architectural Hypersurface allow us to articulate the digital *in* and *through* painting as an extension of Merleau-Ponty’s *auto-figurative* style?

As we have seen, Perrella’s Hypersurface informs the flux of ontological relations and discourse in the world of objects. But this cannot result in a consensual collectivity because the cultural enfolding of technology as a series of generative effects are not reducible to a singular, interiorisation. Rather, these effects are constantly shifting back and forth between the material and the immaterial. Instead of accepting Greenberg’s notion of purity where painting was to engage “with all that was unique in the nature of its medium”(1960,p.86), now the process or construction of a painting is worked through as exteriorization - as mediatised embodiment. In this sense, Greenberg’s understanding of the pure is replaced by an embodied complex. Greenberg’s pure now *becomes* an embodied digital sign, offering to painting a seductive aesthetic which acts as a co-presence of experience superposed upon subjectivity. Unlike Jean Baudrillard’s postmodern understanding of the hyperreal as an ironic, fatalistic dualism, contemporary painting does not rely for its impact on a one-dimensional negation or criticism of previous works, recent styles or current social practices. Painting now actively seeks to re-engage with the wider culture and technology as an *apposition* rather than an *opposition.*

This *apposition* still leaves us asking how to choose, or rather, make distinctions between paintings in a non-dichotomous fashion - how to talk of painting as a phenomenology of aesthetics in relation to what we are witnessing with the proliferation of painting shows in museums and commercial galleries in the art world. How do we to distinguish and make value judgements between the various re-configurations of a painter’s *style?* How are we to become interested in the differences between what Greenberg would have called “second-hand or second rate painting”(1954,p.189), or just plain bad? Danto has pointed out that for contemporary art, terms such as “goodness and badness are not matters of belonging to the right style”(1997,p.355), because as a concept these judgments are based on a hierarchical, historicist system of art such as Greenberg’s prescriptive modernism that “finally takes its place in the intelligible continuity of taste and tradition”(1960.p93) whereby painting “find(s) the guarantee of its standards of quality as well as its independence”(1960,p.86).

***Chris Ofili, ‘Afrodizzia’, 1996, oil paint, paper collage, glitter, polyester resin, map pins and elephant dung on linen 244 x 183cm.***

Instead, re-reading contemporary painting through Merleau-Ponty’s *imaginary texture of the real* as an *apposition,* alongside Greenberg, means that contemporary painting is able to transform judgment (of its inherited painterly language), via aesthetics and style, into a simultaneity of externalized, multiplicitous mirrors of Hypersurface and which is activated through vision. For example a contemporary painting can mix Old master illusionism (Greenberg’s disparaging term) with high Modernism and Pop Art if that is what is required by the artist. Similarly, paint or external elements may be introduced onto the painting, such as Chris Ofili’s mixture of acrylic painted dots, glitter, resin, cut-out magazine images and elephant dung etc. Equally, an emotive response may be sought from the viewer by the inclusion of say, either a series of marks or signs, or a particular green that could be translated as representing the colour of a remembered room or era in which that room was important - a colour/mark/sign that has a resonance for the artist. Painting, in this hybrid/emotive/context, *becomes* an experimental exploration through its chosen medium(s), histories and relations to digital culture because aesthetic judgment is contextual and seen through Hypersurface - and this influences the criteria on which decisions are made by both the painter and the audience (not to mention the collectors, the publicists and the gallery circuits).

But the inter-contextuality of Hypersurfaces means more than just a re-contextualization of aesthetic judgement. The phenomenology of the painter’s yet-to-be-resolved practice is extended through the augmented spacetimes of digital interfaces by transforming style into a rhizomatic operation; as an *overlapping* of the *imaginary texture of the real* through material practice. For me then style, re-configured through the digital sign, offers an augmented plenitude of visual information at increasingly fast speeds which are exponentially filtered through the painters gaze as a re-constitution of the material world. And painting now, I would argue, is made aesthetically manifest by the speed of the digital. Painting as *reflected* ‘real-time’ becomes a series of *relationional* materialities - it is unique in enabling an intertwining of the internal and the external, between the gaze, the body, the world of objects, and the augmented digital as irresolvable timescale complexities. Paintings *criticality* therefore is *uniquely* bound up as a constant *overlapped* negotiation between physical, material manipulation and the symbolic, imagined digital; irresolvable complexities which become dialogical mirrors of the screen.

***Albert Oehlen, ‘Easter Nudes’, 1996, oil paint and acrylic on canvas, 75x107cms***

Albert Oelhen for example, in his paintings from the 1990’s, neatly *overlaps* the *internal equivalent* through *bodily function* by making work which contains both familiar abstract painting tropes of gesture and mark with complex, burlesque, visual juxtapositions of fragments of recognizable forms through digital signs. Oehlen’s insistence on the merger of abstraction with gestural renditions of figuration means that he is an important bridge here with Chris Ofili’s hand-crafted materials.

Oelhen sometimes constructs his paintings based on computer drawings, which already puts them at one remove from the hand-crafted. But the use of the computer is simply a tool of construction for the painting (much in the same way as a pencil drawing) and is not a prerequisite for the demonstration of an ironic, dualistic ‘at-a-distance’ referencing. Oelhen re-renders gesture as an absurdist paradigm, deliberately forcing a kind of anti-formal formalism as a re-assessment of the expression of abstraction whilst simultaneously offering no clear direction of intention when the final painting is presented. Oelhen achieves this ‘lack of intention’ (which is itself an intention) by scattering and overlapping thought and ideas through the accumulation of hand painted form, colour, matter and proportion. As Fabrice Hergott says:

The canvases, covered in bold brushstrokes and colours, bear forms which are alternately distinct and blurred. Printed fabrics are juxtaposed with figures which seem to be either deleted attempts or preliminary sketches… (these works) are like a surface pile-up of motifs flung together like objects in an attic - not sorted according to specific characteristics, but simply crammed in wherever there was space (1995,p.39).

***Albert Oehlen, ‘Born to be Late’, 2001, ink jet ink, oil paint, enamel paint on canvas, 330 x 340cms***

Through “warm colours, thick welts of paint, a lack of geometric perspective (there is no vanishing point)”(1995,p.39), all the marks and forms are cut off by the edges of the painting often with little feeling or sense of elegance or scenic satisfaction. Robert Orht describes this lack of formal elegance as recalling a psychedelic delirium by ignoring the edge of the canvas as a (perspectival) boundary, so that what is contained on the painted surface is a surface of the image - forms drift away or collapse “creating the edges, frames and markings of the voids in a collision of different temporal spaces of action and thought”(1995,p.21). In turn these collisions of action and thought nudge the development of Oelhen’s paintings in different visual directions during their construction. Unlike Hergott however, Orht argues that intention does exist in this seeming lack of multiplicitous direction “which only becomes clear when perception is inherent in the act of painting and no longer segregates its contrasts or rejects inappropriate elements”(1995,p.21).

For me, Oelhen’s interest in the mixing of the temporal with ‘painterly’ elements contained within the framing discourses that we recognize as painting (such as a formal/informal application of coloured pigments onto a support), means that we can understand how to apply the tropes or clichés of abstraction as Benjamin’s re-staged abstraction; to re-animate *an area where skills are reinvented* through the sign of its own medium and become an *invented staged imaginary form* of Merleau-Ponty’s *overlapped* expression. In turn, could we not *poetically* imagine Oelhen’s delirious, informal/formal/non-formal use of paint as a relational digital *style*? For example, could hand crafted painting be understood as a bodily manifestation of the augmented space of the digital - as a replication or *imagined* reconstruction of a PC’s software? Or indeed, a mimic of programmes such as Windows which ‘overlays’ one set of depthless information over another?

***Michael Stubbs, ‘Velocity Acceleration Reflector’, 2016, household paint, tinted floor varnish on MDF, 122x122cms***

To try and make sense of the arguments outlined above in relation to these artist’s practices, I will finally attempt to place myself in a position that examines the gap between the world of objecthood and the simulated, virtual world of digital signs. Through making I present this as an *imagined* relation; a phenomenology of aesthetics which is intended to complement the digital rather than work against it - to recognize the impact that reproducible (non Descartian) digital space has on our understanding of our bodies as sole authors of unique objects. Equally, and at the same time, my paintings seek to cross-over and merge recognized historical genres and methodologies of Art History such as Abstract Expressionism and Pop Art by developing the relation between the bodily and the augmented as an accumulation of temporality, action, colour, form and fragmented popular-cultural signs. These signs eventually become erased and buried within poured, transparent and opaque flat layering and operate as reversible palimpsests; the agency between the intractability of the materials (poured paints and varnishes) and the willful deliberation (of graphically reproducible commercial signs), is intended as a re-staging of the tropes of painterly craft.

***Michael Stubbs, ‘Fresh Go Info’, 2017, household paint, tinted floor varnish on MDF, 122x122cms***

This process-based layering becomes both an optical *and* physical stratum of sensual decoration. The results are evidenced as a personal, auto-figurative style represented through the surface effects of colour, choices of signs, utilitarian commercial paints and composition etc. In this context, surface effect *as style* becomes a ‘pure’ seduction presented through material methodology. Contemporary abstract painting is transformed into a ‘complex’, re-staging of historical tropes which are activated through an *imagined* Hypersurface. Subjectivity therefore is critically re-configured objectively *in, out* and *through* the digital screen.

**Notes**

Baudrillard, J. (1988). *Selected Writings*. Edited and Introduced; M. Poster. Translators; P. Beitchman, P. Foss, C. Levin, M. Maclean, J. Mourrain, P. Patton, M. Poster. Stanford: Stanford University Press.

Benjamin, A. (1996). *What is Abstraction?* London: Academy Editions.

Danto, A.C. (1999). ‘Bedside Manner; David Reed’.  *Artforum* no.10, vol.XXX (Summer). pp.120-125.

Greenberg, C. (1993). *Modernism with a Vengeance, 1957-1969: The Collected Essays and Criticism, vol.4.* Editor; J. O’Brian. Chicago and London: University of Chicago Press.

Hergott, F. and R. Ohrt (1995). *Albert Oelhen*. Editor; Burkhard Riemschneider. Cologne: Taschen.

MacPhee, G. (2002). *Technology, Time, and the Return of Abstract Painting: Critical Perspectives on Contemporary Painting; Hybridity, Hegemony, Historicism.* Editor J. Harris. Liverpool University Press and Tate Liverpool.

Merleau-Ponty, M. (1993). *Aesthetics Reader: Philosophy and Painting*. Editor and Introduction; G. A. Johnson. Translation Editor; M. B. Smith. Evanston: Northwestern University Press.

Perrella, S. (1998). Editor. ‘Hypersurface Architecture I’. *Architectural Design* no.5-6, vol.68.